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Administrative Leaders' Experiences With Information Communication Technology Platforms and Best Practices in Smart Schools

Byron B. Jackson
Walden University

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Walden University

College of Management and Technology

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Byron B. Jackson

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Walden University
2022

Abstract

Administrative Leaders' Experiences With Information Communication Technology
Platforms and Best Practices in Smart Schools

by

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MPhil, Walden University, 2019

MPA, University of Southern California, 1994

BS, University of Kansas, 1974

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Applied Management and Decision Sciences

Walden University

February 2022

Abstract

Administrative leaders in traditional schools have failed to manage resources, implement best practices, and successfully integrate information communication technology (ICT) platforms into K-12 programs. The purpose of this qualitative, transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders who have been successful in their integration of ICT platforms and best practices in K-12 smart schools. This study was framed by two concepts: (a) building digital capacity in smart schools and (b) ICT platforms integration in smart schools. Both concepts were theoretically grounded in social cognitive theory and system theory. Data were collected in semi structured interviews with seven school administrators who met inclusion criteria; data were analyzed using a modified van Kaam method. Ten themes emerged: (a) lead by example, (b) establish a shared vision with school system stakeholders, (c) building team cohesion and trust to accomplish a goal, (d) support teachers' identities for building ICT, (e) support students' identities for building ICT, (f) staying connected and abreast of new technology, (g) teach critical thinking skills by example, (h) lead as a good listener and great doer, (i) lead to succeed ICT program systems integration, and (j) support integration of an ICT ecosystem across the school system. Launching and properly leading ICT platforms integration in smart schools may drive positive social change by providing an invaluable support system for preparing students with learning to succeed in the modern digital classroom throughout their academic career.

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Dedication

I would like to dedicate my work to my late mother, Zenobia A. Jackson who instilled in me the values of hard work and persistence. My father, Samuel Jackson who taught me patience and perseverance will pay off in the end. My two loveable sisters who have stood by me through the bitter end. To my three adorable children, Bari, Palmer, and Jalen who I love dearly and I am so proud of each one of you. To all of my family and friends for being there for this arduous and strenuous journey. Thanks to everyone for your help and support!

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Dr. Karla S. Phlypo mere words cannot express my appreciation and gratitude for your valuable time, motivating comments, and positive suggestions. We all remember learning about Sir Isaac Newton and the laws of action and reaction. For every action, there is an equal and opposite reaction. In other words, when two objects come into contact with other objects, they generate their own force. This is exactly what happened when Dr. Phlypo worked her magic at the PhD intensive or the numerous residencies. Like Newton, students bring their own collective energy and mentors add value to that energy by transforming students into scholar-practitioners.

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Chapter 1: Introduction to the Study

Introduction

Since 2012, administrative leaders, principals, and teachers have been given educational policy mandates to integrate effective information communication technology (ICT) for K–12 programs in smart schools (Ross, 2020). Hwang (2104) defined *smart schools* as interactive environments that improve learning and efficient classroom resources. Smart schools have been the primary vehicle for integrating ICT platforms efficiently and effectively (Voogt et al., 2017). More importantly, smart schools allow administrative leaders the flexibility to provide a holistic approach to supporting classroom teachers and allocating sufficient resources to elementary students (Duan et al., 2020). Administrative leaders view smart schools as an essential component of integrating ICT platforms and enhancing each student’s learning experience (Lamb & Weiner, 2021).

Administrative leaders recognize that ICT platforms have accelerated rapidly within this educational context and require new skill sets (Collins & Halverson, 2018). For example, Texas’s third-largest school district has invested 1.2 billion dollars in restructuring the learning environments and modernizing their schools to integrate technology in the classrooms (Cook, 2020). Thus, administrative leaders have been called upon to adopt a comprehensive strategy regarding the modernization of the classroom and contribute to the efficient use of ICT platforms (Keane et al., 2020).

Today, smart schools have become one of the most innovative learning environments that support an array of internet activities, online courses, and ICT

platforms (Shepherd & Taylor, 2019). Instead of continuously replacing school textbooks and software programs, smart schools have used ICT platforms to teach students math, reading, and science courses in any Wi-Fi environment. ICT platforms have the potential to improve teaching in the classroom and to transform school systems (Ross, 2020).

Administrative leaders who have failed to adopt a comprehensive strategy and new skill sets have exhibited poor decision making concerning leveraging the full effects of ICT platforms (Militello et al., 2021).

Administrative leaders may have difficulty assessing the impact of the decision making process until after the resources have been committed to ICT programs (Dexter et al., 2021). For example, administrative leaders have made mistakes regarding purchasing untested technology, failing to train teachers, and lacking standards for evaluating ICT platforms (Zhang et al., 2016b). Unless researchers gain a better understanding of administrative leaders' beliefs regarding their role in implementing ICT platforms, there will remain a gap between administrative leaders' perceptions and practices in the classroom (Marshall & Taylor, 2017; Polly et al., 2021b)

The chapters in this dissertation reflect (a) a thorough review of the literature, (b) the critical components of the research design, (c) the results of the findings, and (d) the conclusions derived from the research study. In Chapter 1, I discuss the assumptions, definitions, and scope and delineations and transition to the literature review in Chapter 2.

Background

In the last decade, ICT has facilitated the increased use of smartphones, laptops, and tablets in K-12 programs (Polly et al., 2021a). Today, administrative leaders face the challenges of overcoming obstacles to efficiently integrate ICT platforms to assist in student-centered learning (Ross, 2020). In particular, administrative leaders have begun to identify the challenges of integrating ICT platforms in smart schools. The impact of ICT platforms has led to improvements in both student performance and modernization of the internal structures of the educational organization worldwide. For example, in Malaysia, the integration of ICT platforms has increased student usage by 79% and on large-scale initiatives introduced to digitize the Malaysian education system, from the Smart Schools program to the updated Frog Virtual Learning Environment in the classroom (Zainal & Zainuddin, 2020).

The results of past studies have indicated that administrative leaders can be reluctant to change their mindset and fail to cultivate a culture of innovation and overcome barriers to integrating CT platforms (Balkar & Kalman, 2018). Administrative leaders must develop a school culture that fosters a strategic vision that incorporates ICT platforms as innovation tools. Administrative leaders must provide daily support to teachers and systematically engage students in integrating ICT platforms (Ifenthaler et al., 2020). While digital devices are used extensively in the classroom, the administrative leaders have failed to integrate those activities or efficiently use ICT platforms (Kormos, 2021).

Most ICT activities were focused on first-generation technology processes, such as internet searches, PowerPoint presentations, and homework assignments (Varonis, 2020). As a result, it has been challenging for administrative leaders to bridge the gap between the students' experiences and the effective use of ICT platforms in the classroom. Administrative leaders view the integration of ICT platforms as an innovative approach to disseminating data and optimizing efficiency in K-12 programs (Christen et al., 2018).

The traditional approach of the teacher at the blackboard or lecturing at the podium as the primary teaching method has become outdated and an ineffective means of disseminating information to students (Walker, 2017). In contrast, smart schools have been employing a student-centered approach that has contributed to the success of integrating ICT platforms, such as (a) the belief of leaders in implementing best practices and (b) the aligning of digital devices to facilitate the student-centered learning (Tondeur et al., 2017). Thus, an administrative leader's belief plays a significant role in integrating ICT platforms and best practices in the classroom (McKnight et al., 2016; Militello et al., 2021).

Administrative leaders envisioned integrating ICT platforms to expand math and reading tools that enhanced self-regulated learning (Akpojotor, 2016). Thus, administrative leaders were instrumental in using ICT platforms in K-12 programs and urging teachers to discard outmoded practices. Administrative leaders recognize that ICT platforms have introduced new collaborative classroom strategies to support online learning, curriculum development, and software programs in K-12 programs. Due to the

accelerated growth of digital technologies, social scientists have been trying to understand how administrative leaders effectively and efficiently integrate ICT platforms into elementary schools (Kirschner et al., 2018; Maas & Hughes, 2020). Within this interactive approach, administrative leaders are called upon to embrace updated, innovative strategies to integrate ICT in smart schools, yet progress in these initiatives continues to lag (Lamb & Weiner, 2021)

Problem Statement

Over the years, administrative leaders have recognized that ICT platforms have not kept pace with the skill sets of administrative leaders and the best practices of teachers in the classrooms (Hébert et al., 2021; Tondeur et al., 2017). Alfaki and Khamis (2018) argued that 86% of administrative leaders use ICT platforms in every lesson plan, both inside and outside the classroom. However, administrative leaders have not achieved the learning outcomes or the efficient use of ICT platforms by addressing the needs of K-12 programs (Ryoo et al., 2021). Moreover, administrative leaders have been using outdated belief systems and operational methods concerning integrating ICT platforms (Carver, 2016; Polly et al., 2021b). The managerial problem is that administrative leaders in traditional schools have failed to manage resources, implement best practices, and effectively integrate ICT platforms into K-12 programs (Ali et al., 2017; Gonzales, 2020).

Researchers have stated that administrative leaders consistently use iPads, word processing, and data searches, but only 25% of administrative leaders use ICT platforms for critical thinking, interactive activities, and collaborative learning by implementing best practices in smart schools (Ross, 2020). Alfaki and Khamis (2018) noted that less

than 35% of administrative leaders effectively use ICT platforms for tasks other than grading assignments, recording attendance, and posting lesson plans. Administrative leaders face the challenge of reaping the benefits of ICT platforms and simultaneously addressing their outdated beliefs and outmoded operational systems regarding integrating ICT platforms (Carver, 2016; Håkansson Lindqvist, 2019). Thus, there remains a gap in the literature regarding administrative leaders' outmoded beliefs on implementing best practices efficiently into ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b). The specific management problem is that little is known about the lived experiences of administrative leaders who have successfully integrated ICT platforms and best practices in K-12 smart schools (Kormos, 2021; Militello et al., 2021).

Purpose of the Study

The purpose of this qualitative transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders and successful integration of ICT platforms and best practices in K-12 smart schools. To gain a deeper understanding of this phenomenon, a transcendental phenomenological research design was used to explore the lived experiences of administrative leaders with successful integration of ICT platforms in their smart school systems. Data were collected through in-depth interviews in the informal, interactive process characteristic of transcendental phenomenological research through semi structured interviews and dialogue (see Moustakas, 1994). The data analysis method used for this research study was Moustakas' (1994) modification of the Van Kaam method for analyzing the lived experiences collected through the development of a synthesis of the participants' experiences (textual

and structural descriptions), a synthesis of textural and structural meanings, and a composite description of the meanings and the essences of the experience (Moustakas, 1994).

Research Question

What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?

Conceptual Framework

The two concepts of (a) building digital capacity in smart schools and (b) ICT platforms integration in smart schools provided the conceptual framework for the study. The study was theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). The strength of these two concepts may frame the interface between administrative leaders' lived experiences and the successful integration of ICT platforms and best practices in smart schools.

Capacity building provides a systematic approach to disseminating information and a means for improving organizational infrastructures (Harris et al., 2013; Hondale, 1981; White, 2014). This systematic approach to capacity building focuses on examining the link between leaders' belief systems and policy making within large complex organizations (Wood & Bandura, 1989). Administrative leaders have become facilitators who influence organizational processes, structures, and policies. Thus, these three

concepts form the contextual basis for exploring the link between administrative leaders' mindsets and optimizing the integration of ICT platforms.

The social cognitive theory is used to emphasize that administrative leaders must have self-confidence and self-discipline to withstand adversity in an organization (Wood & Bandura, 1989). Administrative leaders' beliefs can affect overall performance and influence in an organization (Bandura, 1995). In other words, administrative leaders can motivate teachers and inspire students to learn by fostering an innovative environment. Thus, administrative leaders must articulate the vision and communicate the mission to teachers by systematically engaging in capacity building in the organization (Fullan & Hargreaves, 2014). Development of the conceptual framework will be discussed in greater detail in Chapter 2.

Nature of the Study

The qualitative method was used in this research. In a qualitative study, a researcher aims to understand the complexity of a situation or phenomena within its context (Tracy, 2019). In a qualitative study, a researcher discovers meaning through interviews, observations, and analyzing documents that participants attach to a phenomenon in their natural settings (Denzin & Lincoln, 2008). The qualitative method was used in this research to explore and discover the lived experiences of administrative leaders with successful integration of ICT platforms and best practices in K-12 smart schools.

The quantitative approach is used to find objective answers to range and correlation or cause-and-effect issues under study (Harkiolakis, 2017). Objective

numerical measurement and data analysis to establish the correlation between the quantitative method that applies to numerical analysis and data measurement were not preferred for this study. I chose the qualitative research design of transcendental phenomenology to answer my research questions and meet the purpose of the study because I sought to explore humans' lived experiences of a phenomenon (Moustakas, 1994). Qualitative phenomenological methodologies may be transcendental, with the research goal of identifying and reporting the lived experiences of participants of a phenomenon (Moustakas, 1994). Based on the concept of *epoché*, the elimination of a researcher's experiences and opinions about a phenomenon (van Manen, 2016), I used a transcendental phenomenological approach to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools.

The inclusion criteria for selecting participants included the following: (a) between 2–5 years of teaching and administrative experience, (b) current knowledge and practices of smart schools, and (c) were key decision makers involved in developing policy and procedures. Data were collected through in-depth interviews in the informal, interactive process of transcendental phenomenological research using open-ended questions and dialogue (Moustakas, 1994). The evidence was collected from structured, recorded interviews with selected administrators from schools. Interview questions were used to generate original naïve descriptions obtained through open-ended questions and dialogue to explore administrative leaders' experiences. Methodologists support that no more than 15 participants may be used to reach thematic saturation for a qualitative study

and that extended interviews with up to seven people are sufficient for a qualitative study if data saturation is reached (Mason, 2010).

The data analysis method used in this research study was Moustakas' (1994) modification of the Van Kaam method for analyzing phenomenological data. Data analysis was conducted manually without any particular computer software. Linking the data to the findings was accomplished by adhering to the purpose of the study to explore further and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. According to Moustakas (1994), phenomenological data analysis follows a systematic and rigorous procedure. First, a researcher depicts their experiences with the phenomenon (epoche). Second, noteworthy statements in the database from participants are acknowledged, and these statements are clustered into meaning units and themes. Finally, a researcher synthesizes the themes into an explanation of the experiences of the individuals (textual and structural descriptions) and then constructs a composite description of the meanings and the essences of the experience (Moustakas, 1994).

Definitions

Administrative leaders: Skilled professionals who influence teachers and students through an innovative pedagogical approach to integrating ICT platforms and best practices in primary schools (Avidov-Ungar & Shamir-Inbal, 2017).

Best practices: Methods or techniques that administrative leaders use to optimize programs, policies, or operations in the classroom (Kerzner, 2015).

Capacity building: The systematic planning by leaders to manage resources, personnel, and infrastructures to achieve a specific goal (Bryson, 2018).

Collaborative learning: A process of individualizing instructions based on core components of teamwork, knowledge sharing, and a shared vision to maximize learning in the classroom (Kozlov & Grobe, 2016).

Curriculum management: The process of restructuring, realigning, and redesigning an interactive curriculum to assist students in obtaining a higher level of academic achievement (Glatthorn et al., 2018).

Decision making: The process of applying rational thought by leaders who have acquired intuitive experiences and technical skills to guide management teams in organizations in a strategic direction (Calabretta et al., 2017).

Digital era: A specific historical timeframe that denotes the transformation from the industrialized era to the information age in the 21st century (Gallardo-Echenique et al., 2015).

Flipped classrooms: This educational model uses the teacher as the facilitators to implement a self-directed learning strategy through prerecorded lectures, online curriculums, and home instructions (DeLozier & Rhodes, 2017).

ICT platforms: Digital technologies that use hardware, software, or the internet to transmit data through various computer devices (Blau & Shamir-Inbal, 2017).

Knowledge sharing: A collaborative learning process that focuses on the systematic compiling, distributing, and storing of data to sustain an organization's operations (Tesarrita et al., 2017).

Paradigm shift: In educational technology, this refers to a shift from traditional dissemination of information to exploring new interactive learning practices (Earle, 2002; Zhao, 2015).

Pedagogical leadership: Transmitting knowledge and skills through integrating technology in an interactive environment (Quendler & Lamb, 2016).

Shared leadership: An interactive group process involving joint decision making and collaborative learning geared toward strengthening self-efficacy in students (Hauge, 2016).

Smart schools: Schools whose objectives are geared toward enhancing students' digital learning through ICT in an interactive environment (Canada et al., 2014; Elstad et al., 2016).

Student centered: A learning process that focuses on individualizing instruction for students by integrating ICT platforms into digital curriculums and best practices in the classroom (Marshall et al., 2017).

System integration: Any software or data analysis framework that uses the technological tools of ICT platforms to improve the decision making process that includes such data sources as photos, documents, and records (Firoozi & Jokar, 2017).

Teacher focus: A pedagogical practice that emphasizes the expertise and knowledge of teachers to disseminate useful information to students (Wolff et al., 2016)

Traditional learning approach: An approach that emphasizes the teacher as the facilitator using rote learning in lectures, books, videos, and other instructional activities (Zhang et al., 2016a).

Assumptions

The primary aim of this phenomenological study was focused on exploring and discovering the lived experiences of administrative leaders with successful integration of ICT platforms and best practices in K-12 smart schools. Administrative leaders must challenge teachers individually and professionally to ensure students are engaged and enriched by ICT platforms (Sincar, 2013). Thus, I assumed that administrative leaders interviewed in this study played a critical role in influencing the technical training and maintaining the professional development of teachers to implement ICT platforms in the classrooms (see Hussin & Al Abri, 2015).

Another assumption involves soliciting an adequate number of participants for the study. I requested the participation of 10–15 administrative leaders who are decision makers that had 2 or more years of experience managing ICT platforms. The data collection presented unique challenges due to the COVID-19 pandemic; I recruited seven participants. The minimum number of interviews conducted for a phenomenological study is five participants, and I continued past this number until I reached data saturation, with similar data noted from Participants 5, 6, and 7 (Schram, 2006). I used semi structured questions that formed the basis of the interview process until a saturation point was reached. However, there are no established guidelines or preset agreements to determine when reaching a saturation point in the study (Nelson, 2017). As a result, the guidelines are used when a researcher has exhausted all means of soliciting new information or finding additional participants for a study (Fusch & Ness, 2015).

The third assumption was focused on self-reporting data from interviews and member checking based on the validity of participants' answers. I relied on each participant's honest, open, and sincere responses regarding their attitudes toward ICT platforms. The qualitative responses were triangulated based on previous researchers' qualitative research methods (Wilson, 2014). This comprehensive approach, through triangulation, can provide a succinct view when assessing a phenomenon from many different perspectives (Joslin & Muller, 2016).

Scope and Delimitations

The research involved collecting data from smart schools located throughout the country. These smart schools embody the best representation because of the pandemic that occurred in 2020. The smart schools represent the most experienced and exemplary administrative leaders using ICT platforms in smart schools throughout the country. The smart schools employ administrative leaders who are IT directors, principals, vice principals, and school coordinators. These administrative leaders are the key decision makers who hold a leadership position and have 2–5 years of experience.

In addition, this group of seven participants (e.g., directors, principals, IT directors, etc.) included those administrative leaders who either develop or implement policy. Data collection was concentrated on summarizing data, clarifying issues, and collecting pertinent data through semi structured interviews conducted via Skype or phone due to the pandemic (Bradbury-Jones et al., 2009). I was responsible for discussing protocols, reviewing consent forms, and securing the venue for the focus group. Finally, I

maintained a balance between being a thorough interviewer and an objective moderator to coordinate multiple threads of discussions (Tondeur et al., 2017).

Limitations

The study's scope was limited to emphasize securing data from a small group of administrative leaders. In particular, the data collection was focused on administrative leaders from several smart schools around the country. Although the total number of administrative leaders may be small, the smart schools chosen represented exemplary work around ICT integration and implementing best practices. I strived to interview as many administrative leaders as possible who were the primary decision makers in the designated location until my sample reached data saturation. Another limitation was the reliability or self-reporting of the administrative leaders in terms of responding accurately and openly. However, I triangulated information from the interview questions, member checking, and a personal journal to ensure validity of the research. Finally, I used open-ended questions, offsetting biases from the interview subjects and the focus group participants.

Significance

Administrative leaders seek to provide the best educational experiences for students and ensure that teachers have the latest technological tools in the classroom (Ross, 2020). Administrative leaders are responsible for introducing innovative curriculums and establishing a model for best practices (Price, 2015). Administrative leaders are responsible for introducing innovative curriculums and restructuring modern classrooms. Administrative leaders must convey to teachers the importance of integrating

ICT platforms and encourage them to use computer technology efficiently (Gonzales, 2020).

Administrative leaders have to be actively involved in motivating teachers, engaging students, and implementing ICT platforms as part of the core learning process (MacLeod et al., 2018). The ICT platforms can be used to motivate teachers, engage students, and manage resources. Even though administrative leaders have integrated ICT platforms into classroom instructions, they were still limiting the use of ICT platforms in the form of word processing, proficiency tests, or routine internet searches. This inefficient use of ICT platforms has created a gap in students' learning experiences and implementing best practices. Administrative leaders recognize that ICT platforms must be seen from refining the classroom instructions, improving decision making, and maximizing best practices (Raman & Shariff, 2017).

Understanding the role of administrative leaders is vital to the decision-making process because it (a) allows leaders to incorporate vital knowledge and skills into the organization and (b) provides the administrative leaders with the opportunity to reevaluate the management practices and organizational structures. For administrative leaders, the decision-making process involves communicating the goals and expectations to subordinates to break down objectives into manageable tasks (Burke et al., 2017; Mustafa, 2015). The influence of administrative leaders impacts learning outcomes and is the catalyst for educational reform and social change (Fairman & Mackenzie, 2015; Ming et al., 2010).

Significance to Practice

Today, personal computers play a critical role in classroom management and the social cognitive development of elementary school children. Administrative leaders influence teachers' professional development and students' self-regulated learning in ICT platforms (Roth & Price, 2017). This study is significant to informing administrative leaders about developing and implementing effective policies or programs of ICT platforms in smart schools. Therefore, ICT platforms have reshaped the classroom and transformed learning organizations (Chi et al., 2014).

Undoubtedly, ICT platforms have transformed learning organizations by influencing the professional development of teachers and enhancing students' social cognitive development. Hence, administrative leaders have been rethinking and restructuring the traditional forms of disseminating information to elementary students. For example, the traditional form of disseminating information through books, lectures, and videos has provided limited opportunities for students to be creative or allowed the teachers to become flexible in implementing best practices (Ritter et al., 2018). In contrast, smart schools focus on an interactive approach that allows students to design individualized learning programs and encourage them to learn at their own pace. Thus, administrative leaders adopt new curriculum designs and embrace innovative teaching methods to integrate ICT platforms in smart schools.

This interactive approach to innovative school learning empowers students and provides them the tools to learn more efficiently in the classroom (Dabbagh et al., 2015). Administrative leaders provide the tools to help students identify goals and create the

content to support interactive learning in smart schools. As a result, administrative leaders emphasize the interactive approach to smart schools based on two key factors: (a) assisting students in creating and organizing their content and (b) leveraging best practices in classrooms. Thus, the smart school interactive approach to disseminating information fosters the flow of new ideas and the exploration of best practices (McWilliam, 2016).

Significance to Theory

The concepts of building digital capacity in smart schools and ICT platform integration in smart schools provided the conceptual framework of the study, and the study is theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). This study is significant to theory as its purpose is to extend knowledge within its conceptual framework and theoretical foundations. Administrative leaders view the capacity-building process as integrating digital technology with best practices to maximize efficiency (Zhu et al., 2016). In particular, administrative leaders use their skills and cultivate collaborative learning organizations (Fullan, 2010a; Garcia-Valcarcel, & Mena, 2016). As a result, administrative leaders have demonstrated that capacity building is essential in spearheading knowledge sharing, streamlining operations, and integrating digital technology to leverage resources. Capacity building is about administrative leaders aligning technology integration and best practices into a systematic process to sustain the organization's long-term growth (Blau & Shamir-Inbal, 2017).

Social cognitive theory can provide insight into administrative leaders' beliefs regarding the systematic process of integrating ICT platforms and the implementation of best practices (Bandura, 1993). By exploring administrative leaders' beliefs and attitudes, a researcher can determine the organization's overall vision or evaluate the teachers' actions and practices within the classroom. (Cordella & Tempini, 2015). For example, the social cognitive theory allows teachers to rethink lesson plans or reframe a math problem by having students use a computer tablet rather than write on paper. The importance of capacity building involves administrative leaders cultivating a climate of innovation through a systematic process of empowering teachers and students (Blau & Shamir-Inbal, 2017).

Systems theory allows social scientists to explain complex and dynamic organizations (Hayes, 2018; Whitchurch & Constantine, 2009). Furthermore, systems theory subscribes to the idea that organizational structure and operations are not linear. Instead, organizational structures result from interrelated components working toward a common objective. The primary goal of systems theory is to integrate the knowledge and information into a workable framework to find realistic solutions (Uhl-Bien & Arena, 2017). Thus, systems theory strives to improve the organizational structures and management practices and enhance the leader's role in developing creative learning strategies for modern organizations (Hayes, 2018).

Significance to Social Change

As administrative leaders attempt to cultivate a climate of creativity, ICT platforms provide a foundation for innovation and social change (Mustafa, 2015). Over

the last decade, administrative leaders have seen immense growth in the use of digital technology in elementary schools. Administrative leaders have invested time and resources in integrating ICT platforms in classrooms throughout the United States. These ICT platforms are used to improve students' learning experiences and create an alternative to the traditional mode of learning (Bralic & Divjak, 2018).

This study is significant to driving positive social change by informing administrative leaders on how effective ICT platforms can allow students to use innovative applications and learn new computer skills in a real-time setting. Furthermore, administrative leaders can use ICT platforms to incorporate more digital devices such as laptops, iPads, and mobile phones in smart schools (Chee et al., 2017; Gjelaj, 2013). For instance, students in smart schools at a young age learn to conduct web searches, design mini lessons, and learn foreign languages while using ICT platforms (Fu & Hwang, 2018). Thus, using ICT platforms in smart schools constitutes an improvement in students' learning skills by transforming the modern digital classroom.

Summary

ICT platforms are the cornerstone of the educational reform movement and the rapid technological growth in elementary schools (Dale, & Phillips, 2011; Hauge, 2016; Ming et al., 2010). Administrative leaders recognize that ICT platforms must address students' pedagogical and informational needs to compete in the 21st century. Recently, several school districts in the state of Texas have been attempting to integrate ICT platforms and implement best practices in K–12 programs (Collins & Halverson, 2018; Cook, 2020; Daniel & Bizar, 2005). Thus, the role of the administrative leaders has

undergone a paradigm shift from managing resources to facilitating the integration of ICT platforms and best practices.

Administrative leaders face the challenge of reaping the benefits of ICT platforms and simultaneously addressing their outdated beliefs and outmoded operational systems regarding integrating ICT platforms (Carver, 2016; Håkansson Lindqvist, 2019). Thus, a gap remains in the literature regarding administrative leaders' outmoded beliefs on implementing best practices efficiently into ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b). The specific management problem is that little is known about the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K–12 smart schools (Kormos, 2021; Militello et al., 2021).

I used the qualitative research design of transcendental phenomenology to collect and analyze data to answer the central research questions and meet the purpose of the study, which was to explore the lived experiences of a phenomenon (Moustakas, 1994). Qualitative phenomenological methodologies may be transcendental, with the research goal of identifying and reporting the lived experiences of participants of a phenomenon (Moustakas, 1994). Based on the concept of epoché, the elimination of a researcher's experiences and opinions about a phenomenon (van Manen, 2016), I used a transcendental phenomenological approach to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K–12 smart schools.

Administrative leaders have shown an increased interest in using ICT platforms to enhance the learning experience of elementary children (Lawrence & Tar, 2018).

Administrative leaders face a new challenge of increasing their knowledge and training (Hew & Brush, 2007; Wang et al., 2014b). The conceptual framework allows me to acquire a deeper understanding of the capacity building, social cognitive, and systems theories applied to understand the lived experiences of the participants recruited for the study

In Chapter 2, I examine the significant themes and theories associated with the literature review regarding integrating ICT platforms and best practices in K–12 programs. This chapter will include discussion of the role of administrative leaders, knowledge sharing, collaborative learning, and innovative strategies in smart schools. In particular, I will examine administrative leaders' beliefs from both a historical perspective and a critical review of pedagogical practices. Finally, the literature review will include the basis for analyzing and comparing the barriers, strategies, curriculums, and other issues surrounding the integration of ICT platforms.

