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Transitioning to a Personalized Learning Environment Leveraging One-to-One Devices

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Transitioning to a Personalized Learning Environment Leveraging One-to-One Devices

Rebecca G. Myers

Kennesaw State University

October 2018

A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Education in the Bagwell College of Education

Dr. Chinasa Elue, Chair
Dr. Iván M. Jorrín Abellán, Committee Member
Dr. Julie Moore, Committee Member
Today’s educational blueprint is evolving from the traditional teacher-directed model into a student-driven curriculum approach. Specifically, education is experiencing a paradigm shift from the long-established one-size-fits-all model to a customized learning process known as personalized learning. Personalized learning aims at engaging students in more relevant and rigorous learning and turns them into co-designers as the curriculum becomes tailored to their individual learning needs, skills, and interests. Additionally, when coupled with educational technology, personalized learning will provide the teacher with the tools to individualize, differentiate, and accommodate multiple student learning styles and preferences. Indeed, as personalized learning increases in popularity the need to effectively implement the new instructional model also increases. Moreover, it is imperative to understand how the roles of teachers and administrators change as schools’ transition from a traditional learning paradigm to a personalized learning approach influenced by one-to-one devices, and how these changes affect implementation. Therefore, the aim of this research was to explore the perceptions of administrators and teachers as they transition from a traditional learning paradigm to a personalized learning model influenced by one-to-one devices.

*Keywords:* andragogy, one-to-one computing, personalized learning, phenomenography, transformative learning, ubiquitous learning.
DEDICATION

I would like to dedicate my work to Jessica Miller who has given me unconditional support, understanding, and patience as I have pursued my academic dream. My parents, Frank and Martha Myers, who have instilled in me the drive, perseverance, and commitment to excelling. My brother, Bryan Myers, for the encouragement and for always being a strong role model. Lastly, Boscoe Myers, who was always by my side keeping me company.
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CHAPTER ONE

INTRODUCTION

The educational paradigm is shifting as learners are becoming progressively more diverse in their backgrounds and learning styles (Zmuda, Curtis, & Ullman, 2015). In today’s classroom, teachers work with students of approximately the same age who have a greater range of learning needs than those of the early 1900s (Tomlinson, 2014). Moreover, in one learning environment students may come from various cultures, economic backgrounds, have differing levels of English comprehension, knowledge bases, academic styles, and multiple learning exceptionalities (Grant & Basye, 2014; Tomlinson & Imbeau, 2012). Teachers are challenged with making learning engaging, rigorous, relevant, and meaningful to students who span a continuum of academic styles and diverse backgrounds (Tomlinson, 2014).

This study helps educators make sense of the landscape that is shifting from a traditional one-size fits all instructional model to a personalized approach that engages students in their own learning script as they become co-designers of the curriculum; customizing the learning to individual needs and interests (Grant & Basye, 2014; Kallick & Zmuda, 2017b; Wolf, 2010). Grant and Basye (2014) stated, personalized learning provides’ educators the platform to design learning opportunities for all their students by tailoring instruction to individual preferences, abilities, and interests while ensuring students remain engaged and become invested in their own learning process. Similarly, Wolf (2010) stated:

Personalization provides the opportunity to redefine the concept of equity: from one that goes beyond providing all students with the same educational inputs and opportunities to one in which all students have access to a unique learning experience based on their individual needs. (p. 9)
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Thus, the transformation from a factory-style model of schooling to a personalized learning approach influenced by one-to-one mobile devices is a paradigm shift likely to make an impact for students when diversity is at its highest and academic expectations are intense (Wolf, 2010).

Background

Since the industrial revolution, education has used an assembly line approach and learning has become a linear process (Zmuda et al., 2015). This practice promotes one curriculum for everyone, one grade at a time, and uses one standardized test, per subject, to determine learning (Kallick & Zmuda, 2017b; Wolf, 2010). Further, while the global workforce has evolved, our pedagogical philosophies have yet to transform, thus creating a division between education and the workforce (Wolf, 2010; Zmuda et al., 2015). As a result, an educational transformation from the compliance-oriented structure and conventional teaching paradigms to a personalized learning experience based on individual abilities, interests, and needs is crucial (Zmuda et al., 2015).

Personalized learning is a departure from the one-size-fits-all education model, allowing learning to meet students at their ability while customizing instruction to their preferences and needs; and providing students with an active role in their learning process as they become co-engineers in their educational script (Grant & Basye, 2014; Kallick & Zmuda, 2017b; Wolf, 2010). Additionally, the personalized learning approach facilitates creativity, innovation, self-regulation, student engagement, reflection, and critical thinking (Grant & Basye, 2014; Pane, Steiner, Baird, & Hamilton, 2015; Rickabaugh, 2015; Wolf, 2010). As a result, personalized learning does bridge the gap between education and the 21st century workforce by making learning relevant, rigorous, and significant both inside and outside of school (Grant et al., 2014; Wolf, 2010).
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In addition, educational technology has gained momentum throughout recent years due to an evolution of integration in schools and classrooms (Grant & Basye, 2014). In fact, continued advances in technology have activated a digital revolution responsible for challenging the traditional instructional paradigm (Delgado, Wardlow, McKnight, & O’Malley, 2015). Moreover, in recent years there has been an increase in adoption of one-to-one initiatives in schools, districts, and states; giving every learner and educator their own wireless device containing current software and internet access (Argueta, Huff, Tingen, & Corn, 2011; Bebell, & O’Dwyer, 2010; Penuel, 2006). Even more, policy makers believe one-to-one initiatives provide educators and students access to a diversity of resources and references and have a significant positive impact on: (1) instruction; (2) student-centered learning environments; (3) community collaboration; (4) real-time continuous feedback; and (5) economic competitiveness for the United States workforce (Apple Computer, 2005; Culp, Honey, & Mandinach, 2003; Delgado et al., 2015; Silvernail et al., 2003). More specifically, one-to-one initiatives were adopted to increase the efficiency and effectiveness of teaching and learning, 21st century skills (Bebell, 2005), student engagement (Argueta et al., 2011), improved academic achievement, and equality of access to digital resources (Penuel, 2006).

Personalized learning environments leveraged by one-to-one devices provide educators with the pedagogy and curriculum to disrupt the traditional learning methods (Rickabaugh, 2016). Rickabaugh (2016) argued that when coupled with technology, personalized learning transforms learning through a student-centered curriculum that is tailored to individual learning preferences. Further, utilizing technology in a personalized learning environment enhances and supports student autonomy and engagement as learners are provided with increased agency and accountability for their learning process (Grant & Basye, 2014; Rickabaugh, 2016). According
to Grant and Basye (2014) students excel through individualized learning experiences that are collaborative, significant, and tailored to their interests and needs.

Fullan (2016) argued that educational transformation involves the following: (1) revision of one’s beliefs; (2) change in teaching paradigms; and (3) the use of new or modified instructional resources or technologies. Similarly, Darling-Hammond and McLaughlin (2011) claimed teachers are the driving force when implementing new initiatives because they must transform their prior understanding to construct new methods of instruction that they have probably never experienced themselves. On the other hand, Sakiz (2016) stated staff unity coupled with school culture has the greatest influence on implementing a change in instructional paradigms and modifications in beliefs and attitudes. In other words, educational reform should be co-constructed between leaders and teachers to have a sustained effect (Sakiz, 2016).

**Problem Statement**

Over the last decade various educational technology advances, such as electronic and mobile learning (Yahya, Ahmad, & Jalil, 2010), have generated new instructional trends and shifts (Basham, Hall, Carter, & Stahl, 2016; Grant & Basye, 2014). Additionally, with the enactment of the National Education Technology Plan (U.S. Department of Education, 2010), personalized learning has become the medium for leveraging technology to enhance student learning (Basham et al., 2016; Grant & Basye, 2014; Kallick & Zmuda, 2017b; Rickabaugh, 2016). Further, personalized learning generates the data and tactics educators need to improve pedagogical decisions to provide students with autonomy and agency in their learning script (Grant & Basye, 2014). In conclusion, Grant and Basye (2014) stated that personalized learning leveraged by technology integration challenges educators’ instructional paradigms by providing effective adaptive avenues to customize, support and assess individual learning processes.
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Subsequently, the problem explored through this study was the extent to which administrators and teachers’ roles changed during the transition from a traditional educational method to a personalized learning model leveraged by one-to-one devices. This problem originated from a district initiative for schools to systematically transition from a conventional instructional model to a personalized learning approach. Further, the amount of money spent on leveraging the initiative with technology stimulated a desire to conceptualize the systematic impact of this new instructional paradigm shift.