Chapter 2: Literature Review

Introduction

Administrative leaders have not achieved the learning outcomes or the efficient use of ICT platforms by addressing the needs of K–12 programs (Ryoo et al., 2021). Moreover, administrative leaders have been using outdated belief systems and operational methods concerning integrating ICT platforms (Carver, 2016; Polly et al., 2021b). Thus, there remains a gap in the literature regarding administrative leaders' beliefs regarding implementing best practices in ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b).

The specific management problem is that little is known about the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools (Kormos, 2021; Militello et al., 2021). The purpose of this qualitative, transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. More research is needed to explore the experiences of administrative leaders who have used collaborative learning, shared resources, and professional development to improve digital learning in smart schools (Sun et al., 2018).

In Chapter 2, I provide the literature search strategy and the conceptual framework for the research. I present a synthesis of scholarly knowledge on administrative leaders' lived experiences integrating ICT platforms and best practices in

K-12 smart schools. Finally, I offer a critical analysis of the literature this study is grounded in.

Literature Search Strategy

The search parameters resulted in 14 books on management practices, 33 current journals on ICT integration, 28 peer-reviewed articles on leadership, 42 scholarly articles on innovative schools, and 220 related articles, for a total of 300 sources, ranging in publication dates from 2013 to 2021. Specifically, the journals focused on key terms such as *leadership*, *ICT integration*, and *management* found in *Educational Management Administration and Leadership*, *Education and Technology*, *Computers in Human Behavior*, *Journal of Leadership in Education*, and *Journal of Computers and Education*. Information found with searches for terminology that dealt with *collaboration*, *shared leadership*, and *effective team building* was accessed through *Teacher Development, School Leadership, Management, and Education*. Lastly, *leadership strategies*, *change agents*, and *smart schools* were found in *Information Technologies*, *Academy of Management Journal*, *Leadership Quarterly*, *MIS Quarterly*, and *Journal of Management*.

The literature review search involved accessing various databases through the Walden University Library system. Those databases and search engines included the following: Emerald Insight, ERIC, SAGE, EBSCO, ScienceDirect, ABI/INFO, ProQuest, and Google Scholar. The initial search focused on *leadership roles*, *management and technology*, *social cognitive theory*, *collaborative leaders*, *smart schools*, *system theory*, *educational leadership*, *ICT and integration*, *best practices*, *professional development*,

student-centered learning, managers and leaders, capacity building, and knowledge sharing. Table 1 presents the databases, keywords searches, current articles, books, and articles published over the past 5 years.

Table 1

Literature Search Strategy

Database	Keywords	Articles and books	Articles past 5 years
Walden	ICT	33	8
ERIC	Best practices	14	1
EBSCO	Leadership	28	4
ABI/INFO	Collaborative learning	14	2
ERIC	Barriers teaching	3	1
EMERALD	Integrating technology	18	2
Sage	Qualitative research	41	17
Sage Books	School leadership	11	2
Research gate	Smart schools	19	3
API/INFO	Global learning	4	1
ACM Digital	Pedagogy and ICT	9	3
EBSCO	Teacher beliefs	10	1
Walden	Capacity building	7	2
EBSCO	Knowledge sharing	5	2
ProQuest	Team building	10	1
ERIC	Student learning	14	0
Walden	Literature gap	7	1
PsycINFO	Cognitive theory	19	4
Science Direct	Systems theory	9	2
Business sources	Decision making	26	4
Total		301	61

Conceptual Framework

The concepts of building digital capacity in smart schools and ICT platforms integration in smart schools provided the conceptual framework for the study, and the study was theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura,

1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). Thus, the strength of these two concepts may frame the interface between administrative leaders' lived experiences and the successful integration of ICT platforms and best practices in smart schools.

More importantly, capacity building provides a systematic approach to disseminating information and a means for improving organizational infrastructures (Harris et al., 2013; Hondale, 1981; White, 2014). This systematic approach to capacity building is focused on examining the link between leaders' belief systems and policy making within large complex organizations (Wood & Bandura, 1989). In this regard, administrative leaders have become facilitators who influence organizational processes, structures, and policies. Thus, these three concepts form the contextual basis for exploring the link between administrative leaders' mindsets and optimizing the integration of ICT platforms.

To improve the quality of education and the demands of accountability in K-12 programs, administrative leaders must consider a systematic approach of integrating ICT (Uhl-Bien & Arena, 2017). This systems approach to digital technology is focused on whether capacity building and social cognitive theory affect integrating ICT platforms in primary schools. Bambrick-Santoyo (2018) also recognized that the perceptions of administrative leaders have led to strategies that contribute to the efficient use of ICT platforms and best practices.

Administrative leaders' beliefs can affect overall performance and influence an organization (Bandura, 1995). In other words, administrative leaders can motivate

teachers and inspire students to learn by fostering an innovative environment. Social cognitive theory emphasizes that administrative leaders must have self-confidence and self-discipline to withstand adversity in an organization (Wood & Bandura, 1989). Thus, administrative leaders must articulate the vision and communicate the mission to teachers by systematically engaging in capacity building in the organization.

The use of ICT has been beneficial in many different areas of education (Polly et al., 2021b). Specifically, the integration of ICT platforms has impacted curriculum design, online learning, and teacher professional development. Administrative leaders strongly advocate integrating ICT platforms by supporting collaborative learning in K-12 programs (Bawa, 2021; Håkansson Lindqvist, 2019). In education, administrative leaders form the cornerstone of coordinating personnel, curriculum management, and ICT integration to develop practical solutions to collaborative learning. As a result, administrative leaders have become the catalyst behind integrating ICT platforms in education and encouraging collaboration with teachers to improve classroom learning (Keane et al., 2020).

For this study, the conceptual framework was used to examine administrative leaders' methods for integrating ICT platforms from capacity building, social cognitive theory, and systems theory. Capacity building forms the basis for defining and investigating the administrative leaders' strategies for ICT platform integration. Further, these intersecting capacity-building components, social cognitive theory, and systems theory seek to understand how administrative leaders formulate a strategy for best practices (Backer, 2001; Bandura, 1995; Hargreaves & Fullan, 2012). Thus, capacity

building has the potential for administrative leaders to gain knowledge and understanding into ICT integration strategies and best practices by examining other overlapping components such as cognitive theory and systems theory.

Behavioral scientists contend that the conceptual framework is more than a repository of knowledge and information; it is an organic document representing research depth, complexity, and conciseness (Ravitch & Riggan, 2017). Each conceptual theory—capacity building, social cognitive theory, and systems theory—represents key elements of interpreting, investigating, and understanding social phenomena. In short, in this phenomenological study, I aimed to gain meaningful insights from the perspectives and lived experiences of the administrative leaders recruited in the sample on the study's central topic.

Literature Review

Capacity Building

The concept of capacity building emphasizes three main components: (a) leadership skills, (b) optimizing efficiency, and (c) organizational sustainability (Linnell, 2003). Capacity building is about leadership realigning structures, improving operations, and ensuring organizational sustainability. Linnell (2003) viewed capacity building as leaders achieving their goal by using team member skills and organizational resources to achieve the mission. The primary focus of capacity building is on those collaborative activities that support and enhance specific operations of an organization (Parfitt & Rose, 2020).

Capacity building is a process that involves many different interrelated functions, including planning strategies, operational activities, and leadership skills that ensure the efficiency of the organization (Backer, 2001). These interrelated functions or collaborative activities are designed to improve individual skills and enhance effectiveness (Stryk et al., 2011). In addition, capacity building emphasizes collective responsibility by developing learning organizations with skilled leaders by optimizing management functions (Geijsel et al., 2020). Capacity building refers to leaders taking responsibility for designing new programs and learning new skills to improve the overall organization. Capacity building must be a systemic, knowledgeable, and dynamic process that leads to long-term change. As a result, capacity building requires leaders to develop learning organizations that strive for collective responsibility to improve various systems and operations (Zhu et al., 2016).

Collective responsibility is the key to aligning goals and objectives with strategies for improving systems operations at every level of an organization (Watterston & Caldwell, 2011). For example, administrative leaders of elementary schools strive toward improving system operations by integrating effective policies and best practices. Integrating effective policies and best practices starts with the foundation of human resources, systems, infrastructure, and organizational structures (McKinsey & Company, 2001).

Educational institutions that adopt a strategy for incorporating capacity building into their culture improve operations efficiency and are useful in leveraging resources (Nguyen et al., 2015). Administrative leaders have been exploring the phenomenological

approaches regarding school districts and classrooms more efficiently. Merleau-Ponty (1978) examined the phenomenological approach from using human resources and the impact of the social environment. Merleau-Ponty's (1978) theory of social interaction accentuates a holistic approach to understanding a phenomenon from all perspectives. On the other hand, in Moustakas' (1994) phenomenological approach learning is described as a process of self-discovery and self-consciousness within organizational structures. In short, capacity building has promoted a culture of lifelong learning through the culmination of meaningful educational experiences (Parfitt & Rose, 2020).

The concept of capacity building can be used to explore different methods that administrative leaders use to implement best practices and to optimize managerial operations (Hondale, 1981). In one study, researchers found that administrative leaders viewed the capacity-building process in a broader sense by examining the impact of decision-making policy, human resource development, and managing organizational infrastructures (Garmston & Wellman, 2016). In this sense, administrative leaders examine the merits of each aspect of capacity building and best practices to determine the best course of action. Thus, administrative leaders embrace capacity building by aligning system infrastructures, sustaining best practices, and maximizing operations for growth (Local Victory Editorial Team, 2017).

Social Cognitive Theory

Social cognitive learning can be viewed as an expansion on the concepts of cognitive theory through individualized learning. According to Kirschner et al. (2018), cognitive theories are associated with individualized learning, acquiring knowledge, and

learning new tasks. At the same time, social cognitive theory is used to emphasize learning from various social experiences through the interaction of the surrounding environment (Bandura, 1995). Thus, administrative leaders recognize they are responsible for shaping social cognitive learning and cultivating an innovative classroom environment.

The adoption of social cognitive theory by administrative leaders implies establishing a collaborative learning environment and building capacity to ensure long-term growth (Militello et al., 2021). As a result, administrative leaders understood that capacity building is the driving force behind social cognitive learning and integrating ICT platforms into a cohesive social theory to improve organizational processes.

Administrative leaders have become facilitators that influence organizational processes, structures, and policies. Moreover, the belief system of administrative leaders differs from traditional managers. For instance, traditional managers focus on mission, performance, and wealth creation (Parfitt & Rose, 2020). In contrast, administrative leaders emphasize integrating ICT platforms, collaborating learning, and modernizing the classroom. In addition, administrative leaders have contributed to integrating ICT platforms by strengthening the link between their personal experiences and the organizational processes (Schrum & Levin, 2014).

Administrative leaders view ICT integration as part of their belief system connected with social cognitive theory (Zylka et al., 2015). Hence, the social cognitive theory focuses on collective self-efficacy and student achievement through positive interaction (Bandura, 1995). Social cognitive learning involves creating a flexible

environment that fosters independent learning and access to digital resources.

Administrative leaders consider the social cognitive theory an interactive learning process that strengthens the relationship between individualized learning and student achievement (Brezicha et al., 2015; Dale & Phillips, 2011). Social cognitive theory reinforces collective self-efficacy because of the direct and indirect effect on student achievement due to the administrative leaders monitoring classroom curriculums (Leithwood, 2017). As a result, collective efficacy can help teachers, students, and staff to improve performance. For example, the process of collective self-efficacy has provided nursing students with the capacity to evaluate patient services (Hassankhani et al., 2015).

Systems Theory and ICT Platforms

Undoubtedly, ICT platforms in the education field have undergone unprecedented and profound changes (Ross, 2020; Varonis, 2020). Thus, administrative leaders have been called upon to adopt a comprehensive strategy regarding the modernization of the classroom and contribute to the efficient use of ICT platforms (Keane et al., 2020). These profound changes are associated with the digital revolution stemming from laptop, tablet, and iPhone innovations. More importantly, ICT platforms have begun to change how teachers disseminate information and how students process data in K-12 programs. However, to understand the impact of digital technologies, ICT platforms must be viewed within a social system designed to manage resources, coordinate tasks, and evaluate operations (Jones, 2016).

ICT platforms emerge as a complex process between other organizational systems, including management practices, organizational structures, and integrated

technological systems in elementary schools. The challenge for administrative leaders is to move from the traditional hierarchical organization such as managing, controlling, and planning to learn organizations emphasizing creative, adaptive, and flexible decision-making processes (Gonzalez et al., 2017). Learning organizations have been defined as institutions willing to change the culture, values, and strategies to improve the overall process. Drawing on systems theory that views organizations as complex systems for the sole purpose of optimizing performance (von Bertalanffy, 2019)

Systems theory emerges to break down various components to facilitate organizational effectiveness and efficiency (Simon, 1960). Von Bertalanffy (2019) demonstrated that systems theory views complex organizations as interrelated parts characterized by mutual interactions. Von Bertalanffy (2019) defines open systems as exchanging information between aspects of an external environment. For example, a nursing unit using ICT platforms strives to interact with doctors and other staff to initiate a systematic plan for patient care (Fagerstrom et al., 2017). Administrative leaders tend to develop open systems that encourage activities to improve the overall organization. Closed systems primarily focused on establishing compliance, standards, and technical routines. Thus, educational organizations' bureaucratic structures and operational methods were not linear. Instead, the educational processes resulted from maintaining a balance between open and closed systems as part of the evolving nature of the organization (Emery (2014).

More importantly, administrative leaders view systems theory from tacit knowledge and social interactions. In other words, tacit knowledge involves the

accumulated information of administrative leaders geared towards improving the organization's overall effectiveness (Geijssels et al., 2020; Ryoo et al., 2021). For example, marketing plans are geared towards a specific segment or group to sell a product or service. Therefore, companies like Nike, Microsoft, and Sony seek to build strategic alliances to develop a global marketing plan (Kuang-Jung et al., 2015). For example, multi-national companies have developed strategic alliances with rental cars, airlines, athletic shoes, clothing lines, computer companies, and music. As a result, those administrative leaders embrace new strategies that require a new system of thinking in a competitive marketplace (Dyer et al., 2020).

Understanding how administrative leaders adapt to changing environments is critical for implementing a systems approach to organizational change (Avidov-Ungar & Shamir-Inbal, 2017). Therefore, administrative leaders have embraced a system approach to organizational structures and operational policies. This systems approach, by administrative leaders, represents a paradigm shift away from traditional organizational development methods to more innovative methods of delivering effective systems (Shepherd & Taylor, 2019). Thus, ICT platforms are more than technological innovations and entrepreneurial in a performance-driven culture that has shaped collective efficacy and capacity building (Tondeur et al., 2017; Zhu et al., 2016).

For administrative leaders, capacity building must establish a solid cultural foundation and build a reliable support system for the ICT platforms (Dacre, 2017). Hence, capacity building, social cognitive theory, and system theory perspectives were chosen to explore how the beliefs and perceptions of administrative leaders influenced

the integration of ICT platforms. Each of these conceptual perspectives (e.g., social cognitive theory, capacity building, and system theory) establishes a basis to explore the mindset of administrative leaders through a shared vision, knowledge-sharing, and collaborative learning in smart schools.

ICT Platforms to Improve the Classroom

A study on policy-making revealed that administrative leaders' integration of ICT platforms did not always lead to educational reforms or improved organizational efficiency (Apple, 2008). Over the last decade, the term administrative leader or the pedagogical leader has become interchangeable within the educational field (Valli et al., 2018). Recently, the term administrative leaders have emerged to describe the characteristics and responsibilities of principals, directors, and coordinators for K-12 programs (Christen et al., 2018). Thus, the ICT platforms have emerged as an effective means to engage students and improve teaching in the classroom.

Administrative leaders are exploring innovative ways to incorporate self-efficacy and social cognitive theory into diverse learning environments. Today, administrative leaders can no longer focus on just managing the resources, but they must become change agents that can effectively design innovative programs and stimulate learning in an interactive environment (Avidov-Ungar & Shamir-Inbal, 2017). Administrative leaders must address the immediate needs of teachers and promote the long-term learning of students (Marsh & Farrell, 2015). Therefore, administrative leaders must demonstrate the capacity to incorporate self-efficacy and cognitive learning strategies into their beliefs and practices (Ronghuai & Xiaolin, 2017).

In addressing the gap in ICT integration and implementing the best practices, administrative leaders have made a significant effort in incorporating digital technology in K-12 programs. However, the limited computer resources, inadequate teacher training, and lack of administrative leaders' vision have contributed to the inadequate integration of ICT platforms in K-12 programs (Gillespie, 2014; Ni et al., 2019). Furthermore, administrative leaders attempted to develop strategies to address teachers' competencies and student deficiencies by integrating ICT platforms in smart schools (Fullan & Langworthy, 2014). Smart schools provide the framework to (a) reduce the digital gap between deficiencies in student learning and (b) the need to increase efficiency in computer usage in K-12 programs.

Lewis (2014) and Hwang (2014) assert that ICT platforms could increase efficiency and facilitate best classroom practices. In this regard, administrative leaders were willing to rethink their strategies to address the gap between elementary students' experiences inside and outside the classroom (Wang et al., 2014b). Reasons for the failure to promote efficient use of ICT platforms range from poor decision-making, inadequate professional development, and lack of resources (Mundy & Kupczynski, 2013). Nevertheless, the integration of ICT platforms has provided a valuable tool for bridging the gap between teachers' computer usage, students' self-efficacy, and optimizing efficiency in the classroom.

Smart schools provide a vehicle for administrative leaders to critically address this gap of efficiently integrating ICT platforms and establishing best practices (Voogt et al., 2017). More importantly, smart schools require technical training for teachers and

adequate computer resources for students (Roth & Price, 2017). Hence, ICT platforms can encourage students to develop critical thinking and communication skills in an interactive environment. Administrative leaders must create a foundation for reforming educational institutions and building the best practices' implementation capacity (Watterston & Caldwell, 2011). Thus, smart schools became a crucial component in overcoming barriers to integrating ICT platforms and improving the quality of education for students in primary schools (Polly et al., 2021a).

Administrative leaders must overcome various barriers to ICT integration, including teacher resistance, lack of resources, and poor planning in smart schools (Hwang, 2014; Lewis, 2016; Nikolopoulou & Gialamas, 2015). Administrative leaders have responded to integrating ICT platforms by exploring collaborative learning and self-efficacy strategies in smart schools). Thus, administrative leaders have taken steps from instituting innovative curriculums to developing interactive programs towards integrating ICT platforms by improving the effectiveness in K-12 programs (Price, 2015). The integration of ICT platforms can transform the classroom into a model for implementing the best practices. However, these investments have not resulted in the effective use of ICT resources or best practices in the classroom (Alfaki & Khamis, 2018).

The Role of Administrative Leaders in Implementing ICT

Administrative leaders recognize that learning environments are continually changing. As a result, administrative leaders must move away from the idea of just transmitting information to promoting interactive learning through innovative pedagogical leadership (McWilliam, 2016). Pedagogical leadership involves transmitting

pertinent knowledge and valuable skills in a fast-paced environment (Quendler & Lamb, 2016). More importantly, pedagogical leadership is part of a systems approach that includes capacity building and social cognitive learning. Thus, pedagogical leadership involves a clear vision, a belief system, and disseminating knowledge from the teacher to the student (Collinson & Tourish, 2015). Although the role of pedagogical leaders is expanding due to the rapid growth of ICT platforms, the term administrative leaders are placing a greater emphasis on promoting self-efficacy and integrating ICT platforms (Christen et al., 2018).

Today, administrative leaders faced many challenges concerning integrating ICT into the school curriculum (Varonis, 2020). Social scientists noted two significant challenges in addressing the gap regarding the efficient use of ICT platforms, which leaders faced, such as lack of teachers and administrative leaders' support regarding ICT integration in the classroom (Lewis, 2016; Szeto & Cheng, 2018).

Administrative leaders are beginning to recognize the benefits of using ICT platforms effectively and improving classroom learning for students (Raman & Shariff, 2017). However, the two main obstacles to ICT integration focused on bureaucratic delays in supplying equipment and teachers' resistance to technology integration (Sincar, 2013). Thus, administrative leaders must consider bureaucratic delays and the lack of teachers' motivation to integrate ICT platforms and best practices. However, administrative leaders are responsible for developing cohesive leadership within the organization.

Undoubtedly, leadership provides the catalyst to improve student learning and motivate teachers to use ICT platforms (Gonzales, 2020). However, administrative leaders face the challenge of communicating the vision of technology integration and simultaneously achieving the organization's goals. Thus, leadership in elementary schools served three purposes (a) it is a means of collaboration and shared responsibility, (b) it leveraged leadership skills and resources, and (c) it communicated the vision and commitment to learning ICT platforms (Sergiovanni, 2015).

Administrative leaders understand the importance of ongoing learning and the crucial need to implement the best practices in the modern classroom (Shepherd & Taylor, 2019). Nevertheless, administrative leaders have focused too much attention on new computers and software rather than on the effective use of ICT platforms (Lewis, 2014). The challenges administrative leaders faced focused on maintaining a balance between fostering an innovative culture and encouraging teachers to use ICT platforms efficiently. As a result, administrative leaders have focused on short-term gains (new computers and software) rather than long-term growth based on a culture of innovation and sustainability (Godfrey, 2016).

Recently, administrative leaders have undergone a paradigm shift concerning the proactive role of leaders and the integration of ICT platforms (Bawa, 2021)). This paradigm shift aims to integrate ICT platforms, by administrative leaders must consider the learning needs of students to compete in a 21st-century learning environment. Thus, the paradigm shift is a significant step towards addressing the gap between the

administrative leaders' perceptions and their pedagogical practices towards integrating ICT platforms (Marshall et al., 2017).

Changing Role of Leaders: Integrating ICT Into Smart Schools

Administrative leaders are vital in inspiring students and motivating teachers to use ICT in the classroom (Dexter et al., 2021). In particular, the administrative leaders were competent instructors, but they were also adaptive at school management. A recent case study explored the effective use of ICT in an innovative school (Price, 2015). Inspired by the Intel initiatives, this model examines the various methods that administrative leaders use through visionary leadership, innovative curriculum, and professional development to understand the effectiveness of ICT integration. The integration of ICT platforms has provided critical components for individualized learning and transforming the interactive K-12 classroom in smart schools. Thus, ICT platforms formed the basis for technology integration by enhancing teacher training and accelerating student learning in smart schools (Duan et al., 2020).

However, administrative leaders who were reluctant to adopt an innovative leadership strategy, secure adequate resources, or implement innovative pedagogical practices had poor ICT integration (Price, 2015). Further, Price (2015) noted that this secondary data demonstrated that 38% of the teachers reported increased critical thinking and problem-solving skills, but only 60% of the principals had access to the internet, resulting in the unsuccessful ICT integration. As a result, the role of administrative leaders impacted both the teacher's pedagogical practices and the student-centered learning in elementary schools. For administrative leaders to have an impact on ICT

integration, they must (a) have a clear vision and specific plan for ICT integration and (b) support a paradigm shift from a traditional learning perspective to an innovative approach to ICT integration (Price, 2015). However, many administrative leaders have failed to grasp the complexity of integrating ICT platforms in K-12 programs. In the past, administrative leaders have taken a narrow approach to transforming traditional schools rather than a comprehensive view of educational reform (Williams, 2017).

Administrative leaders played a vital role in helping principals and teachers integrate the ICT platform and leverage resources. Sappington (2018) asserts that administrative leaders focus on learning new skills and gaining knowledge rather than helping teachers become better facilitators. Administrative leaders must strive for consensus on becoming better facilitators in developing the leadership and management of teachers based on exploring the smart school innovative practices. Thus, administrative leaders were the impetus behind using the ICT platforms in innovative schools and becoming adaptive in managing changing environments (Duan et al., 2020).

Administrative leaders provide valuable assistance to teachers and understand the responsibilities of cultivating positive learning environments for smart schools (Kormos, 2021). Moreover, smart schools were interactive and diverse learning environments conducive to ICT platforms (Hwang, 2014). Therefore, administrative leaders' roles focus on eliminating the barriers associated with the successful integration of ICT platforms. In the past, administrative leaders operated under the assumption that teachers' training and new equipment would solve the problems of ICT integration (Price, 2015). However, some teachers lack the motivation and skills necessary to implement student-

centered learning. As a result, administrative leaders having access to new equipment and adequate resources did not always translate to successful ICT integration (Hébert et al., 2021).

Administrative leaders view the integration of ICT platforms as valuable educational tools that impact technology and learning in the classroom (Funkhouser & Mouza, 2013; Ryan & Bagley, 2015). Raman and Shariff (2017) demonstrated that effective leadership could spearhead interactive learning, facilitate competencies in teachers, and optimize the integrating of ICT platforms to enhance student performance. Administrative leaders must provide teachers with a clear professional development plan or a framework for implementing ICT platforms (Voogt et al., 2017).

The key to teachers mastering ICT platforms was administrative support and training geared towards ICT integration in the classroom (Hébert et al., 2021). Administrative leaders were uniquely positioned to provide a framework for teachers to enhance their knowledge base and skillsets (Fu & Hwang, 2018). Within this framework, administrative leaders viewed teachers as acquiring the necessary skillsets to guide their actions to reach their goals. Even though the teachers were at the forefront of educational reform, the results have not always translated into successful ICT integration. Thus, the teachers who exhibit the necessary knowledge base and technical skills emphasized technology integration to improve student learning within the classroom (Polly et al., 2021b).

The accelerated pace of ICT platforms has forced administrative leaders to embrace beliefs supporting innovative strategies and strengthening teachers' best

practices (Shepherd & Taylor, 2019; Varonis, 2020). One of the strengths of integrating ICT platforms centered on individualized instruction, collaborative learning, and curriculum management in the classroom (Fu & Hwang, 2018; McGarr & McDonagh, 2014). Furthermore, administrative leaders play a crucial role in influencing teachers by shaping the school's culture and improving students' performance in the K-12 program. However, the weaknesses of ICT platforms integration focus on administrative leaders' poor decision-making skills and inadequate training for teachers (Hébert et al., 2021).

In this regard, administrative leaders faced the challenges of aligning people, allocating resources, and building operations into a cohesive network for change (Uhl-Bien & Arena, 2017). To manage long-term growth, administrative leaders must adapt to the rapid technological changes to facilitate ICT integration. By administrative leaders supporting the creativity and collaboration of teachers, the integration of ICT platforms will enhance students' learning and facilitate the best practices in the classrooms. The continual improvement of administrative leaders' decision-making skills and promoting the best practices in integrating ICT platforms must be supported by those administrative leaders ready to take up the challenge (Dexter et al., 2021; Håkansson Lindqvist, 2019) proactively.

Many administrative leaders rely on outmoded strategies, ignore teacher input, and lack the necessary skills to make an informed decision (Kupers, 2016; Maas & Hughes, 2020). Thus, administrative leaders who engage in poor decision-making fail to consider the importance of tacit knowledge and technical skills within various complex organizations (Smith, 2014). More importantly, this flawed decision-making process

failed to consider visionary leadership's importance in inspiring teachers and motivating students to use ICT platforms (Keane et al., 2020).

ICT Platforms: Leadership and Decision-Making Process

Simon (1960) states that educational leaders engaged in problem-solving activities such as organizing tasks, coordinating operations, and managing resources and decision-making behavior. In particular, visionary leadership and the decision-making process involved more than problem solving. It is based on knowledge, experience, and a philosophical view of the world to develop policies to guide the organization. In addition, this leadership and decision-making process involved acquiring a knowledge base and technical skills to develop an efficient organization. As a result, the visionary leadership and decision-making process have focused on self-development, conveying the mission, and managing technology (Kupers, 2016).

Over the last decade, administrative leaders have experienced accelerated organizational changes and new challenges in advancing ICT (Ifenthaler et al., 2020). Administrative leaders have examined the relationship between acquiring new technical and critical thinking skills to function in the digital era to address these challenges. Administrative leaders must adapt to new technological changes and incorporate critical thinking skills into their decision-making process (Van Wart, 2015). Many administrative leaders have strived to incorporate technical and critical thinking skills into their decision-making process because they need to develop new strategies and flexible structures for ongoing growth (Ryoo et al., 2021).

Administrative leaders use the decision-making process to reevaluate their critical thinking skills and assess their communication skills with subordinates (Wilcox et al., 2017). Administrative leaders must communicate with subordinates to convey the organization's mission, objectives, and vision. As a result, administrative leaders must communicate to their subordinates the organizational objectives and transform the decision-making tasks to achieve obtainable goals (Burke et al., 2017).

Decision-making refers to delegating tasks by leaders and managers to do different functions (Brunsson, 2017). The decision-making process focuses on learning to discern between leadership tasks and managerial activities (Williams, 2017). The decision-making process requires leaders and managers to take an interdisciplinary approach to integrate digital technology. The decision-making process was not a static or linear method but rather a dynamic process to determine the best course of action. In the past, administrative leaders focused on developing leadership skills that emphasized self-development to navigate ICT platforms (Selart, 2010). However, integrating ICT platforms required teachers who were effective communicators and skilled in adapting to changing environments (Militello et al., 2021).

Administrative leaders recognized the importance of developing a clear plan aligned with the decision-making process and the rapid growth of ICT platforms (Burke et al., 2017). One of the critical aspects of ICT planning focuses on developing a shared vision, teacher collaboration, and cultivating a culture to support integration in elementary schools. Thus, ICT planning was a process of creating interactive learning

environments, developing innovative programs, and implementing the best policies to ensure the goals and objectives of the organization (Leithwood, 2017)).

Administrative leaders viewed the ICT planning process as part of a comprehensive approach to outlining the learning objectives, professional training, and strategies for ICT integration (Ryoo et al., 2021). Increasingly, administrative leaders have focused on leveraging the resources to change the organizational culture and the teaching practices necessary to implement a cohesive plan (Norris, 2018). As a result, administrative leaders were concerned with developing a comprehensive plan, in conjunction with teachers, by building viable organizational structures and improving the decision-making process. Modern organizations need leaders with visionary foresight and managers with exceptional organizational skills (Norris, 2018).

Knowledge Sharing

The second series of topics included knowledge-sharing, student-centered learning, and curriculum management to examine the impact of ICT integration. In particular, I examine knowledge-sharing from how administrative leaders used the information to empower teachers and implement new curriculum designs. Knowledge-sharing was essential because it linked ICT platforms with best practices (Li et al., 2015). In addition, knowledge-sharing was a crucial factor in ICT integration because of the influence of student-centered learning in elementary schools (Larosiliere et al., 2016). More importantly, this section focused on administrative leaders' efforts to better understand knowledge-sharing, student-centered learning, and curriculum management regarding the successful integration of ICT platforms.

Today, the digital revolution has changed how administrative leaders share and disseminate information primarily through curriculum design. Information can be obtained through various sources and devices via the internet (Project Tomorrow, 2014). Most importantly, the flow of information was driven by the challenges facing administrative leaders and the rapid transition in K-12 programs. Thus, knowledge-sharing was a core factor of knowledge management that merges individuals, processes, and networks (Hendriks, 1999). Many administrative leaders recognized the importance of knowledge-sharing through the building of a learning network for their organizations (Gonzales & Mansel, 2017).

Knowledge-sharing was a component of knowledge management in examining the organization's socio-technical systems and ICT platforms (Hendriks, 1999; Li et al., 2015). Knowledge-sharing involves communicating information between two parties (Li et al., 2015). The administrative leader's study of knowledge-sharing is an effort to incorporate knowledge-sharing and student-centered learning into integrating ICT platforms in elementary schools. Within this context, knowledge-sharing provides administrative leaders with the capacity to transmit information or exchange data between two parties to facilitate change (Ifenthaler et al., 2020).

For instance, administrative leaders routinely exchange information on electronic databases via the internet, allowing teachers to facilitate the flow of information to students. This reciprocal relationship between administrative leaders and teachers allowed teachers to create value and social capital for the organization (Gonzales & Mansel, 2017). Knowledge-sharing enables administrative leaders to coordinate ICT

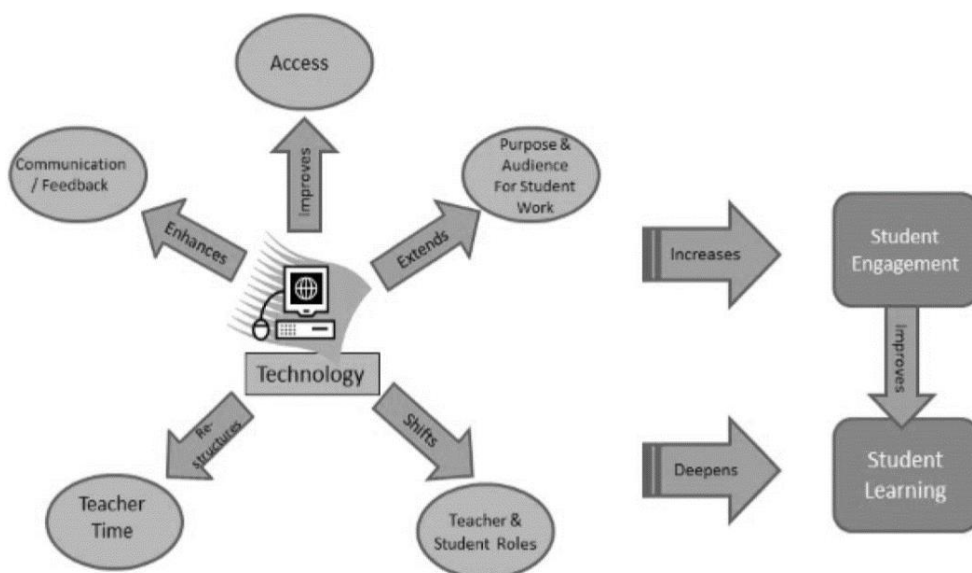
platforms with teachers to ensure effectiveness (Kasemap, 2016). The benefit of knowledge-sharing allows administrative leaders and teachers to lay the foundation to overcome structural and cultural barriers.

Administrative leaders use knowledge sharing to overcome structural and cultural barriers by empowering teachers and motivating students to integrate ICT platforms (Kasemap, 2016). As a result, administrative leaders created open systems to share knowledge to bridge the gap between motivating teachers and enhancing students within an innovative digital environment (Lane et al., 2014). Thus, administrative leaders set the tone for laying the foundation for overcoming barriers and obstacles to student-centered learning. More importantly, knowledge-sharing helped clarify a broader question about developing a student-centered strategy to effectively overcome barriers to integrating ICT platforms (Hébert et al., 2021; Polly et al., 2021b).

Knowledge-sharing and the integration of ICT platforms became critical components in removing social barriers (e.g., cultural, language, cognitive, etc.) by promoting student-centered learning. In this regard, administrative leaders not only set the cultural tone but also motivate teachers by promoting effective knowledge-sharing (Wiliam, 2016). As a result, the administrative leaders strive to cultivate a culture that emphasizes student-centered learning and knowledge-sharing through the integration of ICT platforms. Knowledge-sharing benefits involved administrative leaders developing strategies to foster student-centered learning to eliminate the barriers to integrating ICT platforms (Godfrey, 2016).

Teacher Focus Versus Student-Centered Approach to ICT

Over the last decade, ICT has become the cornerstone of educational reforms and digital strategies to improve learning in the classroom (Larosiliere et al., 2016). The integration of ICT has been instrumental in addressing barriers and enhancing the interaction between teachers and students (Lane et al., 2014). Administrative leaders' primary goals were to develop a framework around ICT integration to promote student-centered learning to improve classroom efficiency. Thus, administrative leaders could transmit their core values and beliefs into a vision for ICT integration and a strategy for implementing best practices. Student-centered learning provided administrative leaders with the tools to individualize instructions and access technological resources. For instance, students may access information from an iPad or laptop through a shared terminal or offline at home. In this regard, ICT platforms helped teachers provide students with various ways to manage their time and individualize learning. As a result, the strategy to integrate ICT platforms impacted student-centered learning and shaped teachers' competencies (Marshall et al., 2017).

Figure 1*Optimizing ICT Platforms and Student Learning*

Administrative leaders recognized that teachers were the key to integrating ICT platforms by empowering and encouraging students to develop their critical thinking skills (Lawrence & Tar, 2018). In addition, teachers become facilitators of student-centered learning, and they allow the students to have direct access to databases and ensure the dissemination of information (DeLozier & Rhodes, 2017). For example, a teacher may introduce math and science components in a story format (e.g., the introduction, body, lessons learned, etc.) on a PowerPoint slide presentation. This activity replaced the writing on the blackboard or taping a poster on the wall. Thus, the administrative leaders can create an innovative environment whereby teachers become facilitators to students and provide technical support (McKnight et al., 2016).

Access to ICT platforms has enabled administrative leaders to bridge the gap between pedagogical practices and student learning. The effective use of ICT platforms

allows teachers to increase student engagement and improve critical thinking skills (Waheed et al., 2018). For instance, student-centered learning enables students to initiate and coordinate the individualized learning process. Integrating ICT platforms promotes strengthening the relationship between the teachers' pedagogical practices and the student-centered learning process.

Administrative leaders focused on basic student skills and digital strategies to enhance learning (Lane et al., 2014). Student-centered learning underscores the need to develop critical thinking skills, computer competencies, and problem-solving skills to compete globally. Consequently, student-centered learning has become an essential aspect of ICT platforms integration that promotes digital curriculum management and individualized instructions (Marshall et al., 2017; Zylka et al., 2015). The integration of ICT platforms laid the foundation for new curriculum designs that contributed to the empowerment of teachers as well as provided new learning skills for students (Keane et al., 2016),

More importantly, administrative leaders began to rethink the traditional curriculum design because it did not address students' needs in an interactive environment (Collins & Halverson, 2018). The flipped classroom schools began replacing the traditional curriculum design with a student-centered approach that stressed innovative teaching practices and interactive learning (Brame, 2013; Prashar, 2015). As a result, administrative leaders begin to shift away from obsolete curriculum designs and invest in interactive flipped schools (Kim et al., 2014; Simpson & Richards, 2015). The

growth of flipped schools paved the way for a more diversified learning environment by integrating ICT platforms in smart schools (Ronghuai & Xiaolin, 2017).

By optimizing the ICT platforms between students and teachers, the process provides administrative leaders with the tools to impact long-term change. In other words, administrative leaders could empower teachers by understanding ICT platforms and using the new curriculum designs. As a result, the teachers became facilitators of ICT integration that required a paradigm shift away from teacher-centered to student-centered learning, allowing for the reorganization and restructuring of the modern classroom.

Curriculum Design: Comparing Traditional and Smart Schools

The new digital era has influenced ICT platforms and played a critical role in restructuring education (Shukor et al., 2014). This reorganizing and restructuring of education is necessary to accommodate the new teaching practices and curriculum designs (Ritter et al., 2018). The ICT platforms and curriculum designs have contributed to critical thinking by developing independent student learners. Thus, digital integration demonstrated a correlation between learning ICT platforms and improving students' academic performance (Xiang et al., 2018).

The ICT platforms can improve students' academic performance and transform the curriculum (Ritter et al., 2018). For example, traditional schools focused on books, videos, and lectures to transmit information to students. In contrast, smart schools introduced interactive learning through prerecorded lessons, online classes, and individualized instructions (Cheok & Wong, 2015; Salimi et al., 2017). The integration of ICT platforms was a significant factor in replacing the traditional classroom coursework

with a more interactive student-centered approach. These ICT platforms provided accessibility, flexibility, and reliability to enhance the best practices in smart schools.

Smart schools were dynamic environments composed of team coaching, multimedia formats, and self-learning strategies (Shukor et al., 2014). Smart schools have evolved from the flipped classroom model to an interactive learning module (Brame, 2013; Gough et al., 2017). In the past, the flipped classroom model facilitated one-to-one teaching, prerecorded lectures, and coursework outside the classroom (DeLozier, & Rhodes, 2017; Kostaris et al., 2017). The idea behind flipped schools enabled the student to learn at their own pace within a changing environment. As digital devices progress, smart schools become instrumental in linking rapidly-changing technology with knowledge-sharing and individualized learning modules for students.

Building on individualized learning, smart schools have introduced innovative teaching practices and new digital technologies in the classroom. Administrative leaders embraced goals in smart schools that were geared towards empowering teachers and engaging the students in an enriching learning environment (Zhu et al., 2016). This interactive learning approach demonstrated a significant change from the traditional lecture and textbook approach to innovative learning modules. The primary objectives of smart schools focus on transforming the teaching process and motivating students in a collaborative (Dexter et al., 2021; Gonzales, 2020).

The impact of ICT platforms in smart schools involves reorganizing the classroom environment and reshaping each student's individual learning experience (Ghonoodi & Salimi, 2011). Smart schools have been systematically replacing the

traditional approach to learning by implementing self-learning and interactive instructions (Price, 2015). Teachers disseminate information through books and lectures in the traditional approach to learning. This teacher-centered approach focused on transferring cognitive learning skills, standardized curriculums, and social skills in a classroom. However, the smart school approach enabled teachers to introduce interactive learning modules creatively. Therefore, the teacher becomes the facilitator of student-centered learning through iPads, laptops, tablets, and other digital devices (Lamb & Weiner, 2021).

Smart schools feature some characteristics (e.g., individualized learning, prerecorded lessons, online coursework, etc.) of the flipped classrooms (Cheok & Wong, 2015; Evan et al., 2017). Nevertheless, the primary focus of smart schools centered on creating an interactive environment for measurable and obtainable goals. For example, smart schools created an environment to improve interactive learning, provide instant feedback, and initiate collaborative teamwork (Hwang, 2014). Thus, the traditional teaching mode has been replaced with more adaptable, flexible, and reliable interactive smart schools. Below is a table that illustrates the different types of educational approaches and methods of delivery in both traditional and smart schools.

Table 2*Comparing Traditional and Smart School Learning Approaches*

Educational system	Traditional approach	Smart school approach
Learning goals and objectives	Disseminating knowledge	Self-learning
Delivery methods and modes	Books, overhead projectors	Laptops, computers, and tablets
Role of the student	Passive learning	Interactive learning
Curriculum development	Teacher centered	Student centered

Note. From Jackson (2017) “The role of a case study and phenomenology methodologies in assessing information computer technology in the classroom” (p. 32).

Smart schools have introduced new digital technologies and innovative teaching practices in the classroom. Administrative leaders embraced goals in smart schools geared towards empowering teachers and engaging the students in an enriching learning environment (Zhu et al., 2016). This interactive learning approach demonstrated a significant change from the traditional lecture and textbook approach to innovative learning. The primary objectives of smart schools focused on transforming the teaching process and motivating students in a collaborative environment. Thus, smart schools encourage students to become creative thinkers and independent learners based on their learning capabilities (Polly et al., 2021a).

Administrative leaders recognized the potential of integrating technology into smart school learning environments (Lamb & Weiner, 2021). Smart schools have emerged as the primary source of disseminating information, developing curricula, and enhancing students’ learning experiences. Administrative leaders influenced student

interaction and cultivated the role of teachers in the classroom (Harris, 2015). When administrative leaders consult with teachers, it opens a dialogue regarding knowledge-sharing, curriculum design, and ICT integration. As a result, smart schools were the primary vehicle to implement ICT integration in a student-centered environment (Kozlov & Grobe, 2016).

According to Sheppard and Brown (2014), administrative leaders have not effectively integrated knowledge-sharing and curriculum design into K-12 programs. In addition, administrative leaders have had problems integrating knowledge-sharing and curriculum design into ICT platforms due to inadequate training, lack of personal experiences, and changing software or hardware (Jones, 2016). Thus, the classroom transformation was an essential element in integrating ICT platforms and spearheading change (Machado & Chung, 2015).

Understanding the perceptions of administrative leaders is about incorporating the core values and belief systems into a succinct vision for integrating ICT platforms into smart schools (Shepherd & Taylor, 2019). For administrative leaders, integrating ICT platforms was key in embracing a core belief system that provided a foundation for shaping technology and cultivating a culture of innovation to eliminate educational barriers in elementary schools. Thus, administrative leaders' perceptions and beliefs were influential in moving teachers away from their traditional teaching methods to a more collaborative form of learning to address the complexity of the modern classroom (Balkar & Kalman, 2018).

Collaborative Learning

Administrative leaders have routinely left teachers out of the decision-making process regarding the collaborative learning process (Hargreaves & Ainscow, 2015). This lack of teacher input has resulted in poor academic performance and the underutilization of resources in secondary schools (Ahmed, 2018). To address this issue of collaborative learning in the classroom, administrative leaders examined the link between improving policy decisions and integrating ICT platforms (Kulikovskikh et al., 2017). As a result, administrative leaders recognize that collaborative learning requires effective communication with teachers and integrating ICT platforms into the decision-making process (Dexter et al., 2021).

Because administrative leaders frequently take a top-down approach to implementing policy-making or restructuring courses in the classroom. They have routinely ignored the input of teachers regarding collaborative learning or completely overlooked teachers' involvement in the decision-making process (Zhu et al., 2016). Administrative leaders and teachers were vital to the decision-making process because they promoted students' critical thinking and communication skills using ICT platforms. Thus, ICT platforms inspire collaborative learning by developing a framework where teachers and students can actively exchange information (Polly et al., 2021b).

In recent years, administrative leaders have recognized the potential of teachers and students' potential to work together collaboratively. Collaborative learning focuses on self-regulated learning and knowledge building between two groups (Laal, 2013). In other words, collaborative learning promotes the collaboration between teachers and

students for the sole purpose of completing tasks. For example, teachers can use collaborative learning to identify tasks, reflect on themes, and engage in practical solutions in the classroom (Hensley et al., 2016). Thus, collaborative learning enhances the teaching process and supports knowledge building in an interactive environment.

The collaborative learning process emphasized learning new tasks, engaging students, and enhancing communication skills through integrating ICT platforms (Kozlov & Grobe, 2016). However, administrative leaders should not confuse collaborative learning with students achieving higher academic outcomes. Instead, administrative leaders should focus on the collaborative learning process as a supplemental tool in conjunction with team-building. Thus, administrative leaders view the collaborative learning process to augment teachers' experiences and encourage team-building in the classroom (Kostaris et al., 2017).

Administrative leaders were concerned with implementing and augmenting collaborative learning in the classroom (Chinn & Clark, 2013). The process of augmenting involved a dialectical discussion through the interpretation and exchange of ideas aimed at specific solutions (Chinn & Clark, 2013; Lai, 2011). In the classroom, collaborative learning entailed creating study groups or working teams to disseminate information. This collaborative learning process is characterized by individualized instructions that maximize team-building and student learning (Bawa, 2021; Zainal & Zainuddin, 2020).

The ICT platforms are not the driving force behind learning; instead, they are the strategic practices that enhance the educational process (Price, 2015). In this sense,

teachers move away from the traditional teaching mode and embrace a collaborative learning and team-building approach to learning (Bahr, 2016). Furthermore, collaborative learning and team-building focus on shared leadership as a mechanism for developing students' social, cognitive, and communication skills (Hoch & Kozlowski, 2014). Finally, administrative leaders recognize that building effective teams through shared leadership is a dynamic process involving best practices to improve learning in the classroom (Keane et al., 2020).

Building Effective Teams Through Shared Leadership

Over the last decade, the growth of ICT has permeated every facet of education and society (Van Laar et al., 2017). Within this framework of educational reform, the administrative leaders have emphasized shared leadership in the form of exchanging information between various groups (Garcia-Valcarcel & Mena, 2016; Holt, 2017; Laal, 2013). These administrative leaders must enlist the commitment of teachers and staff to facilitate the shared leadership learning process by engaging students in self-efficacy. One of the most important aspects of integrating ICT was establishing a shared leadership system and building quality K-12 programs. In the past, the research focuses on team leadership and improving students' performance (Kostaris et al., 2017). However, there is a sparse reference to the steps that administrative leaders took to incorporate shared leadership or the mindset of teachers through curriculum design (Orr & Kukner, 2015).

Shared leadership is a process of knowledge building and self-regulated learning among groups (Hensley et al., 2016). The group dynamics shaped the shared leadership process and the level of activities within the group. However, this concept of shared

leadership does not address how teachers and students augment the group's exchange of information or ideas. The augmenting process involving the shared leadership process works best in conjunction with study groups or working teams through disseminating information (Chinn & Clark, 2013; Håkansson Lindqvist, 2019)

In recent years, shared leadership and team-building have emerged as critical components in integrating ICT classrooms (Hensley et al., 2016). However, there has been a limited study regarding the methods or practices to improve the quality of team-building (Bahr, 2016). For instance, collaborative learning is the basis for promoting ICT platforms' integration but has not emphasized the development of leadership skills or team-building practices (Price, 2015). Team-building can impact the shared leadership in a formal or informal setting that incorporates goal-setting, problem-solving, and effective communication in the classroom (Klein et al., 2009).

Administrative leaders emphasize the need to identify the criteria for developing quality teams by accessing roles and cultivating relationships through shared leadership (Carson et al., 2007). Shared leadership is a process of group dynamics based on reciprocal relationships, joint decision-making, and formal roles geared toward a common goal. Shared leadership is an interactive process that facilitates group clarity and organizational structure to enhance team effectiveness (Hoch & Kozlowski, 2014; Mintzberg, 1979). In other words, through an interactive process, shared leadership provides the mechanism to improve social cognitive learning, interpersonal communications, and joint decision-making in a group setting. Thus, shared leadership emphasizes building quality teams through an interactive process based on cohesion and

coordination of tasks to achieve a common goal (Dexter et al., 2021; Militello et al., 2021).

Administrative leaders begin to ascertain that shared leadership provided teachers and students with the opportunity to develop innovative classes (Zhou & Teo, 2017). Within this context, five significant themes emerge that highlight the impact of shared leadership and team-building. These five themes focused on (a) supporting the use of digital devices, (b) facilitating interactive learning, (c) enhancing curriculum and motivating students, (d) providing technical support, and (e) encouraging the development of teachers (Grant et al., 2015). Administrative leaders were concerned with integrating ICT platforms, but they also examined shared leadership and team-building methods that efficiently disseminated information in the classroom. Shared leadership augmented team effectiveness by creating meaningful experiences and systematically integrating tasks into the organizational structures (Binkhorst et al., 2018). Finally, shared leadership has improved the quality of team-building by leveraging resources, adopting the best practices, and applying the knowledge of each team member (Bambrick-Santoyo, 2018).

Shared leadership emphasizes implementing best practices and the need to expand the scope of learning organizations (Parfitt & Rose, 2020). Administrative leaders stress the importance of cultivating shared leadership through a collective identity and leveraging resources for the organization (Wang et al., 2014a). Furthermore, administrative leaders were guided by establishing clear organizational goals and technical support for teachers (Albion et al., 2015; Drescher et al., 2014; Kelly, 2015;

Senge et al., 2014). Then, shared leadership becomes an essential component of organizational efficiency by encouraging teachers to implement the best practices and learn new technical skills (Militello et al., 2021).

Integrating ICT Platforms and Accessing Best Practices

Over the last two decades, administrative leaders have focused primarily on the professional development of teachers and integrating ICT platforms into K-12 classrooms (Albion et al., 2015; Ihmeideh & Al-Maadadi, 2018; Moller, & Pankake, 2013). In addition, administrative leaders have viewed the integration of ICT platforms to expand curriculum designs, teach new skills to students, and support online educational programs (Zhang et al., 2016a). However, administrative leaders have established a limited number of guidelines for initiating the best practices in the classrooms (Kelly, 2015).

Best practices focus on the process of building self-efficacy and individualized learning for students by engaging in problem-solving tasks using ICT platforms. In this regard, best practices represent a comprehensive approach to integrating ICT platforms through individualized instruction based on interactive learning (Orlando, 2013).

Administrative leaders who were facilitators of ICT platforms integration understood that supporting interactive curriculums and innovative classes led to higher academic outcomes. As a result, the integration of ICT platforms has reshaped the experiences of students as well as enabled teachers to facilitate the best practices in the classroom (Harron & Hughes, 2018).

Administrative leaders have had a significant impact on the teachers using best practices by regularly addressing students' needs. Most importantly, administrative

leaders have set the tone for identifying priorities, allocating resources, and designing curriculum to facilitate the best practices (Hallinger, 2018). For example, administrative leaders instructed teachers to organize lesson plans around students' knowledge and their capacity to interact in small groups (Jemison, 2016). The framework for implementing the best practices in the classroom begins with executing long-term planning (Gillespie, 2014). This long-term planning consists of implementing the best practices through curriculum design, brainstorming, and individualized learning modules (Ramirez et al., 2017). As a result, administrative leaders have incorporated the planning of ICT platforms by maintaining continuity in curriculum design. In addition, administrative leaders are examining different curriculum techniques to motivate students, such as video recordings, support groups, and computer networks to enhance the learning process (Reis et al., 2018).

Over the last few years, administrative leaders have supported teachers who could interact and communicate with students to implement the best practices (Harron & Hughes, 2018). In addition, administrative leaders recognize the contributions of teachers who could shape, develop, and integrate ICT platforms in the classroom. For these reasons, administrative leaders focused on teachers who demonstrated technical skills and the ability to use decision-making skills to implement the best practices (Harron & Hughes, 2018; Szeto & Cheng, 2014).

Currently, teachers in smart schools view ICT as an investment in digital technology and a collaborative process to integrate the best practices into the classrooms (Harron & Hughes, 2018; Malubay & Daguplo, 2018; Orlando, 2013). For instance,

elementary students learned how to use editing software to make videos or use computing software to learn critical thinking and mathematics (Malubay & Daguplo, 2018). In addition, administrative leaders recognize that ICT platforms can be used as an effective tool and an efficient use of resources in a collaborative learning environment (Zielezinski & Darling-Hammond, 2018).

Also, using ICT platforms provides the basis for teachers to implement the best practices by enhancing each student's knowledge-sharing and problem-solving skills (Gillespie, 2014; Maina, 2006; Ramirez et al., 2017; Reis et al., 2018). Furthermore, by training teachers to use innovative strategies and implement the best practices, this collaborative learning process can transform the classroom and create lifelong learners. Finally, teachers can shape the curriculum, integrate ICT platforms, and implement the best practices to improve the quality of education (Hallinger, 2018; Jemison, 2016; Szeto and Cheng).

Strategies for Using ICT in the Classroom

In education, ICT platforms can improve efficiency by empowering teachers and embracing shared leadership (Lee & Nie, 2016; Redecker & Johannessen, 2013). Furthermore, administrative leaders sought consistency by using different pedagogical strategies to successfully facilitate learning and motivate teachers to implement ICT platforms in smart schools. Thus, administrative leaders can enhance the learning process in smart schools, whereby students build on their knowledge and personal experiences (Zaranis, 2017).

Administrative leaders are becoming proficient in addressing conflict, initiating change, and harnessing technology (Smith et al., 2016). In this regard, administrative leaders leveraged resources to invest in new technology and create sustained value for the organization (Yap et al., 2017). In addition, from a pedagogical perspective, the administrative leaders who integrated ICT platforms were instrumental in developing leadership roles for teachers through innovative and visionary programs (Willis et al., 2018).

Integrating ICT platforms into classroom instructions has allowed administrative leaders to enhance teachers' leadership roles and improve their shared decision-making in K-12 programs (Dexter et al., 2021). In particular, administrative leaders encouraged shared decision-making and influenced change in ICT platforms within the classroom (Fullan & Hargreaves, 2014). Although the ICT platforms have changed in the last decades, the pedagogical goals (creating a knowledge base and the infrastructure support) for technology integration have remained unchanged (Koh et al., 2015). Thus, these goals must include using ICT platforms as practical tools to overcome internal and external barriers that shape smart classrooms (Hébert et al., 2021; Kormos, 2021)

Overcoming the Barriers to ICT Integration

Despite administrative leaders' concerted effort to integrate ICT platforms in every facet of the educational curriculum, most teachers have focused mainly on word processing, routine tests, and homework assignments (Hughes & Read, 2018). In other words, many teachers have failed to use the ICT platforms to their fullest potential and transform the classrooms into a creative learning environment. In short, teachers must

become facilitators who can identify the complexities of cultural and structural barriers to address long-term solutions (Clark & Boyer, 2016).

Administrative leaders understood that the integration of ICT platforms involved a series of complex processes and detailed procedures (Thurling et al., 2015). Besides, the teacher's beliefs regarding ICT integration were hindered by cultural barriers such as bureaucratic structures, professional competencies, and school practices (Blau et al., 2018). Cultural barriers stem from the teacher's failure to adapt to the changing norms and values without a clear vision regarding ICT integration into the classroom.

Administrative leaders provide teachers with a clear professional development plan or a framework for effectively implementing ICT platforms (Voogt et al., 2017; Zepeda, 2014).