Statement of Purpose

The traditional assembly line learning model is being transformed to a new instructional framework called personalized learning (Kallick & Zmuda, 2017b). Personalized learning offers a blueprint that increases student learning and equips students to meet the challenges of a 21st century global workforce (Rickabaugh, 2016). As personalized learning gains interest and attention, there is an increased demand to understand the impact and effectiveness of the implementation of this instructional framework (Basham et al., 2016; Penuel & Johnson, 2016; Zmuda et al., 2015). Therefore, the purpose for this phenomenographic study was to explore a sample of administrators and teachers’ perceptions regarding the transition from a traditional educational method to a personalized learning model influenced by one-to-one devices. Further, this study explored the extent to which administrators’ and teachers’ roles have changed because of the transition, as well as the perceived impact of technology on the transition.

Research Questions

The conducted qualitative study addressed the following two research questions:
1. How do administrators and teachers experience changes in their roles as they transition from a traditional learning paradigm to a personalized learning model leveraged by one-to-one devices?

2. How do administrators and teachers perceive the influence technology has on their transition to a personalized learning environment?

**Significance of Study**

The movement from a compliance-oriented structure to a personalized approach in which instruction is tailored to individual learning preferences is growing in popularity (Basham et al., 2016; Grant and Basye, 2014; Rickabaugh, 2016; Zmuda et al., 2015). As a result, various researchers have examined how personalized learning environments have influenced academic performance (Bill & Melinda Gates Foundation, 2014; Clark, 2013), adaptive software (Coleman-Martin, Heller, Cihak, & Irvine, 2005; O’Donoghue, 2009), and specific strategies; including blended learning (Christensen, Horn, & Staker, 2013), differentiation (Green & Mahoney, 2017), and ubiquitous learning (Shih, Chu, & Hwang, 2011; Wang & Wu, 2011). Conversely, there is little research on how to conceptualize the effectiveness of personalized learning environments (Basham et al., 2016; Halverson et al., 2015; Herold, 2016; Jenkins, Williams, Moyer, George, & Foster, 2016; Penuel & Johnson, 2016; Zmuda et al., 2015).

Additionally, a rush of learning educational technology and one-to-one initiatives allowing global access is saturating the classrooms and providing both authentic opportunities and relevant challenges (Zmuda et al., 2015). Yet, there is little knowledge of how technology, specifically one-to-one devices, is being leveraged in the classroom and infused into learning (Donovan, Green, & Hartley, 2010; Zucker, 2004). In fact, according to Donovan et al. (2010), research on the effect of providing increased learner access to technology has been subjective, as
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the research has focused mostly on student outcomes and achievement. Moreover, Mouza (2008) claimed there are very few studies in the context of how, when, and to what level computing devices are utilized to leverage instruction to enhance learning.

Nevertheless, qualitative research designs are underrepresented within the growing body of literature emerging on personalized learning and student achievement (Bill & Melinda Gates Foundation, 2014; Clark, 2013). More specifically, the bulk of qualitative personalized learning studies conducted have focused on the individual perceptions of one group of participants: students, teachers, or administrators (Courcier, 2007; Waldrip et al., 2014). Nonetheless, the few studies that explored perceptions across multiple groups of participants focused on instructional strategies and alignment with school and district policies during the implementation of personalized learning environments (Steiner, Baird, Hamilton, & Pane 2017; Jenkins et al., 2016). By way of contrast, this conducted qualitative study explored these research gaps by comparing teachers and administrators’ perceptions transitioning from a traditional learning paradigm to a personalized model influenced by one-to-one devices.

In summary, this study contributed to the field of education by providing recommendations and best practices to educators about transitioning from a compliance-oriented paradigm to a personalized learning model. According to Stake (2010), understanding of each experience is connected to a previous experience. Further, “naturalistic generalizations” are the knowledge derived from such individual experiences, which provide a deeper understanding than a verbal description of the situation (Stake, 2010). Additionally, this study raised awareness about the utilization of one-to-one devices to enhance instructional practices within a personalized learning environment. Further, this conducted study offered insight about the processes teachers and administrators use to transition to a personalized learning model. Finally,
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dthis study identified the changes in teachers’ instructional roles and administrative support that have transformed because of the transition to a 21st century learning model.

Conceptual Framework

Ravitch and Riggan (2017) explain that a conceptual framework both molds the purpose and direction of one’s research while facilitating the study’s development. More specifically, a conceptual framework explains why the topic under study is significant, and why the methodology used to explore the topic is both appropriate and arduous. Furthermore, a conceptual framework serves as the argument for the research’s significance (Ravitch & Riggan, 2017).

Ravitch & Riggan (2017), claimed the elements of a conceptual framework are: personal relations with the topic, positionality or worldview, and the literature review. Additionally, this study will include the problem statement, research questions, and a research tradition to enrich the connection between the conceptual framework and the methods employed. In summary, a conceptual framework serves as the backbone of the study conveying the purpose and foundation for the research while reinforcing the methodological rigor (Ravitch et al., 2017). Consequently, for the current study, I used Ravitch and Riggan’s definition and elements to help construct the conceptual framework. Figure 1 shows a graphical depiction of the conceptual framework.
Goal

Integrating:
• To contribute to the field of education by increasing awareness and knowledge on the utilization of one-to-one devices to leverage instruction.
• To identify the roles teachers’ and administrators undergo through the transition from a compliance-oriented paradigm to a personalized learning model.
• Offer insight on the process teachers and administrators experience when transitioning to a personalized learning paradigm.

Practice:
• To provide recommendations on the transition process to personalized learning environments.
• Create a best practice guide to aid other schools and districts as they transition to a personalized learning paradigm.

Personalized learning
(Hom, 2016; Grant et al., 2014; Kallik et al., 2017b; Pane et al., 2015; Raskvaugh, 2013; Wolf, 2010; Zmuda et al., 2015).

Personalized learning environments
(Bebel & Kay, 2010; Bebell & O’Dwyer, 2010).

Review of Literature: Topical Research

Transitioning to personalized learning leveraging one-to-one devices

The research is lacking comparing the perceptions of administrators and teachers with the influence personalized learning environments have on the learning experience, the effectiveness of personalized learning from a qualitative approach, knowledge of how technology is leveraging learning in understanding one-to-one initiatives, and the conceptualization of the effectiveness of personalized learning environments beyond the scope of student achievement (Basham et al., 2016; Coccieri, 2007; Donovan, 2009; Grun & Hatley, 2010; Halverson et al., 2015; Herold, 2016; Jenkins et al., 2016; Pane et al., 2017; Pusser et al., 2016; Zmuda et al., 2015).

Review of Literature: Theoretical Research

Problem Statement

The problem in this study was the extent administrators and teachers’ roles changed with the transition to a personalized learning environment leveraging one-to-one devices. This was achieved by examining the perceptions of teachers and administrators lived experiences transitioning from a traditional educational paradigm to a personalized learning model.

Research Questions

How do administrators and teachers experience changes in their roles as they transition from a traditional paradigm to a personalized learning model leveraging one-to-one devices?

How do administrators and teachers perceive the influence technology has on their transition to a personalized learning environment?

Research Tradition

The conducted study used a phenomenographic research tradition to explore the collective learning experiences of three administrators and three teachers transitioning to a personalized learning model leveraging one-to-one devices.
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As previously mentioned, Ravitch and Riggan’s (2017) suggested structure for conceptual frameworks contains the following components. First, personal interests and goals reflect the researcher’s beliefs and motivation (Ravitch et al., 2017). In line with this, my motivation for conducting this study is three-fold: (1) to increase awareness and understanding about leveraging educational technology to enhance instructional practices; (2) to identify the role shifts that administrators and teachers experience as they transition to personalized learning environments; and (3) to provide recommendations and best practices to aid future schools and districts as they make the personalized learning transition.

Next, is the identity and positionality of the researcher. Ravitch and Riggan (2017) state that the shaping and influence of the study is dependent on the researcher’s position relative to the research, as well as the researcher’s own interests, beliefs, biases, and understanding of the world. For this study, I bring a constructivist worldview focused on acquiring knowledge from the discussions I had with the participants as they reflected on their beliefs and views of the transition to a personalized learning environment (Creswell, 2014).

Following this, a literature review was conducted to identify the relevant and rigorous foundational research that has shaped the topic being studied (Ravitch & Riggan, 2017). Ravitch and Riggan referred to much of the research used in literature reviews as topical research. More specifically, the topical research helps researchers frame their study, identify research gaps, and analyze the different methodological approaches used to explore the research topic (Ravitch & Riggan, 2017). Therefore, in the literature review the topical research focused on personalized learning and the influence of one-to-one devices on learning environments.