Administrative leaders were uniquely positioned to provide a framework for teachers to enhance their skillsets (Fu & Hwang, 2018). Administrative leaders viewed those skillsets as specific actions that guided subordinates to complete a task or reach a goal (Northouse, 2015). Hence, it was important for administrative leaders to empower subordinates and set realistic goals for teachers. In this regard, administrative leaders recognize that teachers must have the knowledge base and technical skills to overcome barriers to integrate ICT in schools effectively. Thus, the teachers who exhibited a thorough knowledge base and technical skills emphasized technological integration and overcoming organizational barriers (Polly et al., 2021b).

Administrative leaders recognize that the rethinking of long-term change, reshaping schools, and incorporating a shared vision with teachers are crucial factors in

overcoming structural barriers (Chen, 2013; Wise et al., 2016). In this regard, the administrative leaders recognized that teachers are critical to successfully integrating ICT platforms by developing innovative curriculums and motivating students to learn new software (Landy, 2015). Administrative leaders acknowledge that teachers who incorporated a shared vision and the best practices played a critical role in addressing cultural and structural barriers in educational reform (Gonzales, 2020).

The digital era requires administrative leaders to embrace new leadership skills and knowledge base to address significant challenges in implementing innovative curriculums in ICT environments (Bush, & Glover, 2014; Yusuf et al., 2019). For instance, an innovative curriculum may establish guidelines and clear priorities for implementing technology in primary schools. However, no administrative leader could have foreseen all of the obstacles (lack of resources) or failed attempts (no infrastructure support) to execute the implementation of ICT platforms (Raman & Shariff, 2017). Providing school resources is meaningless if administrative leaders do not encourage teachers to use innovative practices and embrace new ICT skills (Brenner & Brill, 2016; Januszewski & Molenda, 2013). In addition, administrative leaders recognize that the successful integration of ICT platforms is based on defining clear goals and providing long-term planning (Day et al., 2016).

Assessing the Impact of ICT Integration on Social Change

Over the last twenty years, ICT integration has changed the way teachers disseminate information to students and how administrative leaders conduct operations in school districts. In the 1980s, school districts and colleges began planning for the

systematic implementation of ICT platforms to improve the quality of classroom education (Reeves & Oh, 2017). As a result, phenomenological research studies emerged examining new methods and practices of ICT integration. For instance, Clark and Boyer's (2016) transcendental research examined ICT integration from the training of teachers and staff. Further, Yin's (2013) case study explored the impact of using ICT platforms to improve structures and guidelines in the classroom. In short, the phenomenological approach brings depth and breadth through investigating the human experience. More importantly, ICT platforms formed the foundation for innovative programs and strategic planning in education (Ahonen & Kinnunen, 2015). However, administrative leaders understood that innovative programs and strategic planning do not translate into teachers' competency levels and relevant skillsets (Clark & Boyer, 2016; Hauge, 2016). Thus, administrative leaders acknowledged the paradigm shift regarding the importance of teachers acquiring relevant skills, becoming technically proficient, and leveraging human resources (Hatlevik et al., 2015).

This new digital environment formed the basis for administrative leaders to use ICT platforms to disseminate information and knowledge-sharing to students in smart schools (Johri & Misra, 2017). In smart schools, administrative leaders could retrain teachers, reorganize classrooms, and rethink ICT platforms (Crick, 2017). Furthermore, administrative leaders recognized the usefulness of ICT platforms in refining teaching methods, improving decision-making, and implementing the best practices in smart schools (Raman & Shariff, 2017).

Administrative leaders understood that a radical structural and bureaucratic transformation was needed in public schools. Smart schools emerged exclusively to improve students' performance and effectively integrate ICT platforms into classroom activities (Friske et al., 1992; Johri & Misra, 2017). However, the fundamental goal of ICT platforms integration has been manifested by linking strategic decision-making with the best practices of digital technology. Thus, administrative leaders must train teachers to become facilitators of change and innovators of student learning within the smart school environments. Within this context, smart schools can promote individualized instruction, collaborative learning, and interactive classroom environments. Administrative leaders can use smart schools to establish creative and innovative classrooms to adapt to rapid digital change (Lamb & Weiner, 2021).

Summary and Conclusions

Over the last decade, administrative leaders have experienced unprecedented growth in the use of ICT and digital devices (Duan et al., 2020; Maas & Hughes, 2020). In addressing this phenomenal growth in ICT integration, the administrative leaders sought strategies to align beliefs and individualized learning with the transformation of K-12 classrooms (McKnight et al., 2016). Recently, administrative leaders across the country examined the need to effectively integrate ICT platforms by developing new policy initiatives and innovative strategies to expand the digital footprint in K-12 schools (Roth & Price, 2017). As a result, the role of leaders has shifted from managing resources to facilitating organizational change.

Recently, the debate between traditional and smart schools has intensified with new teaching practices such as video blogs, graphic novels, and small group discussions in the K-12 classrooms (Becker et al., 2016; Hitt & Tucker, 2016). For example, there was considerable disagreement over the idea of incorporating traditional curriculum including new software, professional workshops, and E-textbooks into existing ICT platforms (Bralic & Divjak, 2018; Jarrahi, & Sawyer, 2015). However, these educational reform methods have begun to bridge the gap between student learning and knowledge-sharing in real-time.

Over the years, ICT has become an integral part of educational reform, decision-making, and managerial decision-making. Administrative leaders have viewed ICT as a tool for incorporating knowledge-sharing, collaborative learning, and team-building into a coherent learning strategy (Koeslag-Kreunen et al., 2018). For example, administrative leaders used social media, LAN websites, and student mentors to provide classroom instructions and digital programs to K-12 students (Shelton, & Archambault, 2019). More importantly, principals, teachers, and students were encouraged to share knowledge and implement the best practices in learning organizations. Thus, administrative leaders could improve decision-making, facilitate collaborative learning, and encourage knowledge-sharing by establishing a culture of innovation (Keane et al., 2020).

However, there remains a gap between administrative leaders' perceptions and the implementation of best practices (Ryan & Bagley, 2015; Sincar, 2013; Voogt et al., 2017). In other words, administrative leaders lacked a comprehensive approach or strategy for integrating ICT platforms and implementing the best practices in K-12

programs. One of the issues facing principals, teachers, and the staff is how to use ICT platforms in smart schools efficiently. The idea of smart schools provides a framework for interactive and innovative learning that addresses some of the common challenges of integrating ICT platforms (Hwang, 2014; Jemison, 2016; Zaranis, 2017).

The purpose of this qualitative, transcendental phenomenological study is to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. Today, the modern classroom uses laptops, computers, and tablets to integrate ICT platforms. However, even though ICT platforms have increased in the modern classroom (Kurshan & Woolley-Wilson, 2016), there remains a gap in the administrative leaders' beliefs and students' self-efficacy (Carver, 2016). Thus, the research demonstrates the need to reorganize the elementary classroom by developing a new paradigm to address the gap in administrative leader's belief systems, decision-making, and knowledge-sharing skills (Beare et al., 2018; Godfrey, 2016; Larosiliere et al., 2016; Siddiq et al., 2017).

The vision of administrative leaders and the empowering of teachers were closely linked to transforming the school's culture and enhancing student learning (Dall'Alba, 2016). In this sense, the integration of ICT platforms can overcome barriers and obstacles to transform the K-12 classroom and the capacity to change the dynamics of student interactive learning. As a result, administrative leaders were intensifying their role beyond just formulating new policies and were becoming facilitators and purveyors of social change based on the needs of students in the 21st century (Ahmad, 2016; Schrum & Levin, 2013).

In Chapter 3, the research method for this qualitative, transcendental phenomenology study. I chose the transcendental phenomenology model as suggested by Moustakas (1994), as it aligns as a research method with a natural form of inquiry that will facilitate the discovery of participants' lived experiences. In addition, the procedures used for recruitment, participation, and data collection will be presented. Finally, the data analysis plan will be addressed, as well as issues of trustworthiness in the study and the ethical issues of research.

Chapter 3: Research Method

Introduction

The purpose of this qualitative transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders with successful integration of ICT platforms and best practices in K-12 smart schools. School administrative leaders recognize that ICT platforms have not kept pace with the skill sets of administrative leaders and teachers' best practices in the classrooms. In addition, administrative leaders are not achieving the learning outcomes or the efficient use of ICT platforms by addressing the needs of K-12 programs (Hébert et al., 2021; Ryoo et al., 2021).

Moreover, some administrative leaders are using outdated belief systems and operational methods concerning integrating ICT platforms and have failed to manage resources, implement best practices, and effectively integrate ICT platforms into K-12 programs (Ali et al., 2017; Gonzales, 2020). A gap remains in the literature regarding administrative leaders' outmoded beliefs regarding implementing best practices into ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b).

In this chapter, I provide detailed information on the research method and rationale for conducting a transcendental phenomenology study and the central research question guiding this empirical investigation. In Chapter 3, the discussion focuses on the research design, the rationale, the role of the researcher, the methodology, and the research question. In this chapter, I discuss the main components of the research study,

such as data collection, ethical considerations, participant selection, and data validity.

Also, I cover issues such as credibility, dependability, trustworthiness, and field testing.

Research Design and Rationale

Determining the appropriate methodology for this study was driven by the purpose of the study and the research question. Qualitative research is focused on comprehending how people interpret their lived experiences, how they construct those experiences, and how they define their experiences (Merriam & Grenier, 2019). The purpose of qualitative inquiry is to present in narrative form what identifies participants' lived experiences in their day-to-day lives and the meaning of those experiences (Merriam & Tisdell, 2015). This approach can provide the qualitative data needed to answer the central research question: What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?

The quantitative approach is used to find objective answers to the range and correlation or cause-and-effect issues under study (Harkiolakis, 2017). Objective numerical measurement and data analysis to establish the correlation between variables or causality were extraneous to the purpose of this research of the lived experiences of administrative leaders. Therefore, the quantitative method that applies to numerical analysis and data measurement was not appropriate for this study.

By examining various methodologies, I determined the best research approach for data collection, participant selection, and data analysis (Maxwell, 2005). I did not select the case study approach in this study because of the time and experience required to

conduct robust and detailed research bounded by time and setting (Yin, 2017). For instance, the case study method may involve a single or multiple case study identifying specific areas of change or transformative practices. A grounded theory requires objective results (Charmaz, 2006), and I was interested in reporting subjective lived experiences. According to Glaser and Strauss (1967), grounded theory research is focused on a creative approach to develop a theoretical premise. I did not select ethnography because it requires long-term observance of a cultural group. I did not select a narrative study because it involves gathering and analyzing data through storytelling (Tracy, 2019).

A transcendental phenomenological study is conducted to focus on discovery based on participants' lived experiences to extract meaningful data (Moustakas, 1994). I chose the qualitative research design of transcendental phenomenology to answer my research questions and meet the purpose of the study; I explored humans' lived experiences of a phenomenon (Moustakas, 1994). Based on the concept of epoché, the elimination of the researcher's experiences and opinions about a phenomenon (van Manen, 2016), I used a transcendental phenomenological approach to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. Moustakas (1990) recognized the challenge of capturing the essence of social phenomenon. The process of determining the essence of social phenomenon requires a researcher to extract meaningful dialogue or stories that shape the narratives. The research question sets the tone or formulates the contextual framework of a study to extract knowledge or information (Mason, 2017).

Heidegger (2008) argued that individuals acquire knowledge from participation and personal experiences. Kvale and Brinkmann (2009) wrote on the shift away from the positivist philosophy of the past half-century to a philosophical line of thought closer to humanities, the phenomenological logical description of consciousness, and the dialectical situation of human activity in social and historical contexts. Choosing the transcendental phenomenology research design to meet the prospect of my study aligns with research strategies followed by scholars of similar studies. For example, Smith (2014) conducted a phenomenology study on how the racial identities and lived experiences of Black male K-12 public and independent school leaders inform their professional lives and leadership.

The research question becomes the focal point of investigative research to solve a particular problem (Mason, 2017). In particular, the transcendental phenomenological approach provides a means to explore the background, history, and pertinent issues concerning the problem. A researcher describes the events, circumstances, or issues leading to the specific problem within this context. The research question guides the study and the study methods, including participants, types of data, and procedures for interpreting the data (Kleinke, 2016). Consequently, a researcher uncovers common patterns through the phenomenological process of self-reflection and exploration of shared experiences. A transcendental phenomenological study represented the best methodology for understanding and discovering the essence of administrative leaders' perspectives. A transcendental phenomenological study would allow me to examine the essence or meaning of the social phenomenon through self-reflection, self-exploration,

and self-discovery (Moustakas, 1990). The research design is focused on extrapolating pertinent information from administrative leaders' lived experiences and beliefs regarding the successful integration of the ICT platforms and implementing best practices in the K-12 programs.

During my study, I will apply the epoche process to track my judgment, biases, preconceived ideas, and concepts and focus on the lived experiences of research participants (see Moustakas, 1994). Moustakas (1994) stated that releasing predisposition and prejudices through the epoche process during knowledge attainment. Bracketing my interpretations and assumptions will allow me to present the phenomenon for what it meant to the participants and allow me to mitigate my voice on the study topic and not be coerced by "voices of the past that tell us the way things are or voices of the present that direct our thinking ... to see things for the first time" (Moustakas, 1994, p. 85).

Role of the Researcher

Because of the active involvement of a researcher and participants in the research process, the strategy becomes an essential element in extracting meaningful information through the process of sharing everyday experiences (Eriksson & Kovalainen, 2016). Such strategies involve collaboration with participants and reviewing, interpreting, and authenticating the data (Marshall & Rossman, 2014). In this study, I conducted interviews, gathered secondary data, and took notes to gain insight into the social phenomenon. Thus, I became the primary instrument because of the participants' information from policy development and policy implementation interviews.

In a quantitative study, a researcher's role is to explore outcomes and formulate generalizations using deductive reasoning (Guba & Lincoln, 1989). In contrast, the qualitative approach is focused on the method of investigation, interpreting the data, and understanding the meaning behind the phenomenon through inductive reasoning (Eriksson & Kovalainen, 2016). The qualitative researcher focuses on capturing the essence of the participants' experiences. In this study, I sought to understand the phenomenon through the self-discovery and self-reflections of the participants.

My primary aim was to solicit meaningful answers from the participants to arrive at common themes or patterns. This meaningful dialogue stems from a dialectical discussion that I integrated with my knowledge, experiences, and training into the interview process. The interview process involved open-end questions relating to the research questions. The process was designed to reveal common patterns, key relationships, and organizational changes in the social phenomenon.

As an educational director for an elementary school and an adjunct professor, I experienced firsthand many innovations in math, science, and reading programs. The benefit of these experiences allowed me to observe the challenges and obstacles that administrative leaders face regarding integrating ICT platforms. I examined articles, publications, and other materials associated with ICT platforms. Also, I conducted semi structured interviews and established a detailed journal to gain further insight into the social phenomenon.

I was careful to mitigate identified inherent biases and issues concerning incentives or conflicts of interest associated with the study participants. I had no prior

work affiliation, previous contact, or former association with the participants. However, if I had uncovered any bias, the emphasis would have been immediately addressing any issues or obstacles concerning the research.

Methodology

Methodology in a qualitative research study refers to the steps taken to understand research participants' experiences by examining in-depth conversations between researcher and participant and not verifying hypotheses through statistical analyses (van Manen, 2016). This section includes the methodology used for this research, including participant selection and recruitment, the data collection instrument, and the data analysis process.

Participant Selection Logic

The purpose of this qualitative transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. Data were collected from a purposeful sample of seven information-rich participants until data saturation was achieved. Starks and Trinidad (2007) declared that typical sample sizes for phenomenological studies range from one to 10 persons. Smaller sample sizes can yield information-rich responses to interview questions (Guest et al., 2020). Yeo et al. (2013) wrote that the complete range of constructs that make up a theory is adequately represented by the qualitative data collected when a researcher fully understands the participants' meaning of experience. Data saturation is when a researcher cannot obtain any new or additional information from the data (Vasileiou et al., 2018). Saturation was

achieved during data collection when themes began to repeat, and no new themes resulted from the interview data (Merriam & Grenier, 2019). I explored the concept of saturation regarding the repetitiveness of the data samples or the number of interviews. In particular, saturation occurs when no new coding or categories appear in the data being collected.

Population

The study population is a subset of the target population from which the sample is actually selected (Merriam & Tisdell, 2015). This study's population was administrative leaders within K-12 public school systems in the United States. According to the Department for Professional Employees, in 2018 there were approximately 460,000 principals and other administrators at public elementary and secondary schools in the United States (National Center for Education Statistics, 2020). The actual sample population was drawn from the target population using the following inclusion criteria: (a) between 2 and 5 years of teaching and administrative experience, (b) current knowledge and practices of smart schools, and (c) key decision makers involved in developing policy and procedures.

Sampling Criteria

Identifying a sample population, detailing the specific population, and applying the relevant methodology is imperative to research integrity in qualitative research (Merriam & Tisdell, 2015). A qualitative transcendental phenomenological study is concerned with understanding the participants' lived experiences and the social phenomenon's meaning (Edwards, 2019). Participants for this transcendental

phenomenology study were recruited through LinkedIn using purposeful, criterion, and network sampling strategies. Potential participants were screened with the following inclusion criteria: (a) participants had between 2 and 5 years of teaching and administrative experience, (b) current knowledge and practices of smart schools, and (c) were key decision makers involved in developing policy and procedures. Data were collected through in-depth interviews in the informal, interactive process of transcendental phenomenological research using open-ended questions and dialogue (see Moustakas, 1994).

I applied the network and snowball technique associated with purposive sampling, these two being the most popular method for identifying research participants by requesting current participants to refer others who meet the sample criteria (Merriam & Grenier, 2019). Qualitative studies, in general, have smaller sample sizes than quantitative studies focusing on exhaustive descriptions from each participant (Tracy, 2019). In qualitative studies, the trustworthiness of data is not assessed by the number of participants, instead of by the rich, in-depth information about the phenomenon provided by the individual participants (Harkiolakis, 2017).

A transcendental phenomenological study is an appropriate method when an inductive approach focuses on formulating a theory based on the feedback from participants (Mason, 2017). The researcher's role in qualitative research might take the form of a collaborator or co-researcher in gaining insight into understanding the social phenomenon (Eriksson & Kovalainen, 2016). The selection of participants from schools across the country challenged the researcher because the data collection process required

specificity, flexibility, and reliability. The research process involved establishing a flexible criterion (based on the conceptual framework) to gather, analyze, and reflect on the data collected.

Instrumentation

One of the critical aspects of the phenomenological approach focuses on conducting interviews to grow and discover the meaning of experience (Moustakas, 1994). I conducted semi-structured interviews to identify the administrative leaders' beliefs and attitudes towards integrating ICT platforms in smart schools (See Appendix B). The interviewing process included open-end questions to explore administrative leaders' mindsets in a natural setting. Also, the semi-structured questions allowed the researcher to conduct follow-up questions for a more in-depth response. Hence, I became the primary instrument for collecting and coding data throughout the fieldwork (Barrett, 2007).

I gained insightful knowledge from the participant's interviews by emphasizing growth and discovery. I kept detailed observational notes and maintained a research journal to document new information derived from the participants. During the interview process, I drew on tacit knowledge and personal experiences to reflect on the data received by participants. Lastly, these three vantage points allowed the researcher to gain insight into the interview process through internal reflection, detailed notes, and a personal journal (Dickerson-Swift et al., 2007). Through a literature review, I developed interview questions to elicit participants' perspectives and understanding of their experience as defined through the conceptual framework of this study (see Merriam &

Grenier, 2019). The transcendental phenomenological approach was considered when choosing an interview protocol to understand administrative leaders' successful integration of ICT platforms and best practices in K-12 smart schools.

I used the semi-structured interviewing questions because this is the best method to capture participants' responses regarding the effectiveness and efficiency of ICT platforms in smart schools. The semi-structured interviewing questions helped the researcher understand the meaning behind the central theme of the research study. Furthermore, the role of the researcher becomes a critical component for soliciting a list of questions and answers from participants. These interview questions (See Appendix B) allow the researcher to ensure the rich source of information from the respondents. As a result, the semi-structured approach provided flexibility, structure, and consistency without being rigid by collecting pertinent data from participants (Kvale & Brinkmann, 2009).

Further, I used several different techniques to ensure consistency, trustworthiness, and validity in the study (Guba & Lincoln, 1989). In this sense, the researcher shaped the study and compiled the data regarding the research process. More importantly, I became familiar with any internal biases and filtered out unnecessary data through reflection. Denzin and Lincoln (2008) described the process as reflexivity or reflecting (maintaining cohesion and objectivity) regarding the research process. Thus, reflexivity allows the researcher to view the phenomenon critically by acknowledging the research process's internal biases and external limitations.

In qualitative research, the time factor and having adequate resources significantly influence the type of sampling (Mason, 2017). Although, there may be some populations that do not yield enough concrete results. When enough participants are not available, a researcher will use a snowball sampling to recruit other participants (Emerson, 2015). The advantages of using a snowball sample focus on recruiting participants from the same background or similar population. I was mindful of inherent biases within this small, selected group. One of the techniques I used to ensure the study's trustworthiness was conducting a field test to review any issues, biases, or constraints regarding the various sampling methods.

Field Test

A field test was conducted to assess the feasibility of the research design, the validity of the research questions, and the protocols for carrying out the study (Tashakkori et al., 1998). In particular, the field test evaluated the research procedures (e.g., research protocols, interview questions, design objectives, etc.) to modify or change the research design. For example, the field test examined the sample size and the specific characteristics of the target population. The goal of the field test was geared toward identifying potential problems and avoiding bias incurred by the researcher.

Two professors' suggestions provided valuable feedback on this field test's research design and protocols. This review of the research design by the two professors included the recruiting process, research procedures, and sample size associated with the data collection. In doing so, the two professors' assessment ensured that the study's objectives aligned with the research design and the accuracy of the data collection.

Finally, the researcher was responsible for ensuring the ethical and accurate documentation of the data collection process (Guillemin et al., 2012; Kaba & Beran, 2014).

One of the advantages of a field test is reviewing the ethical considerations, the best approach to protocols, and identifying key issues pertinent to the participants (Russano et al., 2019). In other words, the field test may clarify ambiguous questions or identify potential problems. For instance, a text message or email reminding participants of the interview schedule may prevent miscommunication. Moreover, the lessons learned from the field test can enhance the researcher's skills and contribute to the success of the research plan. In short, the implementation of a field test can assist the researcher in identifying problems and modifying interviewing questions or protocols to ensure the success of the research study.

Procedures for Recruitment, Participation, and Data Collection

The interview process was the primary method for collecting data. The interview process was used to ensure vibrant, diverse, and meaningful responses from the participants (Marshall & Rossman, 2014). The interview process enabled the researcher to seek out probing questions (Appendix B) and to capture the essence of the participants' experiences. The collecting data, through interviews, offered the researcher an opportunity to gather the personal perspectives and experiences of participants. The interview process is an effort to understand the world through the participant's perspective or the subject's point of view (Kvale & Brinkmann, 2009). Thus, the interview process is a tool for interacting with subjects and generating diverse data.

The recruitment strategy consisted of two parts using purposeful sampling (a) the securing of participants' emails from the organization's website and (b) a follow-up letter inviting participants to participate in the research study. Purposive sampling was based on the type of organization, participants' position, and years of experience drawn from a specific population (Mujere, 2016). Purposive sampling examines a specific population segment to obtain insightful answers to the questions and understand the phenomenon in-depth. I considered the specific aim of the research question and gathered an accurate representation of the target population (Nelson, 2017).

Once the IRB approved the data collection process, a recruitment letter (Appendix A) was sent to each participant in the school seeking permission to conduct a research study. In addition, the letter outlined a brief description of the research, consent forms, and contact information requesting the participation of principals, directors, and IT administrators in the research study. Then, I conducted an inquiry on the LinkedIn platform to recruit 10 to 15 administrative leaders concerning smart schools across the country. The purpose of the LinkedIn platform was the solicitation of participants based on two objectives (a) to secure a significant sample size and (b) to conduct one-hour audio interviews with each of the participants. Finally, each participant sent a schedule specifying the particular interview's date, time, and location.

The number of participants may have been sufficiently lower than first expected due to administrative restraints or scheduling conflicts by administrative leaders. In this case, seven participants were recruited after exhausting all means to recruit participants and with data collection challenges due to the COVID-19 pandemic. Precautionary steps

ensured continuity if a significant number of participants dropped out of the study or the data collection reached a level of saturation. The minimum number of interviews recommended for a phenomenological study is five participants (Tracy, 2019). I continued past five participants until I reached data saturation, with similar data noted from participants 5, 6, and 7 (Schram, 2006).

I used field-tested semi structured questions that formed the basis of the interview process until a saturation point was reached. However, there are no established guidelines or preset agreements to determine when reaching a saturation point in the study (Nelson, 2017). As a result, the guidelines were used when the researcher had exhausted all means of soliciting new information or finding additional participants for the study (Fusch & Ness, 2015). A transcription verification of the interviews was sent via email to each participant to check for accuracy and clarification. Conducting interviews was the main priority of securing data in a locked file cabinet and stored for approximately five years.

The interviews for my study were conducted and recorded via telephone. All the interviews were recorded on a phone-based audio call-recorder. The actual interview process followed the empirical phenomenological data collection process (see Figure 2): developed by Moustakas (1994): to engage in the epoche process as a way of creating an atmosphere and rapport for conducting the interview; bracket the question; and conduct the qualitative research interview to obtain descriptions of the experience. Moustakas (1994) suggested that “the phenomenological interview begins with a social conversation or a brief meditative activity aimed at creating a relaxed and trusting atmosphere” (p. 114).

In this sense, the interview process describes their experiences with allocating resources and teaching each of these students. This type of question, according to Moustakas, allows the participant to “focus on the experience...and then to describe the experience fully” (p. 114). The researcher was the sole data collection agent in the study. The researcher then conducted and reported a lengthy person-to-person interview that focused on a bracketed topic and question (see Moustakas, 1994). Finally, the exit strategies emphasized the debriefing of participants regarding the objectives, protocols, and procedures. The primary focus was to allow participants to feel comfortable sharing information and improving the research process.

Data Analysis Plan

Transcendental phenomenology is focused on describing experiences and concepts such as epoche, in which the researcher takes a fresh perspective of the phenomenon under study (Moustakas, 1994). When everything in a study is perceived freshly, as if for the first time, it is called transcendental; however, the researcher seldom achieves this state (Moustakas, 1994). Phenomenology researchers begin the data analysis part of a study by describing their experiences with the phenomenon and bracketing their views about their experience (Moustakas, 1994). Data analysis of empirical phenomenology identifies a phenomenon to the study, bracketing out one's experiences and collecting data from several people with experience with the phenomenon being studied (Moustakas, 1994).

The data analysis method used for this research study was the Moustakas (1994) modification of the Van Kaam method for analyzing phenomenological data. The

modified Van Kaam method requires that each transcribed interview be analyzed to find the horizons of the experience. Horizons were those expressions that were directly related to the experience. Interviews were transcribed, and responses from each participant's transcripts were then analyzed by reducing the information to statements and quotes that are significant, combining the statements into themes, and writing a textual description of the participant's experiences.

Van Kaam's (1966) method of analysis, as modified and described by Moustakas (1994), was used to develop descriptions. The participants' experiences in which they lived the phenomenon were grouped into structural descriptions combined with a statement of textural descriptions to convey the essence of the experience provided. Since the purpose of the research is to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools, understanding the meaning and essence of the experience is critically important.