Additionally, according to Ravitch and Riggan (2017), a second crucial component of the literature review is the identification of the theoretical framework. More specifically, the
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theoretical framework is the collection of recognized theories that support one’s conceptual framework and study (Ravitch & Riggan, 2017). Consequently, the theoretical framework for this conducted study was comprised of the theories of transformative learning, andragogy learning, and ubiquitous learning.

Lastly, to better understand the connection between the methodology and conceptual framework, the problem statement, research questions, and research tradition were examined. First, the problem statement in this study was the extent administrators and teachers’ roles changed with the transition to a personalized learning environment leveraging one-to-one devices. This was achieved by examining the perceptions of teachers and administrators lived experiences transitioning from a conventional educational method to a personalized learning model. Second, the research questions answered in this conducted study are: (1) how do administrators and teachers experience changes in their roles as they transition from a traditional paradigm to a personalized learning model leveraged by one-to-one devices? and (2) how do administrators and teachers perceive the influence technology has on their transition to a personalized learning environment? Third, the conducted study used a phenomenographic research tradition to explore the collective learning experiences of three administrators and three teachers transitioning to a personalized learning model leveraging one-to-one devices. In summary, the literature review and methodology chapters (Chapters Two and Three, respectively) were constructed based on Ravitch and Riggan’s key components of a conceptual framework.
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Definition of Terms

This section comprises of a list of the definitions of terms utilized in the research that do not consist of a commonly known meaning or those terminology having the likelihood of being misconstrued (Bloomberg & Volpe, 2012).

- **Andragogy** is an adult learning theory where the adult is placed at the center of their learning experience (Knowles, 1980).

- **Blended learning** is an instructional strategy where learners use a variety of digital and non-digital mediums to show mastery (Christensen et al., 2013).

- **Descriptive categories (themes)** represent the relationships within and between codes and code families, and aid with the formation of the collective conception of the phenomenon (Collier-Reed & Ingerman, 2013).

- **Differentiation** is a customized learning approach where the learning targets are identical for all the students, but the learning preferences are determined by the needs of the student (Grant & Basye, 2014).

- **Individualized learning** is a model in which the teacher allocates the assignments to the learner through a digital medium (Green & Mahoney, 2014; Zmuda et al., 2015)

- **One-to-one** is an initiative designed to provide every student and educator with their own personal wireless computing device with up-to-date software and access to the internet (Penuel, 2006).

- **Personalized learning** is a learner-driven approach in which students genuinely engage in adaptive, significant, authentic, and rigorous challenges to demonstrate preferred results (Kallick, & Zmuda, 2017a).
• **Phenomenography** is to study the diversity of participants’ understandings of a phenomenon (Marton, 1981).

• **Traditional learning** is a process where the learner is a submissive recipient of transmitted knowledge, usually from an authoritative source (Cope & Kalantzis, 2009).

• **Transformative learning** is the acquisition of knowledge that disrupts previous learning and stimulates the restructuring of ingrained understandings and belief structures (Davis, 2006).

• **Twenty-first century skills** are a consensus of critical thinking, global awareness, communication skills, creativity, innovation, problem solving, financial literacy, and being able to transfer information from multiple modes and platforms in order to succeed in a global society (Johnson, 2009).

• **Ubiquitous computing** refers to small computers with computation and communication abilities that are equipped with sensors used to exchange information to enhance individuals’ daily lives and provide individuals with support as needed (Hwang, Wu, & Chen, 2009; Sakamura & Koshizuka, 2005).

• **Ubiquitous learning** is a learning paradigm based on ubiquitous computing technology that enables a learner to gain specific knowledge anytime and at any place (Hwang et al., 2009; Sakamura & Koshizuka, 2005; Yahya et al., 2010).
The concept of personalized learning as a vehicle to increase student learning has acquired growing interest over the last decade (Kallick & Zmuda, 2017b; Rickabaugh, 2016). The societal paradigm shift is from a traditional one-size-fits-all model to a student-driven curriculum influenced by one-to-one devices and educational technology (Wolf, 2010). As a result, the purpose of this study was to gain a conceptualized understanding of the systematic transition from a compliance-oriented learning paradigm to a personalized learning model and the transformational influence on the instructional experience. The aim of this chapter was to gain an understanding and knowledge that has been established (Ravitch & Riggan, 2017) on transitioning to a personalize learning environment leveraging one-to-one devices. For this reason, the theoretical framework of this study is based on: 1) transformative learning theory; 2) andragogy learning theory; and (3) ubiquitous learning theory. This chapter includes a thorough examination of the theoretical framework and the topical research that served as the foundation for the current study. Specifically, the topical research review includes an examination of existing studies on 1) personalized learning; and 2) one-to-one initiatives.

Theoretical Framework

The theoretical framework for this study is a combination of the transformative learning theory, andragogy learning theory, and ubiquitous learning theory. Regarding transformative learning theory, Mezirow and Taylor (2009) argued learning transforms traditional educational paradigms (frames of reference) by making them more comprehensive, reflective, exposed, and capable of change. Mezirow’s theory described how adult learners determine meaning of their experiences, and how the subtleties involved in adapting these understandings change when
learners discover the meanings to be flawed (Mezirow, 1991). For this reason, Mezirow’s theory has been utilized in this study as educators’ traditional instructional beliefs were questioned and challenged through the implementation of a new learning paradigm. As a result, transformational learning emerged.

According to Sharifi, Soleimani, & Jafarigohar, (2016) there is currently a pedagogical shift in motion favoring a self-directed learner. This shift is fortified by the collaboration of adults to co-create their learning; thereby, tailoring the instruction to individual needs and interests (Chan, 2010). Encouraged by technological advances, this shift supports Malcolm Knowles theory; andragogy (Knowles, Holton & Swanson, 2005; Sharifi et al., 2016). More specifically, Knowles et al., (2005) stated, andragogy “is an honest attempt to focus on the learner.” (p. 1). In other words, andragogy signifies a learner-centered education for adults (Chan, 2010; Knowles et al., 2005; Sharifi et al., 2016). Consequently, this study used the theory of andragogy in conjunction with the transformative theory to lay the groundwork for how adults learn.

Yahya et al. (2010) claimed, the ubiquitous learning theory is an extension of earlier learning theories and has been used to explain the state of learning as it shifts away from a traditional learning paradigm towards an electronic and mobile-learning model. Even more, ubiquitous learning embeds learning activities in daily life by using computers in the learner’s environment as a hub to communicate with personal devices; allowing the individual to learn while they are moving, hence, connecting them with their environment (Yahya et al., 2010). As a result, this study empoloyed the ubiquitous learning theory as the foundation for the daily use and integration of technology through the utilization of mobile devices to enhance learning to an anytime, anyplace, and anywhere mindset.
Transformative Learning Theory

In 1978, Mezirow and Marsick developed the transformative learning theory, then called perspective transformation (Howie & Bagnall, 2013). According to Howie & Bagnall (2013), Mezirow continued his research and was credited with the theory. Mezirow’s theory states, that every person has a specific interpretation of the world (Christie, Carey, Robertson, & Grainger, 2015). Additionally, Christie et al. (2015) further explained that an individual’s worldview is founded on definitive assumptions that stem from the individual’s background, experiences, culture, and education. Consequently, individuals have a challenging time changing because their worldviews become automatic frames of reference developed through habits of the mind (Christie et al., 2015). Further, according to Christie et al., (2015) these points of view become embedded and need a dynamic and powerful argument or what Mezirow terms a disorientated dilemma to challenge their beliefs and worldview.

The theory of transformative learning explains how the process of acquiring the meaning of one’s experience drives a paradigmatic shift (Taylor, 1998; Taylor, 2007). Fostering transformative learning involves three core components: individual experience, critical reflection, and dialogue (Taylor, 1998). First, individual experience is the prime medium, comprised of prior knowledge and experiences the educator brings to the situation (Mezirow & Taylor, 2009). The second core component of nurturing transformative learning is to question deep-rooted assumptions and beliefs founded on prior experiences through the encouragement of critical reflection (Davis, 2006; Mezirow & Taylor, 2009). Finally, the third component is to have dialogue with others and oneself (Mezirow & Taylor, 2009). According to Mezirow and Taylor (2009), through the medium of dialogue, critical reflection becomes active and individual
experiences are questioned, thereby transforming habits of mind (frames of reference) and giving rise to transformational learning.

Mezirow established nine phases of learning people undergo on the path to transformation: (1) experiencing a disorienting dilemma where an experience challenges one’s pre-existing meaning or structure; (2) performing a self-analysis of one’s thoughts, feelings, and assumptions regarding the transformation; (3) recognizing a link between one’s dissatisfaction and the transformation; (4) exploring options for new roles and actions regarding the transformation; (5) developing self-confidence while embarking towards the transformation; (6) obtaining knowledge and skills for employing one’s plan to carry out the transformation; (7) practicing new roles associated with the transformation; (8) building capacity and self-confidence in new roles; and (9) reintegrating into one’s life the foundation of circumstances driven by one’s new perspective on the transformation that has taken place (Bouchard, 2017; Christie et al., 2015; Mezirow & Taylor, 2009). According to Mezirow and Taylor (2009), these phases are required for transformational learning to occur.

**Transformational Change**

Transformational change is the process by which profound changes emerge in an individual’s beliefs, values, and assumptions (Rohland, 2015). Additionally, transformational change encompasses holistic modifications at all degrees and in all contexts (Mitchel, 2009; Mossop, 2013; Rohland, 2015). In fact, transformational change is not only about influencing a better outcome, it is also about transforming an organization at its core (Mitchel, 2009; Rohland, 2015). More specifically, transformational change is a collective and collaborative method materialized amongst all the members (Clark, 2013; Mitchel, 2009).
Leading the transformation. The expansion of personalized learning across the nation can be accredited to multiple factors including technological growth, the emergence of ubiquitous learning, as well as interest in and exploration of the elimination of mandated instructional seat time (McLester, 2011). Indeed, personalized learning is a disruptive and uncertain change to the century-old one-size-fits-all instructional approach (Kallick & Zmuda, 2017b). This profound and transformative change requires leaders and teachers to explore and desert ingrained beliefs to reshape their roles as administrators and teachers, as well as the embedded knowledge and expectations of what the learning process should encompass (Zmuda et al., 2015). Thus, shifting to a nonlinear, student-centered curriculum will lead to uncertainty and conflict, but will also provide transformative outcomes (Jenkins et al., 2016; Zmuda et al., 2015).

Role of administrators. The role of an administrator from the perspective of transformational change is to aid teachers in their transformative journey as they contend with the intricacy and density of transitioning to a personalized learning environment (Zmuda et al., 2015). Moreover, according to Zmuda et al. (2015), transitioning to personalized learning does not come with an instruction manual for implementation of the transformation. However, there are strategies administrators may consider on their personalized learning journey (Klem & Connell, 2004).

First, an administrator must take a step back from the transformative change to identify their broad understanding of the learning paradigm (Zmuda et al., 2015). According to Kotter (1996), a vision will emerge as clarity of direction of change increases. Specifically, a vision will help administration conceptualize and articulate the why of change, while developing a sense of urgency to implement the change (Grant & Basye, 2014; Hallinger, 2013; Klem & Connell,
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2004; Zmuda et al., 2015). Further, a vision will aid with motivation and the coordination of the actions of people (Kotter, 1996).

Second, school leaders need to create communities of practice (Zmuda et al., 2015) or a team that can lead the transformative change; also called a guiding coalition (Kotter, 1996). Similarly, Thiers (2017) argued, the effectiveness of an administrator in school change depends on the intensity with which he or she partakes in the experience as a learner and collaborates with their teachers to produce desired outcomes. Kotter (1996) explained that without stepping into this role, and thus working in isolation to drive sustainable change, will cause a school leader to fall short of transformation. Therefore, building a coalition with a common goal, aligned with the vision will create collaboration, trust, teamwork and an environment in which teachers feel encouraged to take risks (Kotter, 1996). Consequently, empowering teachers through a grassroots approach allows classroom-level changes to expand systematically (Jenkins et al., 2016).

Third, if transformational change is to occur, administrators must set clear expectations and parameters, while offering teachers flexibility and support within those expectations (Hallinger, 2013; Jenkins et al., 2016). For this reason, administrators must develop environments that will permit teachers to learn, practice, and obtain new skills and abilities (Zmuda et al., 2015). In fact, Zmuda et al. (2015) argue that promoting transformational learning and sustained change requires that teachers be supported and provided conditions to master components of personalized learning. Furthermore, when these conditions and parameters are provided, teachers have the freedom to innovate and transform their deep-rooted instructional beliefs (Jenkins et al., 2016). Thus, administrators who are transparent about their expectations,
accommodate personalized learning efforts, and provide support will produce transformational change (Jenkins et al., 2016; Zmuda et al., 2015).

Lastly, school leaders must supervise the transformational change by managing the predictable needs and apprehensions that will arise as teachers start their personalized learning journey (Hallinger, 2013; Zmuda et al., 2015). Additionally, Zmuda et al. (2015) stated, leaders must balance the need to change with the will to change. In summary, a role of a leader is to help their teachers struggle with the difficulties and learn new skills building capacity while developing their teachers into effective personalized learning instructional practitioners (Hallinger, 2013; Zmuda et al., 2015).

Role of teachers. According to Wolf (2010), change in a teacher’s role is vital to achieving the organic, learner-centered methodological approach that is essential for personalized learning. In fact, Zmuda et al., (2015) stated, the change from a giver of information to a facilitator of information is a paramount shift that occurs through questioning, individual student conferences, and continuous feedback. Further, this role evolution is far different from what the-vast-majority-of teachers have experienced (Zmuda et al., 2015). Nevertheless, transformational change cannot be accomplished by one individual; innovation and transformative outcomes emerge through a coalition passionate about their newly discovered roles (Christie et al., 2015; Mezirow & Taylor, 2009; Zmuda et al., 2015). Therefore, the shift in roles that teachers undergo on their personalized learning journey is subject to their skills, beliefs, and experiences (Grant & Basye, 2014).

Transformative Learning Converges with Personalized Learning

Transformative learning requires gaining knowledge that disturbs prior learning and inspires the reflective restructuring of deeply-rooted knowledge and belief structures (Davis,
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2006). Similarly, Davis (2006) explained that, currently, educational leadership requires moving an organization away from a traditional archetype to a 21st century model and focusing on what life could be. Notably, the personalized learning instructional model focuses on a 21st century education that shifts the learning dynamics between educator and student and fills the gap between the individual student, their learning, and the support they need to be successful (Zmuda et al., 2015). Consequently, the aim of implementing a personalized learning model is to disrupt and challenge an educator’s prior knowledge, beliefs, and values, thereby catalyzing a transformation in the learning experience (Christie et al., 2015; Mezirow & Taylor, 2009; Zmuda et al., 2015).

Administrators can support teachers’ transformation by providing opportunities for their teachers to view issues and concerns through different frames of reference, thereby expanding their perspectives, choices, and decisions (Davis, 2006). Consequently, Davis (2006) claimed, disruptive influences create a feeling of instability that forces the teacher to see the dilemma through a new lens. Specifically, with an educational paradigm shift such as personalized learning (Zmuda et al., 2015) administrators must constructively and convincingly disrupt the deep-rooted modes of thinking and behaviors associated with student-centered learning (Davis, 2006). Therefore, an administrator is responsible for moving their faculty beyond their past experiences by supporting and providing opportunities for personal and professional growth, while challenging their own prior knowledge, values, and beliefs as well as those of their teachers (Christie et al., 2015; Davis, 2006; Mezirow & Taylor, 2009).

In challenging the one-size-fits-all educational model that currently exists with a 21st century non-linear personalized model (Zmuda et al., 2015) educators are reversing their roles from administrators and teachers to students (Stansberry & Kymes, 2007). With the
implementation of personalized learning environments influenced by one-to-one devices, educators are demonstrating components of transformative learning through their own experiences and reflection (Mezirow & Taylor, 2009; Stansberry & Kymes, 2007). In other words, transformative learning occurs when an individual is immersed in a disorienting dilemma such as a personalized learning environment, which challenges their existing perspective (Christie, 2015; Mezirow & Taylor, 2009; Stansberry & Kymes, 2007). In summary, the goal of transformative learning is to aid individuals in challenging and changing the belief and value systems that drive their actions. This experience subsequently, changes the individual (Christie et al., 2015).

**Andragogy Learning Theory**

Malcolm Knowles (1980) argued adults and children learn differently. As a result, Knowles’s proposed the adult learning theory andragogy; emphasizing that adults are self-directed learners (Bartle, 2013; Chan, 2010; Knowles 1980; Knowles et al., 2005; Sharifi et al., 2016). Consequently, Knowles et al., (2005) defined andragogy as, “the art and science of helping adults learn.” (p. 60). More specifically, Knowles suggested adults learn best through a learner-centered approach verses an instructor-focused model (Bartle, 2013; Sharifi et al., 2016). For this reason, according to Knowles et al., (2005) it is imperative to understand the difference between a pedagogical model where the learning is assigned to students with the teacher at the center and an andragogy model where the learning is intended for adults, placing the learner at the center.

According to Knowles et al., (2005), andragogy centers around the learning of the adult and is based on the following assumptions: (1) learner’s need for knowledge; (2) the experiences shaping the learner; (3) learner’s internal motives; (4) the learner’s need to know why they need
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to learn something; (5) real-life application; and (6) self-directed learning. Further, andragogy performs best when the learning model is adapted to fit the learner’s needs and situation (Knowles et al., 2005). According to Bartle (2013) andragogy is an adult learning experience that is self-directed and driven by one’s interests, experiences, abilities, and needs (Bartle, 2013).