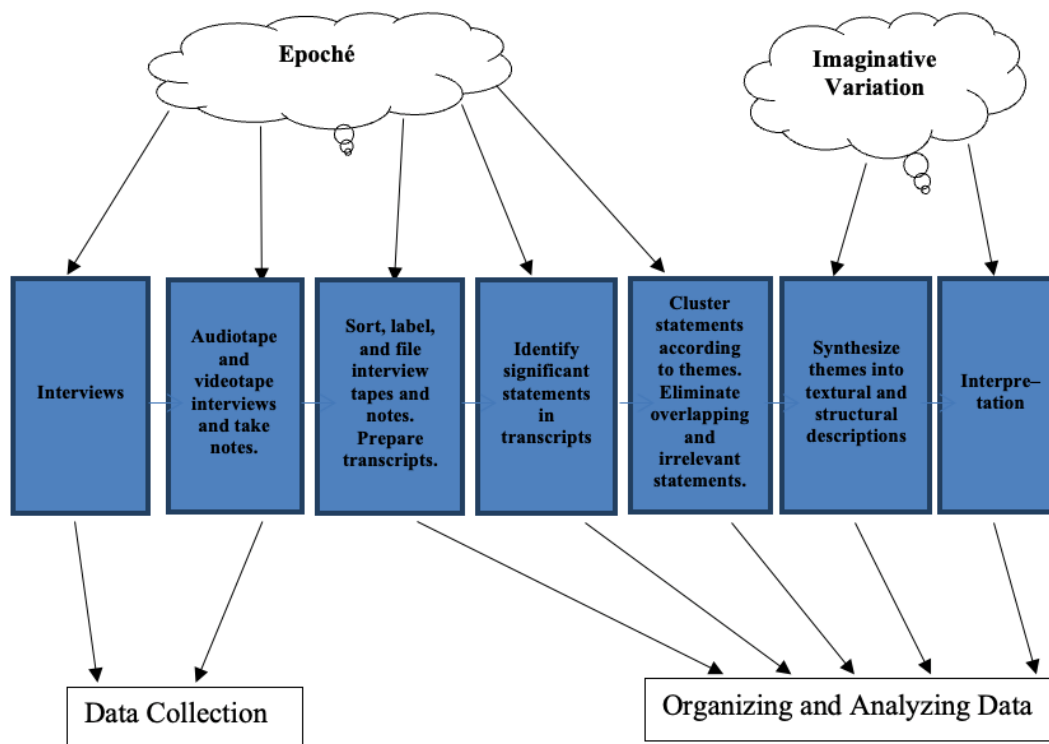
HyperResearch software was used to code data for this research study. In particular, HyperResearch was used to organize and manage data storage. I manually hand-coded the data collected from this research study as per Moustakas' (1994) modified Van Kaam data analysis method. Coding is an integral part of data analysis in qualitative research. The coding process consisted of labels, themes, or tags generated by the researcher to apply meaning to the data and describe the data's essence (Clark & Veale, 2018). I used Moustakas' (1994) modification of the Van Kaam method for the entire data analysis process consisting of the following seven steps: epoche process and

horizontalization, reduction and elimination, clustering and thematizing, individual textual description, and textural-structural description, and a synthesis of textural and structural descriptions (Moustakas, 1994) During the data analysis process, discrepant or deviant cases that did not align with the majority findings were categorized and listed as alternative findings.

As visualized in Figure 5, once the data in this empirical phenomenological study was organized, data analysis will facilitate the development of 1) individual textural and structural descriptions, 2) a composite textural description, 3) a composite structural description, and 4) a synthesis of textural and structural meanings and essences (Moustakas, 1994).

Figure 2

Moustakas' Empirical Phenomenological Research Model



Source: Adapted from *Phenomenological Research Methods* (p. 180–182), by C.

Moustakas, Copyright 1994 by Sage Publications.

Software

Throughout the study, the researcher's role was to enhance and ensure credibility in data collection, analysis, interpretation, and reporting. A conscious effort was made to remove all personal biases and prejudices while collecting, documenting, analyzing, and processing all information. Personal integrity was considered paramount to achieving quality and acceptance of the study and results (Merriam & Tisdell, 2015).

Issues of Trustworthiness

Credibility

The statistical standard is frequently used in quantitative research to account for reliability and validity. However, in qualitative studies, the researcher relies on the accuracy of the interviews, observations, and editorial notes. Hence, the researcher must establish reliability and validity by developing strategies for maintaining rigor throughout the study (Guba & Lincoln, 1989). In other words, the researcher should continually monitor the research process to ensure creditability, transferability, dependability, and conformability (Kleining & Witt, 2000). The researcher seeks to develop a strategy of trustworthiness by establishing standards, including debriefing participants, auditing notes, and verifying the data.

Transferability

In qualitative research, the researcher notes that the transferability of the study does not mean generalizing every detail of the research, but the study seeks to sum up the lessons learned in the finding (Kleining & Witt, 2000). In doing so, transferability does not refer to whether or not the sample represents the study. Instead, the sample population addresses whether or not the detailed descriptions yield similar results under the same conditions. The participants' diverse experiences or common backgrounds can provide the researcher with insight into the big picture (Denzin & Lincoln, 2008). Thus, the researcher provides a lens to reflect on the research process and communicates the depth of the study results.

Dependability

Developing a coherent strategy does not always translate into clear goals or relevant results. In other words, the strategy of implementing dependability (e.g., member checking, debriefing participants, audit checking, etc.) might be helpful tools to evaluate the research process, but they do not ensure rigor (Guba & Lincoln, 1989). However, these evaluating tools were essential steps in the research process, but also, they were essential components of rigor and triangulation (Kleining & Witt, 2000). For example, the researcher can verify a memo or check a report to maintain the validity of the data. Implementing coherent strategies for collecting and evaluating the data forms the basis for ensuring triangulation in qualitative studies.

Confirmability

The researcher should not rely solely on unbiased opinions and individual perceptions (Kleining & Witt, 2000). Instead, the bias creates an opportunity for the researcher to monitor and record sessions to ensure confirmability (Miles et al., 2014). In doing so, confirmability includes strategies to identify procedures for data collection and methods for duplicating an audit trail. As a result, member checking is another method of establishing creditability and confirmability. Member checking is a means by which the researcher can examine the social phenomenon through the lens of the participants. The framework of confirmability lends creditability to the research study through the participants' involvement in every stage of the process.

Ethical Procedures

A critical component of the ethical considerations was Institutional Review Board (IRB) approval and the certificate of completion from the National Institute of Health. The National Institute of Health certificate was completed in January 2018, and after Chapter 3, I sought the approval of the Institutional Review Board. These guidelines are essential for a variety of reasons: (a) developing a criterion for selecting participants and recording information without infringing on their identity or privacy, (b) securing informed consent forms, and providing options for participants to withdraw from the study, and (c) to ensure no mental or physical harm will come to participants. Finally, the researcher did not foresee any conflict of interest or financial incentives to participate in the study.

Each participant was required to sign an informed consent form and assigned an identification number for voluntary participation in the research study. I discussed an overview of the study, the specific protocols, and all the IRB requirements. Specifically, the IRB guidelines concerning participants' identities, data storage, and rights. In addition, the participants were allowed to withdraw at any time during the research study. Finally, a locked storage cabinet contains the research data, interviews, and notes and will do so for five years.

I conducted research that put into place safeguards and protocols to minimize risks to participants (Lodico et al., 2010). Also, I focused on designing an ethical and flexible research study. In particular, I strived to incorporate specific protocols such as (a) the description of the study, (b) the volunteer nature of the study, (c) potential risks and

benefits, and (d) the privacy and confidentiality of the study (Ritchie & Lewis, 2003). Thus, I considered all ethical issues, including collecting, storing, and disseminating human subjects' information.

Summary

Chapter 3 provides a detailed account of the research methodology and description of the study. A qualitative study using an empirical transcendental phenomenological approach was considered to demonstrate how administrative leaders' perceptions, beliefs, and experiences process information in the real world (Ghonoodi & Salimi, 2011). In doing so, the phenomenological empirical approach focuses on viewing and understanding the world through the lens of administrative leaders. As a result, the research methodology explores the administrative leaders' common themes that shape their beliefs, perception, and experiences.

A transcendental phenomenological study was chosen to address the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. A transcendental phenomenological approach allowed the researcher to gather data that could describe the essence of each participant's lived experience (see Moustakas, 1994). I collected data in the phenomenology tradition using informal, open-ended questions and dialogue (see Moustakas, 1994). Interview questions were developed to generate original qualitative data based on the participants' lived experiences. The interviews for my study were conducted and recorded via telephone. All the interviews were recorded on a phone-based audio call-recorder.

Purposeful sampling is used in qualitative research to recruit information-rich cases related to the phenomenon of interest (Merriam & Tisdell, 2015). Screening of each participant was based on the following inclusion criteria: (a) participants had between 2-5 years of teaching and administrative experience, (b) current knowledge and practices of smart schools, and (c) were key decision-makers involved in developing policy and procedures. I intended to obtain rich data from the selected participant until saturation was achieved. I identified themes or patterns regarding how the study participants experienced the phenomena.

Administrative leaders shifted the focus from the teacher-oriented approach to individualized learning to integrate ICT in the classroom (Clark & Boyer, 2016). In particular, the participant sample consists of seven participants, including several principals, directors, and IT coordinators. The qualitative design used three data collection methods: interview questions, researchers' notes, and member checking. Credibility, transferability, dependability, and confirmability were employed using strategies such as fact-checking and triangulation (Kleining & Witt, 2000). Finally, to ensure confidentiality, the researcher will secure all audiotapes, transcripts, and data notes in a locked file cabinet for five years.

The specific data analysis method used for this research study was Moustakas' (1994) modification of the Van Kaam approach for analyzing phenomenological data. I employed epoche to bracket and eliminate bias, preconceived notions, and prejudices to approach the phenomenon fresh as if for the first time (see Moustakas, 1994). The trustworthiness of this transcendental phenomenological study was developed by

ensuring credibility, transferability, dependability, and confirmability. I also ensured that the privacy and confidentiality of the study participants were maintained and protected the rights of the study participants. In conclusion, the researcher must consider the validity and reliability of their research study. Chapter 4 will analyze key themes and patterns from the research findings within this conceptual framework of building capacity for integrating ICT. In doing so, I will compare the previous literature with current data to reach a coherent conclusion. Thus, the goal of Chapter 4 is to conduct a thorough analysis and review of the data to develop a deeper understanding of the successful integration of ICT platforms and the best practices in smart elementary schools.

Chapter 4: Results

Introduction

The purpose of this qualitative transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. School administrative leaders have recognized that ICT platforms have not kept pace with the skill sets of administrative leaders and teachers' best practices in the classrooms and have not achieved the learning outcomes or the efficient use of ICT platforms for addressing the needs of K-12 programs (Hébert et al., 2021; Ryoo et al., 2021). Administrative leaders who have failed to adopt a comprehensive strategy and new skillsets have exhibited poor decision making concerning leveraging the full effects of ICT platforms (Militello et al., 2021). The central research question that guided this study was: What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools? I developed the research question after an exhaustive review of the existing literature, wherein I identified a gap regarding administrative leaders' anachronistic beliefs on implementing best practices efficiently into ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b).

To meet the purpose of the study and provide data to answer the central research question, I used a transcendental phenomenological design to collect individual narratives of lived experiences from seven information-rich participants until data saturation was reached. Saturation was achieved during data collection when themes began to repeat, no new themes resulted from the interview data, and no new coding or categories appeared

(Tracy, 2019). The participants provided valuable insight into their professional experiences as smart school administrative leaders. Moustakas' (1994) modified Van Kaam data analysis approach was applied in this transcendental phenomenological study to provide meaning to the study sample's lived experiences of administrative leaders, thus addressing the purpose and research question for the study.

The concepts of building digital capacity in smart schools and ICT platform integration in smart schools provided the conceptual framework of the study, and the study was theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). These two concepts may frame the interface between administrative leaders' lived experiences and the integration of ICT platforms and best practices in smart schools. In this chapter, I present and discuss the methods used to collect data from participants and subsequent analysis techniques. I provide evidence of the trustworthiness of the study. I provide detailed results of the study, including discrepant cases.

Setting

Potential participants for this study were identified via my LinkedIn professional network platform, my professional network, and through snowball sampling (see Merriam & Tisdell, 2015). I searched for and reviewed potential participants' profiles using purposeful, criterion, and snowball strategies to assure the study's inclusion criteria were met: (a) between 2 and 5 years of teaching and administrative experience, (b) current knowledge and practices of smart schools, and (c) key decision makers involved

in developing policy and procedures. In the recruitment email, I explained the procedure for the interview, the interview method, and the interview duration. Each participant was aware of the confidentiality standards practiced during the data collection process. A copy of the interview protocol was emailed to each participant who requested to review the interview questions before the interview. Once the participants read the informed consent form and replied via email, "I consent," I scheduled the interview for a date and time that best worked for the participant.

I employed three vantage points recommended in qualitative research to gain insight into the interview process through internal reflection, detailed notes, and a personal journal (Dickerson-Swift et al., 2007). I gained insightful knowledge from the participants' interviews and kept these through detailed observational notes and kept a personal researcher journal. During the interview process, I drew on tacit knowledge and personal experiences to reflect on the data received by participants. Participants did not show distress during the interviews and openly shared their lived experiences.

Demographics

The interviews for my study were conducted and recorded via telephone. All the interviews were recorded on a phone-based audio call recorder. The interviews lasted 30–45 minutes. The participants who took part in the study were administrative leaders employed in school administrations. All participants recruited for the research sample were at least 18 years of age. Every participant interacted with a diverse population of stakeholders within their school system, and all had key responsibilities in leading the successful integration of ICT platforms in K-12 smart schools in the United States.

The demographic variables considered for this study were whether participants had between 2 and 5 years of teaching and administrative experience, current knowledge and practices of smart schools, and were key decision makers in developing policy and procedures. These demographic variables were relevant to the conceptual framework. The given pseudonyms of each participant in this chapter will appear P1, P2, P3, etc., to signify Participant 1, Participant 2, Participant 3, etc. The complete participant demographics appear in Table 3.

Table 3

Participants' Demographics and Characteristics

	Gender	Develop or implement policy	Years of experience	Role in organization
P1	Male	Develop policy	7+	Superintendent
P2	Female	Implement policy	15+	Technical coordinator
P3	Female	Develop policy	7+	Administrative IT
P4	Male	Implement policy	20+	Elementary school principal
P5	Male	Develop policy	10+	IT director
P6	Male	Implement policy	20+	High school vice principal
P7	Female	Implement policy	15+	IT coordinator

As Table 3 demonstrates, the administrative leader participants had an average of 17 years of decision-making experience and were evenly divided between policymakers and the implementation of ICT platforms. Table 3 also indicates that the roles of the seven participants (four men and three women) were: superintendent, IT administrator, principal, vice principal, IT director, and technical coordinator. The interviews were conducted between January 12, 2021, and May 22, 2021. Each participant was assigned a designation of P1 through P7 to mask their identity and assure confidentiality.

Data Collection

Initially, I was going to use participants from one school located in Northern California. However, the situation changed due to the global COVID-19 pandemic. Therefore, I had to revise my recruitment strategy. The new strategy called for recruiting participants from the LinkedIn social media platform. The LinkedIn platform has 10 groups that range from large to small constituents that dealt with technology and education. There were originally nine participants who contacted me from the LinkedIn group and four referrals from my professional network, using flyers, phone calls, and emails regarding their participation. The participants were superintendents, principals, and IT coordinators involved in various stages of ICT platform integration. This group of administrative leaders was diverse, knowledgeable, and fully engaged in integrating various aspects of ICT integration.

Participants for this transcendental phenomenology study were recruited using purposeful sampling and a snowball strategy. As I mentioned, there were nine potential participants from the LinkedIn networking platform and four referrals from my professional network. Some of the participants who contacted me could not participate due to other commitments and various time constraints. However, seven administrative leaders from around the country met the specific requirements and agreed to participate in the research study. Immediately, I began to send out an informational letter, the consent form, and the research questions. Once the consent form was returned via email, the date and time for the interview were agreed on by each participant. Consequently, I

began the data collection by conducting interviews with the selected participants via telephone.

All recorded phone interviews took place between January 12, 2021, and May 22, 2021. The semi structured interviews were recorded on a phone-based audio recorder based on the field test. Interviews were conducted in private settings chosen by the participants, and there was no evidence of any stress in the interview settings. Each of the interviews lasted for approximately 30–45 minutes, time enough to gather information-rich data on the participants' lived experiences while concurrently addressing the purpose of the study.

At the beginning of each interview, I set aside and bracketed my own experiences and biases not to influence each participant's responses. I thanked each of the administrative leaders for participating in the research study. In addition, I went over the purpose of the study, the research protocols, and answered any questions related to the study. Before each session, I asked the participants if I had their permission to record the interview. After the participants gave verbal consent, I asked the first question to establish rapport and elicit meaningful responses from their perspectives. Denzin and Lincoln (2008) argued that individual in-depth interviews allow for robust and meaningful dialogue from the participant's perspective. Thus, the qualitative interview can derive meaning and understanding from the participants' lived experiences. The minimum number of interviews recommended for a phenomenological study is five participants (Tracy, 2019). I continued past five participants until I reached data saturation, with similar data noted from P5, P6, and P7 (Schram, 2006).

At the end of the interview, I thanked each participant again for their participation and asked if they had any additional questions. Afterward, the participants' interviews were sent to a professional transcription service, and raw interviews were turned into a Microsoft Word document within 24 to 48 hours. Once the interviews were transcribed, I wrote a brief but succinct summarization of each participants' responses. The summarization was forwarded to each participant to check for clarity, accuracy, and consistency.

The two concepts of building digital capacity in smart schools and ICT platforms integration in smart schools provide the conceptual framework of the study, and the study was theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). Thus, the strength of these two concepts may frame the interface between administrative leaders' lived experiences and the successful integration of ICT platforms and best practices in smart schools.

Capacity building provides a systematic approach to disseminating information and a means for improving organizational infrastructures (Harris et al., 2013; Hondale, 1981; White, 2014). This systematic approach to capacity building focuses on examining the link between leaders' belief systems and policy making in large complex organizations (Wood & Bandura, 1989). Administrative leaders have become facilitators who influence the organizational processes, structures, and policies. Thus, these three concepts form the contextual basis for exploring the link between administrative leaders' mindsets and optimizing the integration of ICT platforms.

The social cognitive theory emphasized that administrative leaders must have self-confidence and self-discipline to withstand adversity in the organization (Wood & Bandura, 1989). Administrative leaders' beliefs can affect overall performance and influence the organization (Bandura, 1995). In other words, administrative leaders can motivate teachers and inspire students to learn by fostering an innovative environment. Thus, administrative leaders must articulate the vision and communicate the mission to teachers by systematically engaging in capacity building in the organization (Fullan & Hargreaves, 2014).

Data Analysis

In this section, I presented the analysis of my studies data using Moustakas' (1994) modification of the Van Kaam method and explained below in seven steps:

1. Each interview was conducted via phone or Zoom using ten field-tested semi structured questions to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. Each participant was asked the same questions, and the interviews were audio-recorded, transcribed, and member-checked to organize the *listing and grouping* process. After reading the transcript reviewed by participants, I engaged in the *epoche* process through careful *phenomenological bracketing* to track my preconceived notions, judgment, and biases from past personal and professional experiences as much as possible during the coding process.

2. All interviews collected were significant to understanding participants' lived experiences with the phenomena studied. I carefully read and coded words by hand and

formed codes from direct quotes of participants relative to the research question. This manual coding process ensured *horizontalization* with each question and the responses for the seven interviews. With manual hand-coding, I could navigate the often complex and distinctive elements of analyzing data while maintaining control and ownership of the data analysis process (see Saldana, 2015). HyperResearch software was used to organize and manage data storage. I manually hand-coded the data collected from this research study as per Moustakas' (1994) modified Van Kaam data analysis method. Coding is an integral part of data analysis in qualitative research. The coding process consisted of labels, themes, or tags generated by the researcher to apply meaning to the data and describe the data's essence (Clark & Veale, 2018).

3. Each significant statement extracted from responses was evaluated to ensure *reduction and elimination*, and meaning units were developed from each point recorded and then re-categorized into meaningful categories grounded in the study's conceptual framework. All duplications were eliminated.

4. *Clustering and thematizing* were conducted by manually narrowing the remaining statements into key themes and codes

5. *The individual textual descriptions* were developed for each of the seven participants described in the primary data collection results.

6. *The textural-structural descriptions* were developed as narrative summaries of each participant's lived experiences with the study phenomenon.

7. *A synthesis of textural and structural descriptions* provided the essential meanings of the lived experiences of the entire group of participants as a whole

Epoche Protocol

I launched the first step of the modified Van Kaam method by engaging in the epoche protocol to initiate data analysis to uncover new knowledge. I did my best to reflect on my experience and perceptions with the phenomenon and then consciously set aside my suppositions, perceptions, bias, and personal memories relating to ICT integration in smart schools (see Moerer-Urdahl & Creswell, 2004; Moustakas, 1994). Bracketing my interpretations and assumptions allowed me to enter the epoche process necessary to allow a more profound study, exploration, and discovery of the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools.

Preliminary Coding or Horizontalization

This study provided rich, thick, narrative data by responding to the ten interview questions. I collected valuable data to glean descriptive themes and give meaning to the phenomenon. The goal of preliminary coding in the transcendental phenomenological data analysis, using the modified Van Kaam method, is to identify pertinent quotes from each participant related to the phenomenon. In this second step of data analysis, also known as horizontalization, I assigned equal value to all participants' statements (see Moustakas, 1994). I hand-coded the collected data and identified participant statements relevant to the research question: *What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?* This primary coding or horizontalization resulted in a total of 151 significant

statements. Following are representative significant statements from the interview transcript as quoted by the participants:

Significant Statements From Participant 1

“I would say one of the, some of the biggest administrative skills are the ability to really just collaborate and work with people from across the organization.”

Sometimes that’s other administrators, teachers and students, and really anyone in the district ecosystem. You know, you can be incredibly talented and have incredible resources from a technological perspective but if you can’t build a common vision about where you want to go, as a district, as a group...

“...a common dashboard or view of how your students are doing, and it can also end a flag up if a student may need extra support.”

You know, a general student information system to track things like attendance or scores, or just common student information. Also, a platform for the students to use in the classrooms, such as a Chromebook or other types of devices, and obviously any network, resources that are used to connect all those things together.

I think a big part of it (adjusting to long term change) is just staying in touch with what the new technology is. So, building awareness around that. I also think clarity of vision, at all levels of the organization to where people, you know, where they want to go either at a grade level, at individual classroom or at the district level.

“I think listening is such an important one. Our values in our district are collaborate, think critically, be creative, offer empathy and learn from failure.”

Significant Statements From Participant 2

“We use Canvas, Google, and Nearpods and all that to present information to them (students), even in the classroom to avoid the paper trail because of COVID.

“I have to lead my department, so on Fridays we meet and we run our PLC (professional learning communities) teams and plan.”

“...the only real difference (before the pandemic) is there’s more technology being used than, like before you had blend. I had a blended classroom where I had the Chromebooks and also, we did things outside of technology.”

“I think that there has to be a division line between social technology and educational site.”

“...our school has a Facebook page, a Twitter page and all that, but I just feel like it’s blending too much into the personal life of people... crossing the lines and kids don’t understand iPad or Chromebook or laptop or whatever they’re using is a tool, it’s not a toy...it’s not, you shouldn’t be playing games.”

“The learning management? Well, it’s, to me it’s like, a binder or a notebook where I keep my lesson plans, but the kids have access to it. And then they submit their assignments there, so it’s...it’s a way to organize a teacher and the class and the students and the grades and everything are all there in one spot. So, if a parent calls, I can go look something up and they can even look it up because they’re connected too. So, I think it is

useful by using a learning management programs like Canvas, I know there's Blackboard and there's many others..."

"...the biggest, I think, problem or obstacle is a lack of understanding how things work by people who've been in management positions, like, administrative positions for long times."

Significant Statements From Participant 3

"I've been thinking a lot about digital literacy and competency and the differences between the two. And digital literacy is this basic literacy, meaning can you turn the computer on, do you know how to use a mouse? But the competency component is how do you facilitate in an online environment in a technologically-rich environment and how do you do that and not necessarily using the pedagogies that we are most familiar with. I feel that what I'm seeing right now in technologically-advanced schools is just kind of like a regurgitation of butts and seats, right? I don't think that we really have thought out what new ways students need to consider how they learn in an online environment."

"And I really think that everybody, from the students to the faculty, really don't have that competency, the digital competency, to be able to really leverage the possibilities of an online environment or a blended environment or an environment that deals withcuration."

...it's actually curation. Right? So that they have enough competency within the faculty and within the administrative to actually make sure that there is curation happening so that it benefits the students in a technological environment."

“I don’t think that the schools really understand that they need a taxonomy, a general taxonomy for all of the subjects that they are teaching and then have like these curation pods for each one of them...”

“Now, this is just from my perspective, a lack of knowledge management, understanding the importance of what knowledge management is as opposed to content management. I think everybody’s kind of familiar with content management, but I don’t think that a lot of folks really understand the bigger role of knowledge management in the organization of a technologically-advanced school.”

“Well okay so one of the things that I would have to say is that we have some systems that do not match. There’s a mismatch.”

“Because I think that one thing that happens is that that doesn’t always happen. You don’t have the administrator sitting with the teachers. And so, we decided to break that barrier because they have different perspectives and they should be included in that. A lot of these administrators have been instructors and so it’s very important to get the many voices, these communities of practice. That’s another way collaboration happens too. And they have to be invested, meaning that it’s not just a job. You have to understand this as a new way of doing work.”

“I think that in a traditional school, you wouldn’t have project-based learning. That’s a best practice for us. It’s aided by technology because we teach students how to do critical thinking and critical reading early so that, they are able to improve their decision-making even in young children. There’s no reason why you should start at the doctoral level. They need to know that right away.”

Significant Statements From Participant 4

“...I think there are so many other avenues of communication, that we’re finding that a lot of teachers are not checking their emails on a regular basis. I mean, that’s one of the things, their requirement, but it’s actually easier to get in contact with them through the Remind (external form of communication).”

“For hardware (and software integration), actually, for both, what you do, what I do is, we just pick, you have on your staff, you’re going to have those teachers that are tech savvy. They’re the ones that always want the newest equipment, the newest software, are willing to try new things. And then you also have the ones, teachers that are more reluctant to use technology.”

“There’s several constraints. One, you just have the bureaucracy of the State. They have several mandates that we have to follow. That can sometimes, and this is just a frustration with many of my teachers, things that we know are or what we believe is best for students and what we’ve seen work, but we’re limited in how to, making sure that those things happen, just because we, our school is a bureaucracy and there’s, you have to make sure that the bureaucracy is satisfied as well. So that’s our biggest constraint is just the freedom. Lack of freedom.”

“Often times it may be interpersonal problems between staff. You just do your best, but sometimes, when it gets to me, it’s not even that they want me to solve it. It’s just, they want me to listen. And often times I’ve found it’s not even problems. It’s not even problems between the teachers. It’s just more frustration with the situation. But

often, as a leader, just listening is the biggest key, listening and doing what you can to be an empathetic listener.”

“I think it goes back to trusting your staff, to basically have them workshop the problems, whether it be technology or anything else. They’re the, especially the teachers ...they are ones that are going to mostly deal with those problems on the front lines. So have them come up with a solution. I mean, I’m there to facilitate them, what resources do you need, but have them, go to them and how would you solve this problem?”

“I think it kind of just goes back to making sure that, to put that technology in the hands of the teachers, the faculty, and making sure that they can use it and just willing to accept mistakes, that mistakes will happen. And that’s just like we tell our students, that’s an opportunity to learn.”

Significant Statements From Participant 5

“You need to acquaint yourself with the technology with which you are using and how you need to communicate so that the other party will hear you and understand you.

“Well, in order to fit them in to the imaging technology of these days organizations, like mine, we always need to do some research in order to flow with the ever changing technology. Because if you still use the old technology, then you will not be able to communicate. And you will not be able to do business with the other party. That’s why you need to upgrade.”

“Yeah. Say you want to integrate new software. Sometimes it can take months. Sometimes it could take a whole year. So, what is, what are some of the challenges that you faced when you introduced new? Do you just give it to the people in your

organization to try it out, or do you say we're going to implement this in the coming months?"

"I believe it's just the awareness, creating awareness so that the people will know exactly what they are doing. If that awareness is not there, then there will not be any integration."

"...some of the best practice, of course, it still goes back to the, enforcing them all to embrace the technology through training."

"So based on the feedback that you get, then you will be able to tweak your actions, what you need to do in order to improve the process. So, feedback is very important."

Significant Statements From Participant 6

"So, when you're looking at an average day, first of all, it was a long day because most administrators don't work your average eight hours."

"There were approximately 2200 students in my building and all my school staff reported to the senior administration. I had a ninth grade freshman on track rate of 93.5. My graduation rate was 82.8% last year with a dropout rate of 1.7. My college enrollment was 87.9. My attendance rate was 91.6 and my nearest school was 91.1."

"You start off with, of course, meeting and greeting the kids at the front door or at the lunch and breakfast table. From there, you can go to classroom monitoring making sure that activity and classroom instructional procedures are being followed. There's one the day that we're called swing days, future evaluation meeting. Then, you will end with

some type of quote of the day, word of the day or something that gives kids a sense of that you're engaged in their learning and not just a dictatorship.”

“It was a fully functional technology department. You had different small learning groups or small learning schools. They call them small learning schools and they each had their own fully Chromebooks, laptops, teacher projector boards, and anything that they needed that dealt with technology and resources worked for student achievement and student ambassador.”