In summary, Knowles et al., (2005) stated the andragogical model is not a philosophy, rather it is a theory centered on a set of assumptions that are constructed on multidirectional interactions supporting the learning environment. Further, andragogy focuses on learning centered around real-life applicable tasks and problems for adults to solve by being active participants in the learning experience (Sharifi et al., 2016). Additionally, with the learner co-creating their learning scripts and driving their learning based on their own life experiences, andragogy transforms the learning from acquisition to one that is inquiry based and self-directed (Bartle, 2013). Moreover, according to Bartle (2013), as the adult learning curriculum shifts from being content-focused to supportive centered the learning becomes more engaging, meaningful, and purposeful.

**Role of the administrator.** According to Knowles et al., (2005) for adult learning to emerge it is paramount for effective leaders to empower others to drive change by releasing individual creative energy. More specifically, Knowles et al., (2005) stated, for andragogy to have sustainable change, innovative and effective leaders must: (1) implement a flexible structure with roles defined; (2) establish a people-centered, cooperative and caring climate; (3) identify and support the specific learner needs and interests; (4) design sequential professional developments to achieve the goals of the initiative; (5) Collaborate with staff in making decisions regarding the initiative and encourage them to be self-directed; (6) establish and open line of communication that is multidirectional; and (7) be committed to the process of change by
evaluating the quality of the experience and to constantly amend the practice as needed. In conclusion, andragogy explains the why adults are learning while focusing on placing the adult learner at the center (Knowles et al., 2005).

**Ubiquitous Computing**

Sakamura and Koshizuka (2005) defined ubiquitous computing as a communicative technology that employs a vast number of collaborative nodes with computing and communication abilities, including radio frequency identification (RFID), smart cards, and tiny mobile devices. In other words, ubiquitous computing utilizes wireless communication and sensor technologies to sense the context of our everyday lives and present appropriate individual and personal resources (Hwang et al., 2009). The aim of ubiquitous computing is to develop an environment in which one’s experiences and value of life are enhanced, by examining and supporting people utilizing ubiquitous technologies and computation simultaneously (Georgievski & Aiello, 2016).

**Ubiquitous computing technologies in learning.** According to Peng, Chou, & Chun-Yu (2008), students are no longer encountering a desktop computer in a foreseeable and expectable classroom environment. Therefore, computing devices and applications are moving beyond the desktop, resulting in an evolving ubiquitous computing movement (Georgievski & Aiello, 2016; Peng et al., 2008). Consequently, learners are now being confronted with diverse mobile devices, exploring various online platforms, and asked to operate the devices and mediums in multiple environments (Peng et al., 2008). Moreover, the intricacy and complexity of these ubiquitous learning environments are reaching a threshold where traditional solutions will no longer produce the outcomes needed (Georgievski & Aiello, 2016). In fact, Peng et al.
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(2008) argue that this computational paradigm will harvest new outcomes through the production of new opportunities for connectivity among learners, computers, and environments.

The process of learning becomes personalized when the continuous evolution of technology is coupled with the deployment of ubiquitous computing technologies (Yahya et al., 2010). Further, Yahya et al. (2010) explain that when technology is continuously and consistently communicating information to the learner’s mobile device learning becomes fluid. Moreover, ubiquitous computing provides students with information and personalized support and assistance when they need it, by automatically detecting and producing the desired context (Cheng & Marsic, 2002).

Ubiquitous Learning

Ubiquitous learning is a learning paradigm that emerged from the enhancement of wireless communication, online networks, computing capabilities, and adaptive software (Yahya et al., 2010). According to Yahya et al. (2010), ubiquitous learning streamlines the process of knowledge acquisition by identifying and providing the precise information the learner wants and needs to understand from the infinite quantity of available information. In an ideal ubiquitous learning environment mobile computing, communication, context awareness, and sensor devices are merged into the learner’s everyday life to create an immersive, supportive, and tailored learning experience (Hwang Chin-Chung, & Yang, 2008; Shih et al., 2011).

There has been significant growth in digital learning caused by the continuous technological advances over the past few decades (Hwang et al., 2008; Shih et al., 2011). More specifically, with the evolution of online learning, the expansion of mediums through which information can be accessed and communicated, and the development of sensor technology, has led to the development of learner technology that is capable of sensing students’ contextual and
behavioral learning in the real world (Hwang et al., 2009; Yahya et al., 2010). Further, this new learning technology is capable of adapting and tailoring the learning process to the student’s goals and activities (Hwang et al., 2009). This new learning model is known as ubiquitous learning (u-learning) (Hwang et al., 2009; Sakamura & Koshizuka, 2005; Yahya et al., 2010). Moreover, u-learning utilizes ubiquitous computing technology and infrastructure to allow students to learn anything at anytime and anywhere (Hwang et al., 2009; Sakamura & Koshizuka, 2005; Yahya et al., 2010). In fact, u-learning emphasizes the anywhere, anytime, and anyplace learning by taking the educational experience outside the brick and mortar walls of a classroom (Hwang et al., 2009; Yahya et al., 2010).

Ubiquitous learning emerged as education moved from a traditional model to a 21st century model (Wang & Wu, 2011; Yahya et al., 2010). More specifically, u-learning is an extension of other learning paradigms, namely (1) electronic learning (e-learning) where learning is fixed and conducted electronically or more specifically online; and (2) mobile learning (m-learning) which is an extension of e-learning that originated with advancements in wireless communication and allows learning to be accessed through a mobile device anytime and anywhere (Hwang et al., 2008; Hwang et al., 2009; Yahya et al., 2010). Because of recent technological advances, u-learning does not have the same limitations of e-learning and m-learning (Yahya et al., 2010). According to Yahya et al. (2010), u-learning uses radio frequency identification, smart cards, sensor network nodes, and mobile devices to move learning beyond acquiring knowledge anytime and anywhere to learning the correct content at the precise time in the right way. In summary, u-learning provides the learner with the precise information they wish to learn anytime, anyplace, and anywhere (Hwang et al., 2009; Yahya et al., 2010).
**Ubiquitous learning and personalized learning.** In the traditional classroom model, a student’s learning is limited by a prescribed teaching activity and a one-size-fits-all learning methodology (Wang & Wu, 2011). Specifically, the conventional learning model restricted learners from receiving immediate context-based assistance and the proper resources to progress in their learning process (Wang & Wu, 2011). Notwithstanding, with advances in wireless communication, mobile internet access, and ubiquitous computing, learning has been freed from the traditional educational paradigm (Wang & Wu, 2011; Yahya et al., 2010). Furthermore, Wang and Wu (2011) argued that it is imperative to consider the personalized components of the learner to guarantee technology achieves the intended outcomes when it is infused into the classroom. In conclusion, ubiquitous learning technologically enhances individual assistance and supports anytime and anywhere, thereby influencing the personalization of learning (Shih et al., 2011; Wang & Wu, 2011).

**Topical Research**

This section of chapter two will consist of the study’s topical research. According to Ravitch & Riggan (2017), topical research refers to the research concentrating on the context being studied. As a result, this section will comprise of research about personalized learning and one-to-one devices. In summary, this section will aid to discuss the what of the research (Ravitch & Riggan, 2017).

**Personalized Learning**

**History of personalized learning.** Personalized learning is an instructional model and practice with roots that date back to the 1700s, when Jean-Jacques Rousseau advocated for schools to be constructed on individual abilities and choices to enhance the intrinsic motivations of the learner (Yonezawa, McClure, & Jones, 2014). Two hundred years later in 1916, John
Dewey published “Democracy and Education,” which advocated for putting the student at the center of the learning process instead of the curriculum. Dewey stated, “education is not an affair of ‘telling’ and being told, but an active and constructive process” (p. 38). Dewey viewed education as a social interaction between educators and learners and believed learning should be built on student interest and experiences (Dewey, 2004).

Following Dewey’s publication, Helen Parkhurst founded the Dalton plan in 1919. The goals of the Dalton plan were to customize each learner’s educational process to his or her preferences, interests, and ability, to support a balance of autonomy and teacher-directed learning, and to enrich a learner’s social skills and accountability (Dewey, 1922; Zmuda et al., 2015). Thus, students are placed at the center of their learning and in this process, discover their interests, increase engagement, and become self-regulated learners (Van, 2013). Similarly, Dolores Medio, a rural teacher, emulated this student-centered curriculum practice in Spain (Eryman & Bruce, 2015). Likewise, Roger Cousinet in France began experimenting with the belief, derived from Dewey, that education is no longer a sit and get action; education is an activity where the student is in control of their learning, in an environment where the teacher is a facilitator of knowledge (Raillon, 1993). In fact, similar progressive educational schools based on the concept of placing the student at the center of the curriculum were established in Western Europe by Maria Montessori, Ovide Decroly, Celestin Freinet, and Peter Peterson (Terwel, 1999).

The 1960s saw the pedagogical movement of constructivism whereby, students became active participants in their learning process (Terwel, 1999; Wong Ying, 2010). In the late 1960s, Fred Keller designed the personalized system of instruction (PSI) which enabled students at the University of Brasilia to learn content without the constant presence of an instructor (Eyre,
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2007). The PSI framework included five components: (1) content mastery to advance learning; (2) lectures and demonstrations as agents of motivation; (3) feedback; (4) self-pacing; and (5) the teacher as a facilitator (Eyre, 2007; Keefe, 2007). Additionally, Nancy McCormick Rambusch established the American Montessori Society (AMS) during the 1960s (Povell, 2005). Further, Povell (2005) stated that the hallmarks of AMS were: student-centered learning, individualized learning paths, students learning at their own pace, multiage classrooms, and self-reflection.

During the mid-1970s, Anne Welch from the University of Denver revised the connection between general and special education by focusing on each student’s personalized education (Keefe, 2007). According to Keefe (2007), Ann Welch believed students must have learning goals and the role of teachers is as a facilitator. Additionally, during this time, Victor Garcia Hoz (1972) established the meaning and scope of the term personalization. Finally, in 1990 the Individuals with Disabilities Act mandated that every student with a disability be provided with an individual education plan (IEP; Harmon, 2016). An IEP considers each student’s learning preferences and needs and creates learning goals and supports to facilitate the student’s success (Harmon, 2016).

Complexity in defining personalized learning. The implementation of personalized learning environments has increased over the last ten years due to the explosion of technology platforms and digital content (Dewey, 2004; Pane et al., 2015; Penuel & Johnson, 2016), yet, personalized learning lacks an operational definition (Horn, 2017; Pane et al., 2015). Herold (2016) argued, the purpose, tools, and instructional techniques that encompass personalized learning and its definition vary considerably. Additionally, Kallick and Zmuda (2017b) explained that personalized learning is an umbrella term under which multiple tools, strategies,
and practices fit. In line with this, Zmuda et al. (2015) has claimed, the term has been used too broadly to encompass a multitude of instructional strategies and standards.

Nonetheless, many practitioners embrace the concept of personalized learning and its departure from the traditional approach to education (Pane et al., 2015; Penuel & Johnson, 2016). In their study, Patrick, Kennedy, and Powell (2013) defined personalized learning as customizing learning to students’ needs and interests. In opposition with the more-traditional strategies and approaches, Pane, Steiner, Baird, Hamilton, & Pane (2017) claimed, personalized learning prioritizes the learner’s academic goals and needs by customizing the instruction to address the identified learning targets and needs. Additionally, in 2010, the U.S. Department of Education established the following definition for personalized learning in the National Educational Technology Plan:

> Personalization refers to instruction that is paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners. In an environment that is fully personalized, the learning objectives and content as well as the method and pace may all vary. (p. 12)

More recently, Patrick, Worthen, Frost, and Gentz (2016) defined personalized learning as “tailoring learning for each student’s strengths, needs and interests—including enabling student voice and choice in what, how, when and where they learn — to provide flexibility and supports to ensure mastery of the highest standards possible” (p. 1). However, Zmuda et al. (2015) argued “personalized learning is a progressively student-driven model in which students deeply engage in meaningful, authentic, and rigorous challenges to demonstrate desired outcomes” (p. 7).

**Conceptualization of personalized learning.** Personalized learning requires an inclusive understanding of the student, their ability, skill level, interests, and prior knowledge
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(Kallick & Zmuda, 2017b). This instructional model is student-driven, opens learning pathways and encourages student agency in their own education process (Grant & Basye, 2014). The premise of the model is twofold: (1) personalized learning environments bridge the gap between individual students, their learning process, and the support they need to achieve relative to their interests (Grant & Basye, 2014; Patrick et al., 2013; Zmuda et al., 2015); and (2) personalized learning attains more transformational results in conjunction with more contemporary outcomes (Zmuda et al., 2015). In other words, personalized learning provides the tools, skills, and mindsets needed for our young citizens to be successful in a global economy (Kallick & Zmuda, 2017b).

Personalized learning is an instructional model and practice with multiple modes of implementation and an ill-structured conceptual definition (Horn, 2017; Patrick et al., 2013; Penuel & Johnson, 2016; Zmuda et al., 2015). Nonetheless, there are three common principles of personalized learning that have emerged from the literature: (1) learning paths enhance and strengthen learning by customizing instruction to each learner’s individual needs, interests, and abilities (Pane et al., 2015; Rickabaugh, 2016; Zmuda et al., 2015); (2) creating multiple learning experiences where students co-design their learning process preparing them to be successful global citizens (Bray & McClaskey, 2015; Clarke, 2013; Pane et al., 2015; Rickabaugh, 2016; Zmuda et al., 2015); and (3) learning becomes student-centered as teachers become facilitators and managers who support individual learning environments and increase student agency (Kallick & Zmuda, 2017b; Pane et al., 2017; Patrick et al., 2013; Rathgeber, & Mamenta, 2017). To conclude, personalized learning involves putting the student at the center of the curriculum by empowering the student to co-design their instructional process and learning script.
Elements of personalized learning. In spite of the wide range of personalized learning models and practices (Pane et al., 2017) there are several essential elements in a personalized environment: (1) flexible and anywhere learning opportunities that occur in learning environments that contain dynamic communities which allow learning to extend outside the brick-and-mortar traditional classroom (Grant & Basye, 2015; Patrick et al., 2013; Wolf, 2010); (2) the teacher as the facilitator of information versus the gatekeeper of knowledge (Patrick et al., 2013; Rickabaugh, 2016; Wolf, 2010); (3) authentic learning opportunities that support 21st century skills and align with student interests and learning preferences (Grant & Basye, 2014; Wolf, 2010); (4) student agency and autonomy supported by individual learning plans; learning is student-centered and aligned to an individual’s needs, learning modalities, interests, and abilities supporting the student as they reach their highest potential and master content (Grant & Basye, 2014; Kallick & Zmuda, 2017b; Patrick et al., 2013; Rickabaugh, 2016; Wolf, 2010); (5) mastery-based progression opportunities allow students to work at their own speed while strengthening a specific skill as they master the standards aligned to their learning needs (Grant & Basye, 2014; Patrick et al., 2013; Wolf, 2010); (6) frequent feedback, which provides students with an adaptive learning process that facilitates fulfillment of their learning needs (Patrick et al., 2013); and (7) critical thinking (Grant & Basye, 2014; Patrick et al., 2013) supported by technology, which provides students and teachers with a wide variety of content, resources, and learning opportunities anywhere and at any time (Grant & Basye, 2014; Rickabaugh, 2016). In summary, personalized learning allows educators to move past the traditional educational inputs to one that is student-centered and tailored to individual needs, preferences, and interests; thus providing learners with autonomy and agency while supporting them throughout their learning journey (Grant & Basye, 2014; Patrick et al., 2013; Rickabaugh, 2016; Zmuda et al., 2015).
Personalized learning compared to similar models. The adoption of personalized learning allows the educator to meet the student where they currently are academically and build capacity by prioritizing the student’s needs, preferences, and interests; they co-create the learning process to achieve the student’s goal (Pane et al., 2015). Indeed, personalized learning sounds like other instructional frameworks, such as differentiation, individualization, and blended learning that tailor instruction for the student (Zmuda et al., 2015) and with the fundamental goal of aiding students to reach their learning potential, educators have implemented multiple instructional approaches to meet various learning preferences (Grant & Basye, 2014). Thus, the following depicts the similarities and differences between personalized learning and other instructional frameworks.

Differentiation. Differentiation is an instructional learning approach where the content, process, product, or the learning environment is customized to the students in the classroom (Zmuda et al., 2015). More importantly, the teacher regulates the design and administration of the learning experience for groups of students (Green & Mahoney, 2017; Kallick & Zmuda, 2017b). In the differentiated instructional approach, the learning targets are identical for all learners, but the learning modality varies based on the needs of the learner (Grant & Basye, 2014). Conversely, personalized learning provides students with agency and autonomy in their learning process as they design, analyze, and refine their demonstration of mastery (Kallick & Zmuda, 2017b; Zmuda et al., 2015).