“I can't speak for other institutions, however, at my particular institution and there were two of the main things that probably stick out more than anything else is the bureaucratic timing and implementation of the largest tech programs. Probably the two largest pushback that most educational institutional face on a daily basis. The paperwork or the paper trail is so long to get signatures and to mention operating these Zoom meetings or whatever you may have, it's just time consuming.”

“I think it's imperative that you not only have collaboration, but you evaluate other motivational techniques and learning strategies that's already been implemented in your building. Technology is only one aspect of the learning process. There are other inspirational motivational tactics and strategies and tools...”

“You got to make sure that the collaboration inside of those team meetings, departmental meetings, PLC, which is more of leadership thing... from the senior leadership team all the way down from the administrator meeting, all the way down to the student council...when they're talking about technology and how to move forward with it.”

Significant Statements From Participant 7

“Well, I think one of the things is that the students, all students, should have the necessary tools to work with. For example, if this is a tech school, they need to have access to Chromebooks, to the computer, laptops, iPads, whatever. First of all, they need to have, every student needs to have some kind of computer and internet access...What am I trying to say? At least some kind of computer to access their work...”

“I think that the teacher needs to be very knowledgeable of the technology that they’re using. They need to be familiar with a Chromebook. They need to be familiar with the computer or whatever they’re using because these students using this technology every day. So, you need to be very knowledgeable about technology. And the other thing you need to have a good IT person in the building that is accessible, so when you have a problem or whatever, they can address it in a timely manner so that you can continue to teach.”

“So, one of the things I think is most important, and it’s very basic, very simple, but very necessary, is that we need to have suitable spaces (physical) to teach or for the students to learn. You need to have the proper spaces, number one. And then, the other thing I think you need is, like I said earlier, you need to have knowledge. For example, I had to learn how to put links into my lesson plans, and the links are for students to continue to explore and learn about the subject...”

“We’ve moved up from blackboards and whiteboards to smart boards. And these smart boards are just what they say they are. They’re very versatile. And so, it helps with

visual, it helps with auditory. So yeah, so students who might've forgotten their books or whatever can still participate, because they can follow along with a smart board.”

“We have older teachers...they do have problems with learning new skills, and especially the computer is one. We do face a problem since I work in low-income type area where students are faced with a lot of problems whereby not only is learning is an issue, but even getting to school is an issue.”

“Well, I think one of the problems we have to address is getting the parents or the caregiver more involved. We have to also make the students more accountable for themselves and their learning, and stop making it just on the leaders, the teachers that's in the schools. So, I think one of the problems is you need to involve everybody concerned. And that can include the school nurse, that can include the social worker, that can include your case manager if the child has a special needs child. You need to include everybody.”

Phenomenological Reduction and Elimination

The third step of the data analysis procedure of phenomenological reduction and elimination involves identifying and eliminating participant statements that do not provide elements for understanding the lived experience, are nonspecific to the experience, and cannot be labeled (Moustakas, 1994). I eliminated participant quotes from the data analysis protocol that did not meet this required definition of a significant statement with the framework of the modified Van Kaam data analysis method. Through the reduction and elimination step, I ensured the integrity of invariant statements that define the horizon of participants' lived experiences (Moustakas, 1994).

To initiate the reduction and elimination protocol, I reflected on two important questions as I read each participant's statements: "*Is this quote important to the participant's lived experience of the phenomenon?*" and "*Can this quote be reduced to its latent meaning?*". If I answered no to any of these questions about participants' statements, I eliminated the invariant constituents of the experience from repetitive or irrelevant information. I judged them as less relevant to the research question by removing those statements. The reduced list totaled to 71 significant statements.

Upon the phenomenological reduction and elimination step, I developed the meaning of units extracted from significant statements and continued to eliminate any duplication or redundancies in the data. I created meaning units from each point recorded and then re-categorized the data into two primary meaningful categories grounded in the study's conceptual framework: *building digital capacity in smart schools* and *leading ICT platforms integration in smart schools*. All duplications were consolidated, and the statements that remained clearly illustrated the underlying meaning of participants' lived experiences with experience with the two phenomena of building digital capacity in smart schools and leading ICT platforms integration in smart schools. If the statement did not meet this criterion, it was considered ancillary and was separated. Representative statements that were excluded as a result of this process included:

Building Digital Capacity in Smart Schools

"I think one of the biggest ones (problems) is a (comprehensive) data system. So, you can have a common dashboard or view of how your students are doing..."

“You know, a general student information system to track things like attendance or scores, or just common student information. You know, also, a platform for the students to use in the classroom.”

“You could build those modules so that students have access to what they need just in real time, as opposed to having this randomness.”

“The other thing is that I think that students nowadays really need to be self-directed in their learning. So, it shouldn’t be the instructor in front of the classroom all the time. It should be students actually participating in the development of knowledge.”

“I would say that one, training is a major component of letting people embrace or accept the technology that you want to introduce. If people do not know exactly how to use it technology or a piece of software that they have, they will be reluctant to change.”

“...everybody always has homecoming well, your homecoming can now be a motivator in which you’re training people, not only to vote, but to participate. So, you set up a voting booth so that the kids can use the voting for something important, but not all a piece of paper inside of a division room or in a classroom, but inside of a booth individually. You’ve now trained them as a long life learner, you choose a leisure activity out of voting, because that’s what voting booth looks like in the real world.”

“So, you have to get those questionnaires and you do it through your technology. You send out a massive email and they get the answers, a series of questions that you get to feel exactly where you need your seminar and your technology to go.”

“You have to put a box on your desk for implementing or inputting or suggestions of people who may have great ideas that can actually move your school forward. You can’t have a closed door policy when it comes to assets.”

“So, you definitely need to know the technology in order to operate whatever you’re using, such as a Chromebook or the computer.”

“if that student was absent that day, they would not be absent from the lesson, because you are also forwarding your lesson plan to the students, so they know what is expected from them every day, like homework, what lesson we’re going to be doing. And if they had questions, they will be able to ask that question the next day.”

Leading ICT Platforms Integration in Smart Schools

Yeah, I guess is, it’s much of what I described earlier, engaging...with the stakeholders, looking at the solutions.”

...Solutions that are out there, determining what key components or elements will make successful integration or implementation.”

It’s too connected with, again, that social media and the Google empire.”

“Don’t feel bad if I come in and it’s, what you plan to do just is not working out. Make those mistakes, and that way we can all learn from it when we roll out the technology to the larger faculty. Just kind of building that in.

“I mean, of course, there are some problems that I have to get involved in and I am the final decision maker. But, if at all possible, it is, just allow the staff to at least suggest solutions.”

“That’s why you need to upgrade. And then, so that you will be at par with, the other party so that you will be able to meet the competition or otherwise you wouldn’t be able to survive in today’s world because the technology that we are using that every, the technology is changing.”

“This is a very dynamic world these days. The technology changes every day and you need to change according to, in order to stay, ahead of the competition.”

“I believe it’s just the awareness, creating awareness so that the people will know exactly what they are doing. If that awareness is not there, then there will not, there will be, as I said, I still go back to people being reluctant to embrace change, to embrace it.”

“So that’s what administrators do most, they monitor to make sure that the procedures that are already voted on or set up, are put in place that teachers are following those protocols and making sure that they’re inside the classroom monitoring instruction to make sure now that the students are following those protocol. It’s all about as systematic system that has to be in place to make sure that the flow of the whole instructional process with iPad, whether it’s subject departmental or whether it’s just collaboration.”

Clustering and Thematizing

In the fourth step of Moustakas’ (1994) modification of the Van Kaam method of analysis, I thematized the invariant constituents by taking the statements and quotes that passed the two-question test and exploring the latent meanings of significant statements based on those latent meanings. In the reduction of experience, horizons are clustered into themes so that each of the themes has only one meaning. This step is followed by

thematizing the invariant constituents as the core themes of the experience (van Manen, 2016). I began to identify and group the underlying meaning into themes to reflect on the notion of *becoming*, the process of growing into one's full potential, and the notion of *being*, looking within to discover one's path and meaning of existence (see Moustakas, 1994). The groupings summarized similar themes that expressed participants' lived experiences with building digital capacity and ICT platforms integration in smart schools.

According to results from applying Moustakas' modified van Kaam Method, the ten themes that emerged from the reduction process include: (a) lead by example, (b) establish a shared vision with school system stakeholders, (c) building team cohesion and trust to accomplish a goal, (d) support teachers' identities for building ICT, (e) support students' identities for building ICT, (f) staying connected and abreast of new technology, (g) teach critical thinking skills by example, (h) lead as a good listener and great doer, (i) lead to succeed ICT program systems integration, and (j) support integration of an ICT ecosystem across the school system.

Theme formation in transcendental phenomenology best reflects reality when the researcher is open to learning by initiating distance between themselves and the phenomenon being studied and intuitively merging with the participant's experiences (Moustakas, 1994). Before making judgments and arriving at conclusions, as in the case of theme formation using a transcendental phenomenology design, one must allow the participant's experience to be observed from various perspectives. Knowledge and discovery for the phenomenological researcher are embedded in being and existing within ourselves and others—while connecting to what is important and meaningful in a

participant's life (Moustakas, 1994). A summative listing of significant themes derived from individual participants' responses is outlined in Table 5.

Table 4*Themes Derived From Individual Participants' Responses*

P1	P2	P3	P4	P5	P6	P7
Shared vision; lead as a good listener and doer	Lead by example	Critical thinking skills	Team cohesion and trust to accomplish a goal	Lead by example	Support integration across ecosystem	Lead by example
Lead to succeed in programs and practices	Building team cohesion and trust to accomplish a goal	Building team cohesion and trust to accomplish a goal	ICT programs and practices in system integration	Support teachers' identities for building ICT	ICT programs and practices in system integration	Support integration across ecosystem
Support integration across ecosystems	Support teachers' identities for building ICT	Support teachers' identities for building ICT	Lead as a good listener and doer	Lead to succeed in programs and practices	Lead to succeed in programs and practices	Lead to succeed in programs and practices
Stay abreast of new technology	Support student' identities for building ICT	ICT programs and practices in system integration	Lead to succeed in programs and practices	Support integration across ecosystem	Support teachers' identities for building ICT	Support teachers' identities for building ICT
Building team cohesion and trust to accomplish a goal	Teach critical thinking skills	Lead to succeed in programs and practices	Support integration across ecosystem	ICT programs and practices in system integration	Building team cohesion and trust to accomplish a goal	ICT programs and practices in system integration
Support teachers' identities for building ICT	Lead as a good listener and great doer	Support integration across ecosystem	Support student' identities for building ICT	Stay abreast of new technology	Support student' identities for building ICT	Support student' identities for building ICT
Support student' identities for building ICT	Lead to succeed in programs and practices	Lead as a good listener and doer	Support teachers' identities for building ICT	Shared vision	Teach critical thinking skills	Teach critical thinking skills
Teach critical thinking skills		Shared vision	Stay abreast of new technology		Shared vision	Stay abreast of new technology

Individual Textual Descriptions

Individual textual descriptions are a thorough description of the phenomena experienced by and expressed verbatim by an individual participant in a transcendental phenomenology study (Moustakas, 1994). To present the textual description of participants' lived experiences, I used excerpts from the transcript in a narrative format that indicates participants' perceptions of the meaning of their experiences. In this step, I constructed textual descriptions for each participant based on the invariant themes and the horizons of the experience. Horizons are those expressions that were directly related to the experience (see Van Kaam, 1996). I describe the "what" of participants' experience without interpretation and researcher bias. My aim in processing the fifth step of Moustakas' modified van Kaam method of analysis was to provide rich, textual descriptions of selected phenomena in the life world of the participants that connect with the experience of all in the group (see van Manen, 2016).

I developed individual textual descriptions as additional meanings driven by imaginative variation towards each participant's "essence" of a phenomenon. The following section outlines the textural descriptions I developed for each participant's responses. Bracketing my interpretations and assumptions allowed me to present the phenomenon for what it meant to the participants. Bracketing in an interpretivist framework and bringing it together with the concepts of reflection and reflexivity are widely regarded as significant criteria for establishing reliable results in any rigorous qualitative study (Dörfler & Stierand, 2020). Each participant's experience is considered

separately in the following individual textual descriptions, and a description of the phenomenon's meanings and essences is provided (see Moustakas, 1994).

Textual Description of Participant 1

Administrative leaders recognize the importance of building compacity by teachers and staff, which focuses on effectively employing different skillsets to use ICT platforms. "I would say one of the biggest administrative skills is the ability to really just collaborate and work with people from across the organization." Communication becomes a key element to facilitate teamwork with "other administrators, teachers and students, and really anyone in the district ecosystem." One of the roles of administrative leaders focuses on is providing insights into the decision-making process and instituting the best practices. "You know, you can be incredibly talented, and have incredible resources from a technological perspective but if you can't build a common vision about where you want to go, as a district, as a group." One of the critical factors that enhances the integration of ICT platforms. "...is clarity of vision, at all levels of the organization to where people, you know, where they want to go either at a grade level, at individual classroom or at the district level."

Textual Description of Participant 2

The integration of ICT platforms improves students' learning and facilitates the growth of teachers. "I have to lead my department, so on Fridays we meet and we run our PLC (professional learning communities) teams and plans." There are different strategies for disseminating ICT platforms due to the pandemic. "...the only real difference (before the pandemic) is there's more technology being used than, like before you had blend. I

had a blended classroom where I had the Chromebooks and also, we did things outside of technology.” *This blended approach (combination of traditional and computer strategies) to ICT platforms requires a new approach to learning management.* “The learning management? Well, it’s, to me it’s like, a binder or a notebook where I keep my lesson plans, but the kids have access to it. And then they submit their assignments there, so it’s...it’s a way to organize a teacher and the class and the students and the grades and everything are all there in one spot.” *Building support among administrators and teachers starts with establishing a clear understanding of common problems. However,* “the biggest, I think, problem or obstacle is a lack of understanding how things work by people who’ve been in management positions, like, administrative positions for long times.”

Textual Description of Participant 3

For teachers to be creative and innovative, they must create a culture of learning that promotes the efficient use of ICT platforms. How can administrative leaders promote cohesive ICT platforms when “we have some systems that do not match. There’s a mismatch.” Administrator leaders recognize a need to systematically maintain, organize, and develop digital literacy and competency. “And I really think that everybody, from the students to the faculty, really don’t have that competency, the digital competency, to be able to really leverage the possibilities of an online environment or a blended environment or an environment that deals withcuration.” *Once administrator leaders develop curation to blend learning in smart schools, taxonomies become a means of disseminating information and practices in a technological environment.* “I don’t think

that the schools really understand that they need a taxonomy, a general taxonomy for all of the subjects that they are teaching and then have like these curation pods for each one of them..." *Taxonomy can provide a clear path to knowledge management and knowledge sharing, facilitating a greater flow of information.* "I don't think that a lot of folks really understand the bigger role of knowledge management in the organization of a technologically-advanced school."

Textual Description of Participant 4

Most teachers embrace technological innovation and creativity in the smart school classrooms. However, "there's several constraints. One, you just have the bureaucracy of the State. They have several mandates that we have to follow. That can sometimes, and this is just a frustration with many of my teachers, things that we know are or what we believe is best for students and what we've seen work..." *Having experienced and skilled teachers allow the administrative leaders to work around these constraints.* "I think it goes back to trusting your staff, to basically have them workshop the problems, whether it be technology or anything else. They're the, especially the teachers ...they are ones that are going to mostly deal with those problems on the front lines. So have them come up with a solution." *That essential trust and communication allow administrative leaders to encourage teachers and staff to accept more responsibility for students' personalized learning in the classroom.* "I think it kind of trust goes back to making sure that, to put that technology in the hands of the teachers, the faculty, and making sure that they can use it and just willing to accept mistakes, that

mistakes will happen. And that's just like we tell our students, that's an opportunity to learn."

Textual Description of Participant 5

Administrative leaders believe that *the teacher's awareness is the key to successfully integrating ICT platforms. Further, they believe that* "creating awareness so that the people will know exactly what they are doing. If that awareness is not there, then there will not be any integration." *Through this awareness, teachers learn to augment their training, improve on their ICT skills, and enhance their practices. Administrative leaders believe this awareness can lead to* "...some of the best practice, of course, it still goes back to enforcing them all by embracing the technology through training." *Constructive feedback can empower teachers to develop their ICT skills further.* "...based on the feedback that you get, then you will be able to tweak your actions, what you need to do in order to improve the process. So, feedback is very important."

Textual Description of Participant 6

The key to assessing the effectiveness of ICT platforms is understanding how the functional technology departments contribute to the overall organizational operations. We had "a fully functional technology department. You had different small learning groups or small learning schools. They call them small learning schools, and they each had their own fully Chromebooks, laptops, teacher projector boards, and anything that they needed that dealt with technology and resources worked for student achievement and student ambassador." *Administrative leaders view the value creation of ICT platforms as an interlocking system of teachers, staff, and stakeholders that links key resources with*

organizational requirements. “I can’t speak for other institutions; however, at my particular institution and there were two of the main things that probably stick out more than anything else is the bureaucratic timing and implementation of the largest tech programs. Probably the two largest pushbacks that most educational institutional face on a daily basis. The paperwork or the paper trail is so long to get signatures and to mention operating these Zoom meetings or whatever you may have, it’s just time-consuming.” *In doing so, administrative leaders need to have good listening skills, collaboration skills, and management skills to evaluate the impact of different systems on organizational performance.* “I think it’s imperative that you not only have collaboration, but you evaluate other motivational techniques and learning strategies that’s already been implemented in your building. Technology is only one aspect of the learning process. There are other inspirational, motivational tactics and strategies and tools...”

Textual Description of Participant 7

Having access to computers, iPads, and laptops can eliminate barriers and remove learning obstacles in the classroom. “Well, I think one of the things is that the students, all students, should have the necessary tools to work with. For example, if this is a tech school, they need to have access to Chromebooks, to the computer, laptops, iPads, whatever. First of all, they need to have, every student needs to have some kind of computer and internet access...” *One of the benefits of tech schools is that integrating ICT platforms encourages critical thinking skills in a student-centered learning environment.* “So, one of the things I think is most important, and it’s very basic, very simple, but very necessary, is that we need to have suitable spaces (physical and virtual) to teach or for the

students to learn. You need to have the proper spaces, number one. And then, the other thing I think you need is, like I said earlier, you need to have knowledge.” *Having knowledgeable teachers can facilitate student-centered learning by providing access to information and collaborative activities in the classroom.* “ I think that the teacher needs to be very knowledgeable of the technology that they’re using. They need to be familiar with a Chromebook. They need to be familiar with the computer or whatever they’re using because these students using this technology every day. So, you need to be very knowledgeable about technology. And the other thing you need to have been a good IT person in the building that is accessible, so when you have a problem or whatever, they can address it in a timely manner so that you can continue to teach.” *Administrative leaders believe that having access to ICT platforms can bridge the gap between student learning and teachers’ practices.* “ We’ve moved up from blackboards and whiteboards to smart boards. And these smart boards are just what they say they are. They’re very versatile. And so, it helps with visual; it helps with auditory. So yeah, so students who might’ve forgotten their books or whatever can still participate because they can follow along with a smart board.”

Composite Textual Description

Once I completed the individual textual descriptions of the seven participant’s significant statements, I developed a table of all the themes formed from participants’ responses. Administrative leaders were dedicated to supporting teachers’ efficacies, student-centered learning, and improving the infrastructure in smart schools. Highly recurring themes included: (a) lead by example, (b) establish a shared vision with school

system stakeholders, (c) building team cohesion and trust to accomplish a goal, (d) support teachers' identities for building ICT, (e) support students' identities for building ICT, (f) staying connected and abreast of new technology, (g) teach critical thinking skills by example, (h) lead as a good listener and great doer, (i) lead to succeed ICT program systems integration, and (j) support integration of an ICT ecosystem across the school system.

Moderately recurring themes that remained secondary to the final results of the thematic analysis include a) effective communications, b) growing bureaucracy, c) blended learning, d) role of decision-making, e) learning obstacles, d) teacher' responsibilities, and e) problem-solving skills. Representative themes from individual participants' responses are outlined in Table 4.

Table 5

Representative Themes From Participants' Responses

Participant	Themes
1	Being a facilitator to establish a clear vision of ICT platform integration among teachers, staff, and students across the organization's ecosystem.
2	Becoming a key player by leading by example and building a cohesive organization.
3	Being supportive of teachers' and students' by shaping their ICT identities by exploring their digital competencies.
4	Being able to establish rapport with teachers and staff and facilitate team cohesion and trust to accomplish the goals of ICT platforms integration.
5	Becoming an advocate of staying abreast of new technology and supporting ICT platform integration by training the teachers on the latest technological innovations.
6	Being a facilitator of student-centered learning encourages teachers and students to implement ICT integration actively.
7	Becoming a good listener and doer to teach critical thinking skills to students in an advanced technology program.

Bracketing, Imaginative Variation and Constructing Meaning

I reflected on my preconceived notions about the social phenomenon of best practices in successfully integrating ICT platforms in K-12 smart schools and bracketed them to construct individual participants' structural meanings (see Dörfler & Stierand, 2020; Moustakas, 1994). Next, I configured the themes into structural descriptions of the individual participant's experiences using imaginative variation and eliminating quotes of individual participants that were not relevant to participants' lived experiences with *building digital capacity in smart schools* and *leading ICT platforms integration in smart schools*.

Individual Structural Descriptions

By applying imaginative variation, I identified potential meanings of the participant's individual experiences (see Moustakas, 1994). I practiced imaginative variation in search of the "how" of the phenomenon studied as a unique method to explore individuals' identities in organizations (Gill, 2020). Husserl (1962) highlighted imaginative variation as the defining element of an experience, as only those invariants to the phenomenon's experience will not change through the variation. Imaginative variation is a stage to explicate the structures of experience more distinctively and for the researcher to imaginatively alter the phenomenon under study to view it from alternative perspectives. (Turley et al., 2016). The individual structural descriptions that follow reveal the hidden meanings and dynamics of each participant's lived experiences of being an administrative leader who has developed best practices to lead a successful integration of ICT platforms and in K-12 smart schools.

Structural Description of Participant 1. Building capacity focuses on developing key relationships, establishing trust between teachers, and creating a sense of community. Participant 1 experienced the personalized learning of individual students, but student-centered learning is not enough. Also, participant 1 believes that the whole school must develop a culture of innovative and creative learning by investing in technologically advanced smart schools. The top-down approach of managing schools, training teachers, and focusing on student achievement has not worked in the past. Addressing those limitations (i.e., budget constraints, adequate resources, and training qualified teachers) will not sustain the tech schools of the future. Unless smart schools develop the compacity for teachers to creatively listen, develop empathy, and take the initiative to institute effective changes; therefore, the reforms in education will have little effect on sustaining long-term change.

Structural Description of Participant 2. Participant 2 experienced that school social organizations influence and motivated those administrators. This person describes the school as a place of learning and discovery, in a collaborative manner with other students of the world around them. Participant 2 advocates for students to become active in their learning process, engaging students to become more critical thinkers and problem solvers. Just as workers in a factory learn to collaborate and work in teams, participant 2 leads by example by leading a team of teachers and students to offer input in the decision-making process. Many traditional schools continue to embrace the old assembly line working in isolation and solitary conditions.

On the other hand, tech schools offer constant communication, clarification of ideas, and reviewing the project goals.

Although participant 2 is against too much reliance on technology, they experienced that technology is a productive tool but not a substitute for rigorous learning—an essential tool to enhance the learning process rather than a dependence on technology to solve every problem. Too much reliance on technology can stifle creativity and prohibit critical thinking in students. Participant 2 experienced stifled creativity of students can be attributed to giving iPad to children at a young age; this has resulted in the children thinking computers are a toy. Blended learning is the key to integrating ICT platforms in smart schools by combining laptops with workbooks and worksheets with iPads as a guideline to learning.

Structural Description of Participant 3. Today, the world of digital literacy and ICT platforms are intricately intertwined due to the evolving educational needs of society. Participant 3 experienced that students process information differently, but they also apply it creatively in the real world. For Participant 3, technology has facilitated students' imagination and creativity beyond textbooks. Although children acquire knowledge through different digital platforms such as YouTube, Facebook, Chromebooks, and other sources, books and articles offer students a deeper understanding of the facts.

Participant 3 is aware that the previous generations grew up reading novels, newspapers, and magazines, but the current generation process information faster, but not always with a clear understanding of the meaning behind literacy. Participant 3

experienced that students are taught to skim over the main parts and remember keywords without developing critical thinking skills. The importance of blending technology with traditional learning methods has contributed to digital literacy and competency in the classroom. Participant 3 believes that administrative leaders should create a taxonomy for each subject. Without establishing a taxonomy, teachers and students were limiting the various learning tools at their disposal. The technological tools have expanded the smart school learning experiences, but it does mean that books and articles cannot play a role in learning.

Structural Description of Participant 4. Since the pandemic's beginning, administrative leaders have considered different approaches to integrating and implementing ICT platforms. Participant 4 experienced the implementation of new online learning policies and the promotion of different remote learning programs. Technological tools such as Zoom, Chromebook, and LMS (learning management systems) provided different methods of distributing lesson plans in the classroom. Although, the means of communicating between administrative leaders, teachers, and students did not change due to internal (emails and newsletters) methods and various school' dashboards (external).

Regardless of the bureaucratic and budget constraints, administrative leaders learned to adapt to various methods of ICT integration by trusting the teachers and facility to implement the best practices in the classrooms. Participant 4 stressed that having the right technological tools can seriously impact the delivery of some ICT platforms and the best practices throughout the schools. Before the pandemic, ICT platforms were forged by developing meaningful relationships with teachers, students,

and parents. Participant 4 experienced that technological tools can be helpful to establish new relationships and build a new sense of community.

Structural Description of Participant 5. Presently, students come to the smart classroom with several digital devices such as computers, smartphones, and iPads. Teachers are putting lesson plans, homework assignments, and group projects online. Administrative leaders load forms online, store templates in the clouds, and stream operations over the school's internet. Participant 5 experienced the need to make teachers aware of the importance of ICT integration and teaching students basic computer skills. In doing so, administrative leaders encouraged teachers to familiarize themselves with the challenges of ICT literacies.

One of the main things that stood out in participant 5 was the value of communicating the importance of incorporating various literacies through ICT integration. Participant 5 experienced that digital literacy and competencies represent a means to communicate information on a broader scale in the digital age. In order to understand the use of these new technologies and the implementation of ICT platforms, participant 5 mentions the role of feedback in shaping ideas and problem-solving. Administrative leaders are constantly rethinking the role of technology in integrating ICT platforms by enhancing training, optimizing resources, and troubleshooting key issues to transform education in the classroom.

Structural Description of Participant 6. The integration of ICT platforms has substantially impacted both high schools and K-12 programs. Participant 6 experiences demonstrated that individualized learning, interactive curriculum, and the best practices

strengthen the relationship of ICT integration between students and teachers. Further, participant 6 believes that creating an interactive environment supports ICT integration and enhances real-time experiences, especially student attendance, grades, and assignments. This interactive process improved communication and collaboration between teachers, students, and parents.

Participant 6 experienced that teachers, faculty, and staff must use the best practices effectively for teachers, faculty, and staff to reap the benefits of technology. Further, the stakeholders such as the teachers, faculty, and parents must work together to ensure that teachers are adequately trained to teach technology and that students have the necessary skills sets to implement the best practices. Participant 6 experienced the importance of properly technical training teachers and identifying the essential skillsets for successful student achievement.

Structural Description of Participant 7. Having gotten through the first year of the pandemic, administrative leaders learned from the past year's mistakes. They tried to prepare in several ways to integrate remote learning or blended learning into different classroom environments. Participant 7 experienced that she prepared to address the challenges of teaching in an online environment as an administrative leader. Participant 7 shared the difficulty for some students to learn during the pandemic because they did not have access to computers, laptops, iPad, or the internet. Administrative leaders began to address these concerns to ensure that schools had adequate funding to buy laptops, iPads, computers, and other digital devices. Participant 7 experienced the disparities in low-

income schools but felt that administrative leaders were working hard to close the gap between schools with inadequate resources and schools with abundant equipment.

Participant 7 immersed herself in maximizing the classroom's technological tools before the pandemic affected schools. Even though the pandemic forced schools to computerize their curriculums into every class, the results did not fit into every learning environment. Participant 7 shared experiences with administrative leaders that did not consider having enough trained teachers or laptops or iPad for each student to learn in a remote environment. Participant 7 believes that there were two lessons that administrative leaders could learn from the pandemic experience a) invest in enough time to develop short and long-term goals and b) give teachers enough time to get accumulated for the transition between remote learning and blended learning environments.