Individualization. With individualization, the teacher develops a learning “playlist” and assigns individual students to learning tasks, usually through a digital tool (Green & Mahoney, 2017; Zmuda et al., 2015). The student controls the pace of their learning while the learning can take place anywhere and anytime (Kallick & Zmuda, 2017b). In contrast, personalized learning
gives the student agency in their learning process while they co-create their learning path (Green & Mahoney, 2017); and engagement is based on relevancy to the student not completion of the given task (Zmuda et al., 2015).

**Blended learning.** According to Christensen et al. (2013), blended learning is an instructional strategy where students use multiple mediums to demonstrate mastery. Blended learning has the following attributes: learning happens online, but some of it occurs in school while the rest may occur at home or in another setting, and students having some influence over the time, place, path, and pace of their learning (Christensen et al. (2013). Blended learning liberates students from the teacher-driven “sit and get” traditional approach to learning (Zmuda et al., 2015). Conversely, according to Patrick et al. (2013), personalized learning empowers students with autonomy and agency over how, what, when, and where they will learn. In summary, Zmuda et al. (2015) argued that blended learning is an instructional strategy and how educators harness this strategy within a personalized learning model is what makes blended learning effective.

**Ubiquitous learning.** Is a learning model, grounded in ubiquitous computing technology, that allows a student to gain specific information and knowledge anytime and anyplace (Hwang, et al., 2009; Sakamura & Koshizuka, 2005; Yahya et al., 2010). Unlike personalized learning, ubiquitous learning allocates specific information through the communication of sensors (Hwang et al., 2009; Yahya et al., 2010). More specifically, these sensors can identify the student’s learning environment and needs and tailoring the learning process accordingly (Hwang et al., 2009).

**Summary of instructional models.** Although, these models have similarities in some respects; there are significant differences, specifically concerning the amount of autonomy and
agency students have over their individual learning experience (Kallick & Zmuda, 2017b). According to Zmuda et al. (2015), meeting students where their individual learning preferences, needs, and interests are and growing their capacity while promoting student agency and autonomy is timeless. For these reasons, a personalized learning model provides opportunities for students to meaningfully mold their learning experience by designing, implementing, monitoring, and evaluating their learning process (Kallick & Zmuda, 2017b). In summary, learners engaged in a personalized learning model are provided various learning pathways and allowed to build their skills and knowledge base through multiple modalities and continuous real-time feedback (Grant & Basye, 2014).

**Transitioning to personalized learning.** With an upsurge in technology and the desire to improve academic achievement of all students there has been a wave of interest centered around personalized learning (Bingham, Pane, Steiner, & Hamilton, 2018). Moreover, the factors that have stimulated the rise in personalized learning environments are: (1) the need to better prepare young citizens to be successful in a global economy; (2) the desire to leverage the expansive technological advances; and (3) the need to transition from the limited and constricted traditional learning paradigm that only meets the needs of some students to a model that meet the needs of all students (O’Donoghue, 2009). With the rise in personalized learning environments comes the need to better understand the transitional process from a conventional learning paradigm to a nonlinear customized learning experience (Bingham et al., 2018; O’Donoghue, 2009; Zmuda et al., 2015).

Zmuda et al. (2015) shared the overall goal of implementing a personalized learning model is to have learners believe the work they are completing is important and relevant. Notably, the best strategies for implementing a personalized learning instructional model have
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yet to emerge in the literature (Pane et al., 2017). Nevertheless, making a personalized learning model transformation requires a shift in the pedagogical capacity of leaders and teachers (Zmuda et al., 2015). In conclusion, Bingham et al., (2018) argued, understanding the transitional process will help to elicit the effectiveness of the transformational change to a personalized learning model.

**Transition for leaders.** Transitioning to a systematic personalized learning model is a disruptive process that requires school leaders to examine and alter their deep-rooted beliefs in their roles as educators (Zmuda et al., 2015). Specifically, this transition requires: (1) providing teachers access to references and resources; (2) providing teachers with time to collaborate with one another on best practices; (3) empowering teachers and building leadership capacity within the school; (4) supporting teachers along their learning process and pedagogical transformation; (5) identifying the needs of teachers and developing learning platforms that support those needs; and (6) technology management (Bingham et al. 2018; Jenkins et al., 2016; Pane et al., 2017; Zmuda et al., 2015). In summary, a school’s degree of support, skills, and needs must align with the learning preferences and needs of the teachers in-order-to achieve a sustainable and transformational change (Bingham et al., 2018).

Moreover, transforming to a personalized learning instructional approach cannot be completed alone; leaders must create a culture rooted in high expectations and offer feedback and direction in instructional planning and strategies (Zmuda et al., 2015). Furthermore, Zmuda et al. (2015) stated, it is imperative for administrators to support and aid their teachers with the challenges of the transition from a one-size-fits-all education model to a personalized learning approach. Bingham et al. (2018), claimed for the transition to a personalized learning environment to be successful it is critical for administrators to design and support teacher
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preparation and development opportunities. More specifically, administrators must effectively prepare, develop, and support their teachers to implement personalized learning practices (Bingham et al., 2018).

Transition for teachers. In a personalized learning environment, there is a shift from a teacher-directed role to a student-centered role (Kallick & Zmuda, 2017b; Rickabaugh, 2016; Zmuda et al., 2015). Teacher roles shift from being the sole gatekeeper of knowledge to becoming partners with their students (Bray & McClaskey, 2013). According to Bray & McClaskey becoming partners in the learning journey consists of: (1) including students in creating engaging learning environments; and (2) adding students as co-designers in the learning process.

With this shift comes a change in the understanding of one’s curriculum, instruction, and assessment (Jenkins et al., 2016; Zmuda et al., 2017). More specifically, according to Jenkins et al. (2016), a teacher-facilitated student-centered curriculum is vital to the success of implementing a personalized learning environment. Additionally, instruction is altered by changes in the scheme, control, differentiation, management, and capacity (Jenkins et al., 2016; Zmuda et al., 2015). Moreover, teachers must act on instructional decisions at the classroom level to achieve independence in facilitating student mastery (Jenkins et al., 2016). Further, to gauge and adapt a student’s learning journey, assessments need to be multifaceted and varied, with timely and continuous feedback, coupled with nonstop monitoring of student progression on daily activities (Jenkins et al., 2016; Kallick & Zmuda, 2017b; Zmuda et al., 2015). In conclusion, Bingham et al., (2018) argued assessments should include varied outcomes and mediums for demonstrating learning progress and mastery of standards.
In summary, the process of transitioning to a personalized learning environment within the classroom first begins with teachers understanding who their students are and how they learn best (Bray & McClaskey, 2013). According to Bray & McClaskey (2013), teacher’s must understand their student’s learning preferences, abilities, interests, and needs. Bingham et al. (2018), claimed the next steps are: (1) personalizing learning paths that are adaptive to student needs, progress, and interests; (2) continuous progress monitoring toward student created learning goals; and (3) taking the learning outside the brick and mortar walls to an anywhere, anytime, and anyplace learning space. Furthermore, Bingham et al. (2018) argued teacher’s individual beliefs about personalized learning and leveraging instruction with one-to-one devices could hinder or aid the implementation. In conclusion, the transition to a personalized learning environment will require a departure from traditional teaching practices to more unconventional instructional practices leveraging technology to customize individual learning journeys (Bingham et al., 2018).

One-to-One Initiatives

History of one-to-one initiatives. Teachers have used technology to leverage their instructional practices since the 1920s using films and radios (Cuban, 1993). However, it was not until the 1980s, when the microcomputer became accessible in the classroom, that the paradigm shifted from conventional learning strategies of producing a product to a cognitive process of learning based on critical thinking and problem solving (Delgado et al., 2015; Saettler, 2004). In 1980, Seymour proclaimed, “We are at the point in the history of education when radical change is possible, and the possibility for that change is directly tied to the impact of the computer” (p. 36).
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The ratio of students to devices has decreased from 125:1 in 1983 to 4:1 in 2002 to 1.7:1 in 2015 (Delgado et al., 2015; Russell, Bebell, & Higgins, 2004). More recently, is the emergence of educational technological applications and the access every student may have through a one-to-one initiative (Bebell, 2005). In fact, Bebell (2005) states, the first 1:1 laptop initiative commenced in 1989 at the Ladies’ Methodist College in Australia.

Although one-to-one initiatives began nearly 30 years ago, the research in this discipline has not been able to keep pace with the expansion and evolution of technology (Penuel, 2006). Additionally, Penuel (2006) stated, most of the existing research bore methodological problems. Further, past one-to-one initiatives were driven by economic interests rather than by educational ones (Penuel, 2006). According to Ross and Gibson (2007), those initiatives resulted from the Neoliberalist approach to education where standards and performance goals were set by outside entities and individuals were held directly accountable. Consequently, most of the research studies conducted during this time discuss and describe the implementation process and provide initial descriptions of the effect of the initiatives on student learning (Bebell, 2005; Lei & Zhao, 2008) as described in the subsections below.