Synthesized Textural and Structural Description

In the final step of Moustakas' modified van Kaam data analysis process, I once again used imaginative variation to construct a composite structural description, integrating all the individual participant's structural descriptions into one comprehensive, universal structural description of the meanings of the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. This composite textual-structural description provides the meanings and essences of the lived experiences of the entire group of participants as a whole (Moustakas, 1994).

The top-down approach to managing school systems was limited to using digital devices in routine operations (i.e., attendance, grades, quizzes, etc.), but this approach has

failed to teach students critical learning skills. Despite the bureaucratic hurdles and enormous paper trails, administrative leaders have learned to adapt and overcome these obstacles by delegating tasks to teachers and other faculty members. Administrative leaders recognize that school systems are dynamic and vibrant social organizations with the capacity to change. However, administrative leaders and teachers have placed too much emphasis on technology to solve every problem. Unless administrative leaders build a culture of innovation and creativity, long-term change will have little effect.

In this sense, administrative leaders believe that properly trained teachers and necessary resources are essential to facilitating change in the classroom. Also, administrative leaders believe that changing a beliefs system on behalf of teachers requires awareness, communication, and competency to expedite ICT platforms integration. Before the pandemic, smart schools emphasized personalized learning and collaboration among students and teachers to promote specific learning outcomes. However, the pandemic has changed how the teacher disseminated the lesson plans and how the ICT platforms delivered the information.

Through the use of digital platforms such as Chromebook, Canvas, Zoom, and LMS (learning management systems) were founded streaming in every classroom. As administrative leaders and teachers learned to adapt to an online format, the students became bored and fatigued with the Zoom and other digital formats. Administrative leaders immediately recognized that having the right technological tools impacted the delivery system and the learning outcomes. Digital literacy and competencies allowed

administrative leaders to communicate the goals and objectives of ICT platforms through the effective use of best practices in the classroom.

Administrative leaders begin to address these new online learning challenges by adapting or combining digital devices and traditional learning into a blended learning format. Blended learning does not explore social science in isolation or struggle with a math problem through a remote learning site. Instead, blended learning combines the best aspects of smart schools (i.e., personalized learning, group discussions, interactive videos, etc.) with traditional textbook learning. It is about working together to solve a problem or addressing the needs of the students through small group discussions and exploring a concept through the use of these different ICT platforms. The blended model offers administrative leaders the options of some students learning in classroom settings, like a traditional school, and others learning remotely within a smart school.

Administrative leaders contend that some teachers are comfortable using new technologies or ICT platforms. While other teachers were overwhelmed every time, they turned on the computer or logon to Chromebook. Since most tech schools have several tech activities simultaneously, designing programs, learning new software, and navigating new dashboards can be challenging. The key is minimizing the transition from specific online formats to traditional classroom learning. As administrative leaders are coming to grip this issue, essential lessons evolved organically throughout the school systems due to the pandemic. Administrative leaders were learning how to a) be creative in disseminating ICT platforms in an online environment, b) understand the different stages of learning by creating an interactive taxonomy, c) discarding irrelevant

information. To reap the benefits of incorporating ICT platforms, administrative leaders and teachers must balance relevant lesson plans and effective learning practices.

This balance, especially during the pandemic, between relevant lesson plans and best practices has been difficult for ICT platforms integration in smart school environments. One of the primary reasons why learning management systems (LMS) and student information systems (SIS) have been problematic in the various school system is because the two systems are not compatible with the student's needs. In other words, the two systems cannot support the smart school workload or the flexible lesson plans. Administrative leaders feel that incompatible systems cost time and money when they do not produce the outcomes necessary for students to learn in an interactive learning environment.

The pandemic has demonstrated a critical need for the ICT platforms integration and a systematic approach to personal learning programs. Administrative leaders realize that it is impossible to be productive and resourceful in the classroom without integrating ICT platforms in a smart school environment. Sometimes, the integration of new software or learning programs may take months or even years to work out the bugs or problems in the school systems. In addition, administrative leaders must find and train qualified teachers to organize and implement various learning management programs across ecosystems. Administrative leaders understand the importance of maintaining a supportive ecosystem that allows for clarity and sharing a shared vision throughout the organization.

Evidence of Trustworthiness

The issue of trustworthiness is based on the premise that the researcher makes every effort to ensure the research study's validity, objectivity, credibility, transferability, dependability, and confirmability. In doing so, the researcher must consider their personal bias to ensure the study's credibility by establishing a criterion to maintain the accuracy of the findings and results (Merriam & Tisdell, 2015). This process of trustworthiness entails reviewing different data sources to understand the phenomenon and establish consistency in the data collection and analysis.

Credibility

In this transcendental phenomenological study, the researcher took several steps to establish credibility and reliability. Guba and Lincoln (1989) stressed that credibility refers to whether the participants' experiences were in alignment with the researcher's accurate representation of the phenomenon. I used several different strategies to determine the creditability of the study, such as a field test, personalized notes, and a literature review. The field test involved two university professors who provided an insightful and in-depth review of the semi-structured questions, participants' protocols, and the interview process.

The participants were drawn from the LinkedIn database consisting of administrative leaders involved in tech programs from across the country. The study sample included participants from various backgrounds such as a superintendent, a principal, a vice-principal, IT faculty, technical coordinator, IT director, and IT coordinator. The data collected resulted in rich and diverse responses to the interview

questions involving the participants' lived experiences. As the researcher reviewed the participants' responses and noted each person's experiences, ten major and seven moderate themes emerged from the data. These themes were derived from the codes assigned to the data that corresponded with the participants' views, actions, or experiences. In addition, saturation was reached after the fourth participant's interview when the information started to be repetitive and duplicative when no new information emerged from the data.

In this case, the interview questions were the primary means of collecting data for this transcendental phenomenological study. The interview questions were developed mainly from the literature review. Therefore, the research question evolved out of the literature review: *What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?* In this sense, the ten interview questions were framed from the literature review to generate credible data. Further, to ensure credibility, the researcher used several data sources or triangulation, such as descriptive accounts, audio recordings, and member checking to validate each participant's lived experiences.

Transferability

In qualitative research, the aim is not to form any generalities about the research, but the focus is on valuable lessons obtained from the data (Patton, 2002). The rich and thick descriptive interviews provided the researcher with each administrative leader's shared or everyday experiences regarding developing policies or implementing ICT platforms. The detailed account of administrative leaders' beliefs and perceptions

illustrated that the challenges of managing and operating school systems were just as diverse as the various leadership positions. The research study considered the administrative leaders' intuitive capacity to build short- or long-term change by using ICT platforms to improve student learning.

Dependability

Dependability is commonly referred to as the process or procedures to collect, analyze, and process data (Guba & Lincoln, 1989). In this particular transcendental phenomenological study, I triangulated various data sources (i.e., participants transcripts, audio recordings, and my research journal) to produce an audit trail. I kept detailed notes of each participant's interviews, debriefing sessions, field study notes, and member checking to ensure the alignment of the various data sources. After each participant's interview, I modified the interview process to ensure a smooth transition from one question to the next. In some cases, I let the participants elaborate or expand on a particular subject to flesh out more details of the question. Establishing dependability by the researcher maintains consistency and minimizes any bias in collecting or processing data.

Confirmability

Confirmability conveys the idea of being objective in a quantitative or qualitative research study (Guba & Lincoln, 1989). The implication is that the research process focuses on conducting interviews without bias or the researcher's opinions. Instead, the research findings were the results of the participants' specific facts or authentic experiences. The elimination of leading questions based on my personal experiences was

withdrawn or disregarded to ensure the objectivity of the interviews. In some cases, the researcher would clarify or explain each question presented to the participant in detail. Clarifying specific questions is because administrative leaders used the same terminology to describe different situations. Lastly, my personal journal allowed me to stay focused and maintain my objectivity by letting the participants describe the lived experiences in their own words,

Results

I developed the research question for this study based on the identified literature gap, the purpose of the study, and the qualitative, transcendental phenomenological research design. Administrative leaders face the challenge of reaping the benefits of ICT platforms and simultaneously addressing their outdated beliefs and outmoded operational systems regarding integrating ICT platforms (Håkansson Lindqvist, 2019). Thus, there remains a gap in the literature regarding the administrative leaders' outmoded beliefs regarding implementing the best practices efficiently into ICT platforms (Marshall & Taylor, 2017; Polly et al., 2021b). The purpose of this qualitative, transcendental phenomenological study is to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. The central research question for this transcendental, phenomenological study was *What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?*

The study participants shared their lived experiences in response to the interview questions reflecting on the challenges and obstacles administrative leaders face in

meeting the desired student learning outcomes and efficient use of ICT platforms in K-12 programs (see Ryoo et al., 2021). Many administrative leaders in school systems still have outdated belief systems on leading a team through an IT transition and anachronistic operational methods concerning integrating ICT platforms (Carver, 2016; Polly et al., 2021b) and have failed to manage resources, implement the best practices, and effectively integrate ICT platforms into K-12 programs (Ali et al., 2017; Gonzales, 2020).

The responses to interview questions brought forth administrative leaders lived experiences with successful journeys with ICT integration in smart schools, lessons learned, and enduring best practices. Themes were formulated based on the participant's responses were categorized into the following ten themes based on the coding and analysis results.

Lead By Example

The formation of this theme is based on participants' responses to interview question seven. The participants described their lived experiences and factors that contributed to implementing ICT platforms. Participant two stated: *I was tech coordinator in the building for a while, I was data coordinator in the building for a while a working with technology. I've taught training, you've got to be open and honest sometimes...* Furthermore, participant 5 argued, *"some of the old people, the staff that they have now staff need to be retrained. So, because of the ever-changing technology, the staff needs to be retrained to acquaint themselves with the new technology."* Also, participant seven reiterated that, *"The system is outdated, and you need to come into the 21st century and teach these students with what they're familiar with, not what you're*

familiar with. Participants also described that one of the reasons administrative leaders use the lead by example methods in smart school is because they excel at engaging teachers and students in the learning process.

Establish a Shared Vision With School System Stakeholders

The formation of this theme is based on participants' responses to interview question two. The participants described their lived experiences and conditions that contributed to the success of ICT platforms. Participant one stated, "*you can be incredibly talented and have incredibly resources from a technological perspective, but if you cannot build a common vision on where you want to go as a district or group...that's not going to do very well for you.*" Also, participant three stated, "*Well, first of all, we have a strategy session with not just with the administrators of our school, but our whole school district.*" Further, participant five stated, "*You need to acquaint yourself with the technology with which you are using and how you need to communicate so that the other party will hear you and understand you.*" Further, participant six noted, "*You have to create that environment. How do you create it? You create it through staff meetings, you create through technology training, you created through student seminar and then parent's technology.*" If one of the goals of administrative leaders is to prepare students to secure jobs in the future, then administrative leaders must establish a common vision for establishing ICT platforms.

Building Team Cohesion and Trust to Accomplish a Goal

The formation of this theme is based on participants' responses to interview question two. The participants described their lived experiences regarding team building

and collaborative learning. Participant two stated, *“I work with a lot of stubborn teachers who don’t want to change the way they’ve done things, will just put the iPad or the Air book or the whatever they’re using on a shelf. Before the pandemic, some of our teachers hadn’t even logged into their Chromebook or their iPad.”* In addition, participant three stated, *“I’m going to have to go back to the digital competency discussion because I think that if you have a team that lacks the will and the digital competency, it will be very difficult no matter what you do...”* Further, participant four responded, *“That’s one of the hardest things is making sure that the team that you have, that they can work together collaboratively. And what we try to offer when budget and time allows, of course this year, a lot of these roles have been throw out the window due to COVID, but allowing for team building and collaboration, sometimes outside the school.”* Finally, participant six noted, *“it’s imperative that schools come up to speed in order to equip these students to move on to the next level.”* In the aftermath of the pandemic, administrative leaders also described how they have begun to address the challenges of teacher training, adequate iPads, and securing resources in a remote learning environment.

Support Teachers’ Identities for Building ICT

The formation of this theme is based on participants’ responses to interview question five. The participants described their lived experiences and how they addressed the root problems within their organization. Participant one responded by saying that *“we try to gather feedback, it is an iterative approach...obviously with COVID we had to roll out some changes, as quickly as possible, but for the most part, it can take years. It doesn’t have to take years.”*

Participant two reiterated, “the one of the things that I’m learning as a result of the pandemic is that a lot of schools were not prepared to actually go online or actually, use the iPads or, laptops or even phones for that matter.” Participant three noted that, “See, everybody’s been kind of independent doing their own thing for all this time and they really haven’t had to collaborate at all. And so, this is a really big shift. So, you start small, you don’t do it all at once. So, you might maybe you again start with a taxonomy.” Participant four suggested, “Giving teachers the opportunity to work outside the classroom...but allowing for team building and collaboration, sometimes outside the school or during school hours.”

Participant five argued, *“I believe it’s just the awareness, creating awareness so that the people will know exactly what they are doing. If that awareness is not there, then there will not be, as I said, I still go back to people being reluctant to embrace it.”*

Participant six stated, *“So that’s what administrators do most, they monitor to make sure that the procedures that are already voted on set up, put in place that teachers are following those protocols and making sure that they’re inside the classroom monitoring instruction to make sure now that the students are following those protocol.”* Finally, participant seven stated, *“also telling other teachers what you’re doing. And maybe get with other teachers and say, How did you address this problem? And they might come up with the solutions that you didn’t think of...”* The participant also described that one of the mainstays of smart schools was the ability to adapt to problems in a succinct and timely manner.

Support Students' Identities for Building ICT

The formation of this theme is based on participants' responses to interview question five. The participants described their lived experiences and how their organization differentiated best practices in a tech school vs. a traditional school. Participant one stated, *"I think technology has helped a lot in giving each student kind of their own virtual space to explore and engage in their learning. It certainly makes it easier for a teacher to assign different opportunities to each student... being its student centered. I think also it allows kind of open sense of exploration. Students have access to the internet and all sorts of resources. So, technology really allows a student to explore on their own and create at a, at a very high level..."*

Also, participant two explained the importance of maintaining a balance between the effective use of ICT platforms and traditional learning through textbooks. She stated, *"I think it's both blend of technology and textbooks. You need to have a nice balance. I think you can overuse technology. Four years ago, I got a Chromebooks in my classroom. I was told how to train others and I was told that's how we want you to teach the students. But they didn't know a lot of the kids didn't have technology at home, so everything had to be done in the classroom."*

Participant three reiterated that *"They really need to understand the environment that they're going into that takes time. And that takes desire on the part of and curiosity on the part the teacher and the administrators."* Participant four described what blending learning should focus on when it was being applied in the classroom setting. He stated, *"The last time that we really did that was when we first started introducing the*

Chromebooks. I've got a one-to-one school and it was basically making sure that yes, you have this technology, and yes, it's okay to use some of the programs that are out there, that we can purchase at the school level that are like drill and kill activities. But making sure that within the lesson plans and when an administrator comes into the room, you don't have to be doing it right then, but have some evidence that the students have been creating something rather than just reviewing."

Further, participant six stated that *"Every school situation is going to be different. Every school environment is different. Every school's parents are different. So, what you may need may differ from what the overall traditional schools may need or what other technology schools may need."* Finally, participant seven stated, *"When I was taking my classes for administration, they were telling me, don't talk to the children the whole period. What you need to do is talk to the children for... I'll say, if it's a 45-minute class, maybe talk to them for 15 minutes."* Participants also described how digital literacy and competency is more than learning a new software program or reading words in a book; it is about the students learning to comprehend and understand information in a fast-paced technological environment.

Staying Connected and Abreast of New Technology

The formation of this theme is based on participants' responses to interview question eight. The participants described their lived experiences and conditions that led to best practices in smart schools. Participant one stated, *"I mean, I think a big part of it is just staying in touch with what the new technology. So, building awareness around that. I also think clarity of vision at all levels of the organization..."* *"Sure. Traditional*

environment, I think it's very top down ...and this is coming from often either site level administration or district level, or sometimes even the state level.... Where, at a tech school, you're probably already going to have people that have some knowledge on how to use that technology and they will develop the best practices on how to use it."

Further, participant five stated, *"There is that resistance to change... there is resistance to any long term change. People would like to do things that they had been doing before rather than change. So, the only way that you will have them is to create an atmosphere whereby they will enjoy doing what they are doing.* Further, participant seven stated, *"This is what I learned. First of all, you definitely need to be knowledgeable. I know I keep saying that, but you definitely need to know your subject area and you also need to have some skills."* Also, the participants described their experiences when the best practices were not achieved; the organization was reluctant to pursue long-term change.

Teach Critical Thinking Skills by Example

The formation of this theme is based on participants' responses to interview question three. The participants described their lived experiences in building an infrastructure that emphasized critical thinking skills and best practices. Participant one stated, *'Yeah, when I say, again, best practices, and it's not even specifically about technology, but it's about terms like collaboration, empathy, and active engagement. And whether it's technology or some other resource...being open and empathetic in that way, I think really allows us... to get to the best answers when we're problem solving. And also, you know, as far as students are learning, engaging the students, finding out what*

their interests are. Sometimes that involves technology, and sometimes it doesn't, but the technology is there to help them."

Also, participant two stated, *"I gauge things that I do in my classroom year to year with technology based on what my students tell me...so we're in the pandemic; teachers were making videos and we're making them watch videos; I had a couple students say to me, 'Whatever we're doing, please don't make us watch another video.' And I hadn't made them watch any videos. I had to ask them, 'What are you talking about?' 'Oh, my science teacher makes me watch in instructional video, my math teacher makes me watch a video...' so they're burned out from watching videos. They don't learn to critically think or challenge ideas."*

Participant three argued that administrative leaders can make a difference, but it depends on their understanding of managing change and addressing problems in the classroom. She stated, *"Well, again, I think that in a traditional school, you wouldn't have project-based learning. That's a best practice for us. It's aided by technology because we teach students how to do critical thinking and critical reading early so that, they are able to improve their decision-making even as young children."*

Participant six noted that *"You're making sure that that conversation isn't just about an everyday conversation and an everyday meeting, it's one of those entities inside everybody's agenda. So, you always have to talk about the ITech part of it. You always have to talk about the technology process. What are the assignments that you are assigning your students to make sure that they are enlightened, that they're inputting, that they're making sure that critical thinking skills are being taught and that process is*

happening throughout every level. You've got to make sure you're monitoring lesson plans."

Finally, participant seven stated, *"but you need to give them the opportunity to utilize what they learned. And then the other thing is, I just said it, the usage part. So, you have to engage them, you got to let them use it, and you have to be knowledgeable as well, so you can let them know whether or not they're doing it right or wrong, or they're close to it."* Administrative leaders address new day-to-day challenges. Participant also described that there is a greater need to bring together faculty, teachers, and parents to develop a comprehensive strategy for change that meets the needs of students in fast-paced learning environments.

Lead as a Good Listener and Great Doer

The formation of this theme is based on participants' responses to interview question four. The participants described their lived experiences overcoming organizational constraints and obstacles. Participant one stated, *"You know, I've spent time talking with our students about what issue that would be helpful for them, especially in terms of technology, it has been really helpful to get their feedback. You know, they express a strong interest in having a stable infrastructure, especially when they've experienced... wireless blackouts not working as well as they'd wanted in some cases, a number of years ago. Also, I just want to know what they're inspired and excited about..."*

Participant three described her experiences of teaching technology and the limitations of virtual classrooms in a pandemic by saying, *"I kind of was prepared*

because I had been teaching using the technology. But I had went from full technology to blended and then pandemic with full technology...And I still feel like I'm missing that part where I can take the time and say, 'Put that iPad down and let's look and do something together with our hands.' Yeah, I would say that talking with all my colleagues... we're wanting to go back to normal where we could blend technology... we love that the kids have it, but we want to be able to have them open a book once in a while, too!"

Further, participant three stated, *"...it isn't about presenting on the screen, meaning that you do like one or two slides, and then everyone has activities to do through the collaboration. And we find that the more engaged, instead of not just listening and watching and the more that they have things to do, and the more you use the whiteboard function in Zoom, and all these other things, there is more engagement. Or if you break out into small groups and then have people pick one person and then provide that breakout update when collaborating with the educators and administration."* Finally, participant four described his experiences with just reviewing a students' work by stating, *"The reviewing part is great, but make sure that there's some sort of collaboration, creative thinking, something like that. You've got evidence of that. You may not be doing that right at that moment but you have some point in the recent past."* Also, participants described how administrative leaders recognized that listening to students and getting feedback from teachers establishes supportive relationships that lend itself to building strong learning communities.

Succeeding ICT Program and Practices in Systems Integration

The formation of this theme is based on participants' responses to interview questions two and ten. The participants described their lived experiences regarding the importance of integrating technology and improving system operations to ensure students' ongoing learning. Participant one stated, *"And then looking for those connections there, like as the vision evolves, asking the question, what do we need to do as far as infrastructure to get there? Whenever we look at a new change we think about a few things, one is what kind of technology do we need to, to move that direction? What kind of support do we need as far as training, our teachers? And also, just the ongoing question of, can we support this new technology if we roll it out."*

Participant three stated, *"Well buy into the vision and they have to have the competencies themselves. It's not just a computer. It's not just that it has information in it. There's a lot of things that you're asked to do that's kind of ancillary in a way. So, if you really understood how to use all of the systems and the potential of those systems, and allowing for faculty to explore together, is very, very important to getting that commitment, that intrinsic commitment."* Participant four also described how technology must be tested and evaluated before integrating into the overall systems. He stated that *"I think it kind of just goes back to making sure that, to put that technology in the hands of the teachers, the faculty, and making sure that they can use it and just willing to accept mistakes, that mistakes will happen. And that's just like we tell our students, that's an opportunity to learn."* Participant five described the timeframe to introduce new software or programs into the system. He said, *"...they continue to give them orientation, on the*

new technology that they want them to use. And then after a while you cut off using the old one and then in encouraging everybody to move on to the new platform and that's it. After a while you announce to them, you say, look, within so and so a time. I gave you two weeks, three weeks, after that you need to move on everybody. The office, the department will now move on to the new platform, which is the new technology. And then, so when that is done ...everybody have no option than to learn the technology."

Participant six stated, *"Technology is only one aspect of the learning process. There's other inspirational motivational tactics and strategies and tools ... everybody has to be trained on exactly the same thing that you train your teachers on your systems ...they're professionals and administrators are professionals...It's actually really one goal at the end of the day, you're looking for one outcome. The only outcome that could possibly be is for the student to be instructionally motivated... to move to the next level of instruction, so, they don't fall behind and they feel confident in what they're doing."*

Finally, participant seven stated, *"We have to also make the students more accountable for themselves and their learning, and stop making it just on the leaders, the teachers that's in the schools. So, I think one of the problems is you need to involve everybody concerned. And that can include the school nurse, that can include the social worker, that can include your case manager if the child has a special needs child. You need to include everybody."* The participants also described how the integration of ICT platforms can be a formidable task, but administrative leaders believe that technology has the potential to motivate and stimulate learning in students.

Support Integration of an ICT Ecosystem Across the School System

The formation of this theme is based on participants' responses to interview questions two and ten. The participants described their lived experiences regarding the importance of integrating technology and supporting collaboration across different organization sectors. Participant one stated, *"...some of the biggest administrative skills are the ability to really just collaborate and work with people from across the organization. Sometimes that's other administrators and other times... that's teachers and students, and really anyone in the, in the district ecosystem."* Further, participant one described the lived experience of promoting system integration by saying, *"then looking for those connections there, like as the vision evolves, asking the question, what do we need to do as far as infrastructure to get there? Whenever we look at a new change, we think about a few things one is what kind of technology do we need to, to move that direction?"*

Participant three described the lived experience of administrative leaders when technology in smart schools and student learning were not in alignment by stating, *"Well okay so one of the things that I would have to say is that we have some systems that do not match. There's a mismatch. They don't talk to one another. I think that that's a really big issue when it comes to that. And I think that the experience is... the frustration is that you don't have data to really help the departments know how well they're really doing, because if everything is so fragmented. Yeah, okay, so we are technological, but we have legacy systems and no one's really bothered to really integrate those. That hasn't been the consideration on the administrative level."*

Participant four also said, *“So what I typically do is offer it to those teachers that do have an interest in technology, the ones that are more willing to try new things. I’ll let them try it out. They learn it, and what I tell them is I want you to make the mistakes. Don’t feel bad if I come in and it’s, what you plan to do just is not working out. Make those mistakes, and that way we can all learn from it when we roll out the technology to the larger faculty...And they’re going to want a level of training versus some teachers are just give me the technology and let me figure it out myself.”*

Participant five described the need to upgrade systems and stay abreast of new technologies by stating, *“Today organizations, like mine, we always need to do some research in order to flow with the ever changing technology. Because if you still use the old technology, then you will not be able to communicate. And you will not be able to do business with the other parties. That’s why you need to upgrade. And then, so that you will be at par with, other parties so that you will be able to meet the competition or otherwise you wouldn’t be able to survive in today’s world because every day the technology is changing. This is a very dynamic world these days. The technology changes every day and we need to change accordingly in order to stay ahead of the competition.”*

Further, participant six stated, *“So what you may meet may differ from what the overall traditional schools may need or what other technology schools may need. Due to the fact, they may have a higher level of instructional education of insurance, meaning they have to take a test to get inside of their school. Their kids come more equipped to be prepared at this ITech level where you may not have that at your particular school. If you are expecting your schools to be an educational success due to the population that’s*

inside of it...but you have a closed mind...it will never, ever populate a successful ITech schools. You must have an open mind, an open door and before you know it you got kids walking out with a diploma.”

Finally, participant seven stated, “ I think technical schools engage the students more as I said earlier. A traditional school, just what it says, it’s traditional. Everybody had to sit in a classroom, everybody had to do this, this and this, and everybody doesn’t fit. They now learning that all students don’t learn the same. As we know, traditional schools are not the best schools for some students. Where the technical school, I don’t know if I can say it’s a better choice, but because we’re in a technological society, everything is tech, from some social media to your schools, paying your bills. So, I think a traditional school is not going to meet the needs of our children anymore, because it’s outdated.” Participants also described that when administrative leaders seek to modernize schools and integrate ICT platforms with existing systems, knowledge sharing is enhanced through the interacting learning process for students.

Summary

Data collection for this qualitative study was determined by the research question: *What are the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in smart schools?* In conducting data analysis via the modified Van Kaam method (Moustakas, 1994) and reviewing participant interview responses, I determined ten themes of *becoming* and *being* that describe the lived experiences of school administrative leaders. These themes include (a) lead by example, (b) establish a shared vision with school system stakeholders, (c) building team cohesion

and trust to accomplish a goal, (d) support teachers' identities for building ICT, (e) support students' identities for building ICT, (f) staying connected and abreast of new technology, (g) teach critical thinking skills by example, (h) lead as a good listener and great doer, (i) lead to succeed ICT program systems integration, and (j) support integration of an ICT ecosystem across the school system.

Smart schools are the instruments for building technologically innovative organizations within the k-12 school sector. This commitment to digital literacies and competencies focuses on investing in the technology and the training of teachers to motivate students in an innovative school environment. Administrative leaders in my study recognize that school systems are dynamic and vibrant social organizations with the capacity to change. Consequently, administrators and teachers have placed too much emphasis on technology to solve every problem. The participants were unanimous because school administrators guide their staff and students to develop a creative culture through technological innovations.

Administrative leaders lived experiences with ICT platforms integration in smart schools changed their belief systems on solving challenges through heightened awareness, communication, and competency to expedite ICT platform integration. The pandemic has changed how the teacher disseminated the lesson plans and how the ICT platforms delivered the information. Administrative leaders immediately recognized that having the right technological tools impacted the delivery system and the learning outcomes. Digital literacy and competencies allowed administrative leaders to

communicate the goals and objectives of ICT platforms through the effective use of best practices in the classroom.

As the study participants became the administrative leaders needed to initiate and run a smart school system, they came to grips with essential lessons evolving organically throughout the school systems due to the pandemic. Administrative leaders were learning how to a) be creative in disseminating ICT platforms in an online environment, b) understand the different stages of learning by creating an interactive taxonomy, c) discarding irrelevant information. To reap the benefits of incorporating ICT platforms, administrative leaders and teachers must balance relevant lesson plans and effective learning practices.

This balance, especially during the pandemic, between relevant lesson plans and best practices has been difficult in terms of ICT platforms integration in smart school environments. Administrative leaders experienced that the pandemic demonstrated a critical need for the ICT platforms integration and a systematic approach to personal learning programs. It is impossible to be productive and resourceful in the classroom without integrating ICT platforms in a smart school environment. Sometimes, the integration of new software or learning programs may take months or even years to work out the bugs or problems in the school systems. Administrative leaders' lived experiences with ICT platform integration in smart schools depended on their understanding of maintaining a supportive ecosystem that allows for clarity and a shared vision throughout the organization.

In Chapter 5, I discuss the interpretation of findings, limitations of the study, recommendations for further research, implications of this study, and my conclusions.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative, transcendental phenomenological study was to explore and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. I used a transcendental phenomenological approach to describe each participant's lived experiences with the phenomenon under study (see Moustakas, 1994). I collected data using an in-depth interview method in the informal, interactive process, using open-ended questions and engaged in the epoche process as Moustakas (1994) recommended, bracketing my prior knowledge on the topic and preconceived judgments.

The two concepts of building digital capacity in smart schools and ICT platforms integration in smart schools provided the conceptual framework of the study, and the study was theoretically grounded in social cognitive theory and system theory, providing a contextual basis to understand administrative leaders' lived experiences (Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). The results of my study were seen through this conceptual and theoretical lens that framed the interface between administrative leaders' lived experiences and the successful integration of ICT platforms and best practices in smart schools.

The social cognitive theory emphasizes that administrative leaders must have self-confidence and self-discipline to withstand adversity in an organization (Wood & Bandura, 1989). Administrative leaders' beliefs can affect overall performance and influence an organization (Bandura, 1995). In other words, administrative leaders can

motivate teachers and inspire students to learn by fostering an innovative environment. Thus, administrative leaders must articulate the vision and communicate the mission to teachers by systematically engaging in capacity building in the organization (Fullan & Hargreaves, 2014).

Through this empirical investigation, I supported my goal to advance research and address a literature gap on how administrative leaders in the K-12 school sector describe their lived experiences and contributed original qualitative data to the study's conceptual framework. The 10 themes that emerged from the completed modified van Kaam method were as follows: (a) lead by example, (b) establish a shared vision with school system stakeholders, (c) building team cohesion and trust to accomplish a goal, (d) support teachers' identities for building ICT, (e) support students' identities for building ICT, (f) staying connected and abreast of new technology, (g) teach critical thinking skills by example, (h) lead as a good listener and great doer, (i) lead to succeed ICT program systems integration, and (j) support integration of an ICT ecosystem across the school system.

Interpretation of the Findings

With findings from this transcendental phenomenological study, I confirmed existing scholarly knowledge, and each narrative of participants' lived experiences presented issues that confirmed findings outlined in the literature review. During the modified van Kaam data analysis method, I observed no discrepant data contradicting the themes emerging from my data analysis and theoretical suppositions presented within the conceptual framework. I compared and contrasted this study's findings with scholarly

research presented in the conceptual framework and my critical review of the scholarly literature (see Bandura, 1995; Clark & Boyer, 2016; Fullan & Hargreaves, 2014; Merriam & Grenier, 2019; Merriam & Tisdell, 2015; Moustakas, 1994; Ravitch & Riggan, 2017; van Kaam, 1966; van Manen, 2016).

For any phenomenology study, one must examine the available theories and discuss the body of knowledge about the topic. Qualitative research findings can indicate constructs that inform the development and extension of theory (Halkias & Neubert, 2020). Many theories contain phenomenological material or are built on certain intuitions that presume phenomenological understanding. Theories are often used in phenomenology to indicate whether the data collected and analyzed provide consistent results with previous findings and possibly include something different that no one has described before (Harkiolakis, 2017).

Upon the phenomenological reduction and elimination step, I developed the meaning of units extracted from significant statements and continued to eliminate any duplication or redundancies in the data. I created meaning units from each point recorded and then recategorized the data into two primary meaningful categories grounded in the study's conceptual framework: building digital capacity in smart schools and leading ICT platforms integration in smart schools. In this section, I provide evidence of how the study findings confirmed, aligned with, or defied existing knowledge found within theoretical literature addressing building digital capacity in smart schools and leading ICT platforms integration in smart schools.

Building Digital Capacity in Smart Schools.

Scholars have found a clear link between capacity building and administrative leaders' belief systems and policy making in large complex organizations. My study confirmed Harris et al.'s (2013), Hondale's (1981), and White's (2014) assumptions that capacity building provides a systematic approach to disseminating information and improving organizational infrastructures. The participants confirmed that administrative leaders are facilitators who influence every aspect of policy development and organizational structure.

My study results align with Fullan and Hargreaves's (2014) conclusions that administrative leaders articulate a vision and communicate the mission to teachers by systematically engaging in capacity building in an organization. The study results extend knowledge based on the works of Bryson (2018), Harris et al. (2013), Hondale (1981), White (2014), and Wood and Bandura (1989) on how capacity building promotes a climate of innovation through a systematic process of empowering teachers and motivating students (Blau & Shamir-Inbal, 2017). My results indicate that administrative leaders recognize that capacity building is essential in spearheading knowledge sharing, streamlining operations, and integrating digital technology to leverage resources. My study confirmed that administrative leaders view capacity building to align technology integration with best practices into a systematic process is necessary to sustain long-term growth.

Leading ICT Platforms Integration in Smart Schools

Scholars have found a clear link between student-centered learning and curriculum management that promotes ICT platforms integration in smart schools. My study confirms Keane et al.'s (2016) assumptions that student-centered learning, involving ICT platforms, is an integral part of integration through the curriculum management process that empowers teachers and motivates students. The participants confirmed that administrative leaders began to rethink the traditional curriculum design because it does not address the needs of students in an interactive environment. Study participants confirmed the shift away from obsolete curriculum designs and investment in collaborative integration of ICT platforms.

My study aligns with Hébert et al.'s (2021) conclusions that integrating ICT platforms addresses administrative leaders' poor decision-making skills and inadequate teacher training. The study results extend knowledge based on the works of Bandura (1995), Bawa (2021), Christen et al. (2018), Firoozi and Jokar (2017), Håkansson Lindqvist (2019), Price (2015), and Ronghuai and Xiaolin (2017) on how administrative leaders were the catalyst behind ICT platforms integration in improving classroom learning. My study confirmed that ICT platforms integration laid the foundation for administrative leaders to gain knowledge and understanding by developing growth strategies and best practices grounded in cognitive theory and systems theory.

Shared Vision

Scholars indicated a clear link exists between administrative leaders' belief systems and an organization's overall vision that supports teacher collaboration and a

culture of innovation for the sole purpose of integrating ICT platforms in smart schools. My study confirms Cordella and Tempini's (2015) assumptions that the mindsets of administrative leaders contribute to a shared vision, knowledge sharing, and collaborative learning in smart school environments. The participants confirmed that administrative leaders establish a clear line of communication with subordinates to convey the organization's comprehensive mission, prioritize the vision, and institute structural objectives.

My study aligns with Burke et al.'s (2017) conclusions that administrative leaders understand the importance of laying out clear planning objectives associated with the decision-making process to ensure the rapid growth of ICT platforms. The study results extend knowledge based on the works of Gonzalez et al. (2017), Kozlov and Grobe (2016), Leithwood (2017), Ryoo et al. (2021), and Shepherd and Taylor (2019) that smart schools have become the most innovative learning environments that support an assortment of internet activities, online courses, and ICT platforms. My study confirmed that using ICT platforms as a technological tool has enabled administrative leaders to bridge the gap between pedagogical practices and student learning competencies.

Building Team Collaboration

Scholars indicated a clear link between improving shared leadership and team building through integrating ICT platforms. My study confirms Hensley et al., (2016) assumptions that shared leadership and team building improved the policy decisions and shaped the group activities within smart schools. However, administrative leaders confirmed that this group dynamic does occur in a vacuum but functions by establishing

clear-cut lines of communication through collaborative learning and team building. The participants confirm shared leadership is an interactive process that promotes joint decision-making and collaborative learning to enhance the organizational effectiveness of team building.

My study aligns with Polly et al.'s (2021b) conclusions that administrative leaders promoted collaborative learning among faculty and developed a framework by which teachers and students can actively exchange information. The study results extend knowledge based on the works of Binkhorst et al. (2018); Dexter et al. (2021); Håkansson Lindqvist (2019); Hébert et al. (2021); and Kulikovskikh et al. (2017) that an important aspect of integrating ICT platforms was the establishment of a shared leadership system and the promotion of quality teams in K-12 programs. My study confirmed that the participants engaged in shared leadership that promoted the building of quality teams through an interactive process based on the coordination of tasks to achieve common goals and objectives.

Critical Thinking Skills

Scholars indicated a clear link between teachers acquiring new technical and critical thinking skills to face the digital era's challenges. My study confirms Ryoo et al.'s (2021) assumptions that administrative leaders have incorporated technical and critical thinking skills into their decision-making process because they need to adapt to new strategies and incorporate flexible structures to ensure ongoing growth. The participants confirm that administrative leaders use the decision-making process to

reevaluate their critical thinking skills in the classroom and assess their communication skills with faculty and staff.

My study aligns with Militello et al.'s (2021) conclusions that administrative leaders realize that teachers are the key component to empowering and motivating students to use their critical thinking skills through integrating ICT platforms. The study results extend knowledge based on the works of Burke et al. (2017); Wilcox et al. (2017); Van Wart (2015); Lawrence and Tar (2018); and Waheed et al. (2018) that ICT integration through student-centered learning helps to develop a shared vision, teacher collaboration, and cultivating a culture to support critical thinking in smart schools. My study confirmed that the participants believe that student-centered learning underscores the need to develop critical thinking skills, digital competencies, and problem-solving skills to compete in the 21st century.

Support Teachers Ideas for Building ICT

Scholars indicated a clear link between administrative leaders and teachers in addressing the gap of efficiently integrating ICT platforms and establishing best practices in smart schools. My study confirms Fullan and Langworthy's (2014) assumptions that administrative leaders are attempting to implement strategies to address teachers' competencies and students' digital literacies. The participants confirm that administrative leaders recognize that ICT platforms are an important digital tool to bridge the gap between teachers' competencies and students' literacies in optimizing learning in the classroom.

My study aligns with Raman and Shariff's (2017) conclusions that administrative leaders are beginning to acknowledge the benefits of using ICT platforms to improve student-centered learning in the classroom. The study results extend knowledge-based on Christen et al. (2018); Collinson and Tourish (2015); Dexter et al. (2021); and Szeto and Cheng (2018) that discussed administrative leaders addressing the gap between ICT platforms integration and self-efficacy in the classroom. My study confirmed that the administrative leader's belief system played a key role in integrating ICT platforms and implementing the best practices in smart schools.

Support for Students Identities for Building ICT

Scholars indicated a clear link between students' self-efficacy and innovative learning through the efficient use of ICT platforms in the classroom. My study confirms Tondeur et al. (2017) assumptions that the student-centered approach played a significant role in integrating ICT platforms and implementing best practices in smart schools. The participants confirm the strength of integrating ICT platforms maintained through individualized instruction, collaborative learning, and curriculum management in smart schools.

My study aligns with Gonzales's (2020) conclusions that administrative leaders were instrumental in guiding the teacher's pedagogical practices and influencing student-centered learning in elementary schools. The study results extend knowledge based on the works of Hébert et al. (2021); Ifenthaler et al. (2020); Ryan and Bagley (2015); and Raman and Shariff (2017) that confirmed that effective leadership facilitates teachers' competencies and enhances students' digital literacies in smart schools. My study

confirmed that the key component to students mastering digital literacies was the administrative leader's support of teachers' competencies toward integrating ICT platforms in an interactive environment.

Support Integration Across the Ecosystem

Scholars indicated a clear link between digital integration and ICT platforms to improve smart schools' students' academic performance. My study confirms Hughes and Read's (2018) assumptions that ICT platforms were an investment in digital technologies and a collaborative process that integrated best practices in the classroom. The participants confirm that smart schools provide the framework for creating interactive and innovative learning environments that support integrating ICT platforms across ecosystems.

My study aligns with Duan et al.'s (2020) conclusions that administrative leaders were primarily the facilitators, through ICT platforms, who promoted interactive curriculums and innovative classes that led to higher academic performances in smart schools. The study results extend knowledge based on the works of Bandura (1995); Carver (2016); Price (2015); and Shepherd and Taylor (2019) on how administrative leaders used their cognitive skills to cultivate collaborative learning organizations based on knowledge sharing to leverage resources. My study confirmed that smart schools allowed administrative leaders to cultivate an innovative ecosystem by developing a collaborative learning environment across the organizational processes.

ICT Programs and Practices in System Integration

Scholars indicated a clear link between knowledge sharing and best practices by implementing ICT platforms by incorporating digital technology in K-12 programs. My study confirms Reiss's (2015) assumptions that administrative leaders systematically incorporated ICT platforms because they provided the basis for teachers to implement the best practices by enhancing every student's knowledge-sharing and problem-solving skills. The participants confirm that administrative leaders understood that school communities were dynamic systems and vibrant social organizations could expand and grow over time.

My study aligns with Keane et al., (2020) assumptions that administrative leaders have embraced a comprehensive strategy regarding redesigning the modern classroom that lends itself to the efficient use of ICT platforms. The study results extend knowledge based on Hwang (2014), Jemison (2016), Kormos (2021) and Zaranis, (2017) on how administrative leaders focus on cultivating a positive learning environment by eliminating the barriers associated with the successful integration of ICT platforms. My study confirmed that the concept of systematic integration provides a framework for interactive and best practices that address some of the common challenges of integrating ICT platforms in smart schools.

Secondary Themes

In addition to the primary themes mentioned above, the participants frequently discussed three secondary themes: lead by example, stay connected to technology, and lead as a good listener and great doer. The findings by the participants demonstrated that

administrative leaders contributed to innovative programs by often taking the lead in introducing new procedures or methods of dissemination of ICT platforms. Also, administrative leaders often initiate dialogue with teachers and students regarding the performance of new hardware or software technologies. Finally, listening to faculty and students provides administrative leaders valuable feedback that improves the policies, programs, and organizational structures.

The literature review in Chapter 2 indicates that administrative leaders played an important role in providing guidance and feedback to issues affecting the effective integration of ICT platforms. In other words, administrative leaders were able to assist teachers in improving their delivery of lesson plans or support students' initiatives to learn new applications in the classroom. This process of listening to faculty or students facilitates the development of team-building and collaborative learning, which lead to a more dynamic organization.

Limitations of the Study

Data were secured from a small group of administrative leaders from across the country. Although the trustworthy sample was a small number of administrative leaders, it can still represent the larger population. In this sense, the small group represented the exemplary work of administrative leaders who developed and implemented policy decisions concerning integrating ICT platforms and implementing best practices. Also, amid a pandemic, I sought to interview as many administrative leaders as possible. The researcher faced time restraints, scheduling issues, and the availability of participants.

Nevertheless, the researcher could secure rich and diverse data until saturation. Data saturation was achieved after four interviews with participants.

The second limitation may have been an inherited bias on the researcher's part. I followed Moustakas' (1994) bracketing process to mitigate as much as possible my assumptions or bias on the researcher process. However, the participants were chosen based on the criteria established by research design; there may have been an impartial tendency to pick participants that fit the researcher's field study. Nevertheless, the researcher sought to remain impartial throughout the research process and limit the researcher's views to clarifying or explaining issues about the study.

Another limitation focuses on the administrative leaders' reliability responses or self-reporting in answering each question accurately and openly based on the interview process. Nevertheless, the researcher was able to triangulate information from the interview questions, member checking, and a personal journal to ensure the validity of the research. Finally, I used open-ended questions, thus offsetting biases from both the interview subjects and participants.

Recommendations

In previous research studies on smart schools, the emphasis was on documenting administrative leaders' challenges in integrating ICT platforms and best practices in K-12 programs. The process of ICT platforms' integration and best practices involves incorporating the teacher competencies and students' digital literacies. Initially, the findings of this research study show that administrative leaders were constantly engaging in curriculum management, collaborative learning, and leveraging digital resources (i.e.,

Chromebook, Canvas, Zoom, others, etc.). Further, the research outcomes illustrated that the top-down approach is being replaced with more flexible and innovative disseminating ICT platforms and best classroom practices.

My research provides insights into how administrative leaders use ICT platforms and best practices to communicate and disseminate innovative ideas throughout the organization. We know that administrative leaders communicate in numerous ways, including smartphones, emails, and internal memos, but how do we know if the communication is effectively implemented or applied to teachers and students. One recommendation for further research is to conduct a heuristic case study on the effectiveness of various communication channels to enhance the dissemination of new ideas and information throughout the school system.

Another recommendation focuses on developing a quantitative research study to determine whether or not ICT platforms integration is a worthwhile investment for school districts. Many school districts spend millions of dollars upgrading their computer systems and improving their software requirements to assist students in achieving learning outcomes. My result indicates that the ideas of ICT platforms and best practices evolved from the flipped school (teaching diverse subjects) to collaborative learning within various smart schools' environments. Future studies can assess whether certain investments in ICT platforms are beneficial and whether innovative ideas can lead to more proficient organizational structures.

At the core of this study is supporting the professional practice of administrative leaders, teachers, and students working together to solve a problem by addressing the

needs of the students through large group or small group discussions and exploring a concept through the use of these different ICT platforms. The blended model offers administrative leaders the options of some students learning in classroom settings, like a traditional school, and others learning remotely within a smart school environment. No longer would students be shuffled from one class to another in 45-minute brief sessions without barely learning anything vital. Blended learning is the key to integrating ICT platforms in smart schools by combining laptops with workbooks and worksheets with iPads as a guideline to learning. Successfully integrating ICT platforms in smart schools improves students' learning skills by transforming the modern digital classroom.

Implications

Positive Social Change

In the past, educational institutions assumed that traditional forms of learning contributed to effectiveness and efficiency in the classrooms (Dabbagh et al., 2015). Nevertheless, the traditional learning model, introduced in the nineteenth century, could no longer keep pace with the accelerated growth of innovative curriculums or ICT platforms of the twentieth century. More importantly, the advancement in digital technology has replaced the traditional blackboards and has increased access to a vast array of information to students. As a result, educational institutions are exploring different means of disseminating information and integrating various ICT platforms.

The findings of my study may contribute to positive social change by informing education policymakers and school administrative leaders on how effective ICT platforms can allow students to use innovative applications and learn new computer skills

in a real-time setting. This commitment to digital literacies and competencies has focused on investing in the technology and the training of teachers to motivate students in a smart school environment. Launching and properly leading ICT platforms integration in smart schools may provide an invaluable support system for preparing students with learning to succeed in the modern digital classroom.

Policy and Professional Practice

Over the last decade, administrative leaders assumed that improving teachers' competencies and investing in new equipment would solve the challenges of ICT integration in the classroom. In particular, the primary problem that administrative leaders encountered was the failure to manage resources, implement the best practices, and effectively integrate ICT platforms into K-12 programs (Ali et al., 2017; Gonzales, 2020). This is mainly because administrative leaders fail to promote the efficient use of ICT platforms. Consequently, the reasons can be attributed to poor decision-making, inadequate teacher training, and lack of resources (Mundy & Kupczynski, 2013).

In contrast, the integration of ICT platforms in smart schools has provided a valuable tool for bridging the gap between teachers' competencies and students' literacies by optimizing efficiency in the classroom. Blended learning does not explore an essay question in isolation or struggle with a chemistry problem through a remote learning site. Instead, blended learning combines the best aspects of smart schools (i.e., personalized learning, group discussions, interactive videos, etc.) with traditional textbook learning. My recommendations support a blended approach that could consist of four elements such as large group discussion (where background information is given), small group

discussion (response to questions), individualized learning (student learns at their own pace), and group project (design within a group).

Theoretical Implications

Administrative leaders face the challenge of trying to reap the benefits of ICT platforms by practicing outdated beliefs and outmoded operational systems regarding integrating ICT platforms in smart schools (Carver, 2016; Håkansson Lindqvist, 2019). Research regarding how administrative leaders' have updated outmoded beliefs regarding implementing the best practices efficiently into ICT platforms remains rare. (Marshall & Taylor, 2017; Polly et al., 2021b).

Thus, a literature gap focused on exploring the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools (Kormos, 2021; Militello et al., 2021). The findings of this empirical study using a transcendental phenomenology design contributed original qualitative data to the study's conceptual framework aiming to advance a deeper understanding of participants' lived experiences leading the successful integration of ICT platforms and best practices in K-12 smart schools.

My study confirms the two concepts that ground this study, 1) *building digital capacity in smart schools* and 2) *ICT platforms integration in smart schools* have previously been used by scholars' work to recommend for further empirical studies on providing a contextual basis to understand administrative leaders' lived experiences (see Bandura, 1995; Fullan & Hargreaves, 2014; Funkhouser & Mouza, 2013). Thus, the strength of these two concepts framed the link between administrative leaders' lived

experiences and the successful integration of ICT platforms and best practices in smart schools. Administrative leaders have become facilitators that influence the organizational processes, structures, and policies.

The theoretical model of capacity building provided me with a systematic approach to disseminating information and a means for improving organizational infrastructures (see Harris et al., 2013; Hondale, 1981) and exploring the link between leaders' belief systems and policy-making within large complex organizations (Wood & Bandura, 1989). My study further extends knowledge within social cognitive theory and systems theory. These two theories form the framework for exploring administrative leaders' beliefs on integrating innovative technologies, articulating their vision and mission to teachers, and systematically engaging in capacity building in the organization.

Practical Implications

In this sense, capacity building has the potential for administrative leaders to gain knowledge and understanding into ICT integration strategies and the best practices by examining other overlapping components of cognitive theory and systems theory. Administrative leaders in k-12 schools systems transitioning to a smart school model must have self-confidence and self-discipline to withstand adversity that change can cause among all levels of organizational stakeholders (see Wood & Bandura, 1989). Administrative leaders' beliefs can affect the overall performance, and they exert influence over the organization (Bandura, 1995) by motivating teachers and inspiring students.

Further, this study is significant to the practical application of positive social change because the integration of ICT platforms addresses the problems of students learning in isolation, lack of high-speed internet in urban communities, and access to pertinent information in real-time. In addition, administrative leaders have restructured the digital landscape and transformed the modern classroom into collaborative learning environments. No longer is the student required to embrace the traditional model of learning by rote, but a student can learn a language or design their mini-lesson in the modern digital classroom.

Conclusions

Administrative leaders recognize the potential of integrating ICT platforms, leading to effective collaboration and enhancing students' learning experience in smart schools. The seven participants selected for this study were primarily the decision-makers involved in developing policy and procedures for school systems. The participants revealed that smart schools are instrumental in building vibrant, creative, and innovative organizations. Through extensive training and professional development, teachers have adopted the administrative leaders' vision of a student-centered learning approach to enhance the integration of ICT platforms. A vision encompasses a comprehensive strategy of supporting the teachers' competencies and improving students' literacies in a smart school environment.

The purpose of the study was to explore further and discover the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools. I used Moustakas' (1994) transcendental

phenomenological research methods and data analysis following a systematic and rigorous data collection process. I engaged in bracketing, included in the epoche process, to filter out prior knowledge or bias, as Moustakas (1994) noted. Through this bracketing process, I proceeded to conduct interviews using semi-structured questions for each participant.

In this regard, the specific management problem is that little is known about the lived experiences of administrative leaders with the successful integration of ICT platforms and best practices in K-12 smart schools (Kormos, 2021; Militello et al., 2021). The qualitative research design of transcendental phenomenology provided data in answering the central my research questions and meeting the study's purpose since it explores the lived experiences of humans of a phenomenon (Moustakas, 1994). Qualitative transcendental phenomenological methodologies involved extensive research aimed at identifying and reporting the lived experiences of participants of smart schools.

My research study revealed that administrative leaders who successfully sought to integrate ICT platforms developed the capacity to build an effective organization by investing in teachers who collaborate in a student-centered environment learning that promotes innovation, critical thinking, and decision-making in smart schools. Administrative leaders believe that ICT platforms integration is a set of tools that process and disseminate information for the sole purpose of overcoming barriers and obstacles to student-centered learning. However, the difference between traditional school (textbook) and smart schools (digital delivery) remain at the heart of the discussion on the effective delivery systems and operating systems to disseminate information to students.

One of the positive aspects of my research, especially during the pandemic, was to observe the increased communication between administrative leaders and teachers. This meaningful dialogue begins to explore the question of student burnout, overuse of technology, and reliance on technology. Despite the challenges of the pandemic, administrative leaders began to look at various alternatives and other methods of delivering information to students. Administrative leaders begin to address these new online learning challenges by adapting or combining digital devices and traditional learning into a blended learning format.

My research into the lived experiences of school administrative leaders in this empirical study leading successful ICT platform integration in smart schools may foster meaningful, positive, and sustainable social change for this group. An administrative leader focuses on building capacity or cohesion to allow teachers and students to work together across ecosystems. Administrative leaders view these relationships as an opportunity to develop new methods of teaching as well as a new approach to student learning within these diverse communities. In doing so, administrative leaders built critical trust and collaboration with teachers and staff. Nevertheless, building trust and cooperation among teachers, faculty, and parents is not easy in this competitive digital age. Smart schools have become instrumental in building creative and innovative organizations. Launching and properly leading ICT platforms integration in smart schools may provide an invaluable support system for preparing students with learning to succeed in the modern digital classroom throughout their academic experiences.

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Appendix A: Introduction Letter

Dear Sir,

I am a doctoral student at Walden University. Presently, I am researching as part of my dissertation in Applied Management and Decisions Science on the various innovative approaches to integrating technology in the classroom. My study seeks to examine the factors that lead to understanding administrators' perspectives on contributing to the best practices in elementary schools.

My research focuses on the successful integration of digital ICT platforms in smart school whereby the innovative approaches to student learning and teacher-facilitated instruction were being applied that can lead to changing the landscape of education. This research project will not only help administrative leaders to reinvent education platforms, but also bridge the gap between technology in elementary schools.

I have enclosed a brief background of my research study and I would welcome any inquiries.

Best regards,

Byron B. Jackson, MPhil, MPA

Appendix B: Interview Questions for Administrative Leaders

1. What is your typical day like at your elementary or high school?

Capacity Building

2. Can you clarify what administrative skills and ICT resources do you feel are needed to have a successful integration of ICT platforms?

3. How do leaders build an infrastructure that emphasizes long term change?

Systems Theory

4. How would you characterize the operational constraints that affect the core processes and your organizational structure?

5. What are the challenges leaders face in examining the root causes of problems?

6. What is the best methods to address long term solutions?

Best Practices

7. If you were to predict the success of the tech schools what kinds of factors contribute to the effective implementation of ICT platforms?

8. How would you differentiate best practices in a tech school vs a traditional school?

Social Cognitive

9. What was your experiences with team-building and collaborative learning in the tech school?

10. How do the teachers and staff initiate a dialogue to reflect and review curriculum, lesson plans, and new programs involved integration of ICT platforms?

Appendix C: Protocol for Participants

Explain the purpose, significance, and procedures for the phenomenological research study to each participant. Also, the researcher will go over the procedures for the interview and focus groups such as:

1. The researcher will go over the consent form and the nature of semi-structured questions.
2. The interview will take place via phone or skype.
3. The interview is scheduled to take place 45 minutes to one-hour.
4. The researcher will discuss the rights of participants to drop out of the study at any time.
5. The researcher will discuss the confidentiality and privacy protocols for the study.
6. The researcher will discuss that no compensation will be offered to participants in the study.
7. The researcher will discuss that the sessions will use an audiotape and transcription of the notes for the interview.
8. The researcher will thank each participant and explain the next step of the research study.

Appendix D: Member Checking Letter

Dear Participant,

I would like to thank each of you for participating in this research study regarding administrative leaders' attitudes and beliefs on integrating information communication technology (ICT) as well as the successful implementation of the best practices. By sharing your insights, thoughts, and experiences, your comments will be informative and helpful because they will contribute greatly to my research study.

Enclosed is a copy of a summary of the audio transcripts for your review. In addition, I would like to request taking the time to make any corrections or comments in the margins. I will follow up with a phone call to further go over any parts of the transcripts or clarify any issues. Please do not edit any comments for grammatical errors or style content because it may change the tone or emphasis of the remarks. Finally, I'm requesting that all summary of the transcripts be returned to me within 3-5 days or no later than (insert date).

Again, I want to personally thank you for your participation and patience in sharing your experiences. If you have any additional questions about the study, please free to contact me or my researcher advisor.

Best regards,

Byron B. Jackson, MPhil, MPA