Apple classrooms of tomorrow (ACOT). Early one-to-one initiatives provided teachers and students with desktops both at home and at school, with little to no access to the internet (Penuel, 2006). In 1986, the Apple Classrooms of Tomorrow (ACOT) project was launched to determine how the routine use of technology by educators and learners would influence instruction and academic growth (Dwyer, 1994). The study examined technology implementation in five classrooms over ten years (Sandholtz, Ringstaff, & Dwyer, 1997). The program specifically focused on instructional evolution, barriers encountered, and the efficacy of instructional practices (Dwyer, Ringstaff, & Haymore, 1990).
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In the beginning of the ACOT program, the research showed the technology did not transform instruction (Sandholtz et al., 1997). In fact, the early implementation of technology simply digitized the textbook for teacher-directed delivery; however, over time this model was slowly transformed by more relevant and motivating learning (Dwyer, Ringstaff, & Sandholtz, 1991; Sandholtz, Ringstaff, & Dwyer, n.d.). As a result, during the beginning of the ACOT project, student learning tasks remained unaffected by technology (Dwyer et al., 1990).

Dwyer et al. (1991) found that teachers using technology progressed through five stages of instructional development over time: “entry, adoption, adaptation, appropriation, and invention” (p. 47). Thus, through time and commitment, technology can transform learning environments into engaging, creative, and interactive spaces where learning becomes constructed versus prescribed (Dwyer et al., 1990; Dwyer et al., 1991). In conclusion, the ACOT study found technology implementation yielded multiple positive influences on learners when the computers were used for the holistic curriculum framework as a tool adjusted to the different interest and skills of individual students (Sandholtz et al., 1997).

A second project, Apple Classrooms of Tomorrow – Today (ACOTABATHA), was a collaborative effort between secondary schools, higher education institutions, and Apple to identify effective approaches to leveraging technology to enhance teaching and learning (Apple Computer, 2008). The ACOTABATHA (2008) report was composed of three phases: (1) creating the design elements of the 21st century school; (2) providing online resources and references for students and teachers; and (3) applying the design elements to prepare students for a 21st century global workforce. Based on the ACOTABATHA research, Apple Computer (2008) claimed that technology innovations are key drivers for more engaged teaching and learning.
**Post-ACOT.** In the mid-1990’s Microsoft’s Anytime, Anywhere Program was designed to explore one-to-one laptop implementation processes in twenty-six schools and the impact of the initiative on teaching and academic growth (Rockman et al., 1997). According to Rockman et al. (1997), the implementation of technology for digital access was not effective; however, leveraging technology during instruction while building capacity was successful. Following this, in 2002 the Maine Learning Technology Initiative became the nation’s first statewide one-to-one program and supplied seventh and eighth grade teachers and students with laptops (Waters, 2009). In 2009, the program was expanded to Maine high school students and their teachers (Fairman, 2004). The goal of the initiative was to prepare Maine’s learners for a global workforce by utilizing technology to enhance student learning experiences (Silvernail et al., 2003).

One-to-one initiatives have been growing rapidly since the beginning of the 21st century. According to Argueta et al. (2011), many states, districts, and schools have adopted a one-to-one initiative including: (1) Texas Immersion Pilot in 2003; (2) New Hampshire’s 1:1 program in 2003 (Bebell, 2005); (3) Florida’s Leveraging Laptops program in 2006; (4) Michigan’s Freedom to Learn program in 2006; (5) North Carolina’s 1:1 Learning Technology Initiative 2006; (6) Pennsylvania’s Classrooms for the Future in 2009; and (7) in 2010 Forsyth County Schools in Georgia introduced a technology initiative to innovate instruction (McLester, 2011). In fact, research by Lei and Zhao (2008) showed that there were at least 33 schools implementing one-to-one initiatives in 2007.

Additionally, as large-scale one-to-one initiatives were increasing in popularity in the United States they were also gaining global momentum with the help of the One Laptop per Child (OLPC) initiative (Richardson et al., 2013; Valiente, 2010). More specifically, during the
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early 21st century, one-to-one initiatives were deployed in Latin American and Caribbean countries including: (1) Brazil (Um Computador por Aluno program) and Uruguay (Plan Ceibal program) in 2007; (2) Peru (Una Laptop Por Nino program), Mexico (Digital Backpack initiatives), and Haiti (the Haitian Ministry of Education and Vocational Training partnered with the Inter-American Development Bank and implemented an one-to-one pilot program) in 2008; (3) Chile (Laboratorio Movil Compuacional program) in 2009; and (4) Argentina (Conectar Igualdad program), Trinidad and Tobago (eConnect and Learn program), and Ecuador (Mi Compu program) in 2010 (Nugroho & Lonsdale, 2010; Severin & Capota, 2011). Similarly, one-to-one initiatives were also gaining traction in the Eastern Hemisphere: (1) one-to-one initiatives were pioneered in Australia in 1989, 2009 and 2012; (2) Austria, Portugal, and Rwanda each invested in one-to-one programs in 2008; (4) Spain, Austria, and Russia launched their initiatives in 2009; and (5) Turkey, Thailand, and the Philippines deployed their one-to-one initiatives in 2011 (Nugroho & Lonsdale, 2010; Severin & Capota, 2011; Valiente, 2010). In conclusion, with the aid of the OLPC, manufacturing of less expensive computers, and the development of new technological applications, one-to-one initiatives have been proliferating at a rapid pace in classrooms across the globe (Richardson et al., 2013; Nugroho & Lonsdale, 2010; Severin & Capota, 2010; Valiente, 2010).

Impact of one-to-one learning initiatives. With the explosion of technology, interest in adoption of one-to-one computing initiatives has increased (Argueta et al., 2011; Bebell & Kay, 2010; Bebell & O’Dwyer, 2010). Early studies affirm that one-to-one initiatives had several positive results including: increased student engagement (Bebell, 2005; Cromwell, 1999; Penuel, 2006) and support for a student-centered learning approach (Rickabaugh, 2016; Rockman et al., 1997; Zmuda et al., 2015). At the same time, the research has highlighted the complexities and
challenges that hinder successful implementation of the initiatives including: teacher attitudes and beliefs about technology and the curriculum, the efficient use of technology, and the lack of evidence on teaching and learning (Bebell & Kay, 2010; Bebell & O’Dwyer, 2010; Drayton, Falk, Stroud, Hobbs, & Hammerman, 2010; Gherardi, 2017; Penuel, 2006; Weston & Bain, 2010). Hence, there is much deliberation about what factors determine the effectiveness and success of a one-to-one program and whether technology is having a meaningful impact on student learning and educational improvements (Bebell & Kay, 2010; Bebell & O’Dwyer, 2010; Delgado et al., 2015; Weston & Bain, 2010).

**One-to-one implementation.** The ambiguity of research on one-to-one initiatives drives a wedge between the studies that support technology in classrooms (Bebell, 2005; Delgado et al., 2015; Penuel, 2006) and the studies that oppose the value behind one-to-one computing environments (Hu, 2007). The researchers who oppose such initiatives have found that research on one-to-one initiatives were inadequate due to implementation problems, lack of a standardized implementation process, and the absence of teaching practices that bridge the gap between the use of a digital platform in conventional methods and using technology as a tool to leverage instruction (Weston & Bain, 2010). On the other hand, one-to-one initiatives were successful when: (1) professional development was deployed to provide teachers with the abilities to use technology properly and effectively; (2) teachers held positive beliefs about students, leveraging technology to enhance instruction, and access to quality digital content; and (3) there was effective and efficient implementation of technology in the classroom (Penuel, 2006).

The efficient use of technology within classrooms influences a one-to-one program’s success and effectiveness (Penuel, 2006). Even more, there is a disconnect between using
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computers and the intended outcomes (Weston & Brooks, 2010). Furthermore, Weston & Brooks (2010) found what does exist in technology rich classrooms are books replaced by websites, chalkboards with interactive boards, and filing cabinets with electronic files. Consequently, none of those address the intended outcomes of improved teaching and learning (Weston & Brooks 2010). Instead, the digitization of conventional methods empowers the educational paradigm that already exists by complimenting the traditional teacher-led whole group instructional model; flat lining student achievement (Weston & Brooks, 2008).

Conversely, when educational technology is used as a cognitive tool, the bridge will be constructed connecting one-to-one initiatives to transforming education (Jonassen, 2008). Similarly, research by Geherardi (2017) found, it is not until the high expectations placed on one-to-one initiatives are shifted away from using technology as a resource and towards the use of technology as a lever for the paradigm change will there be an understanding of the potential these programs can have.

Despite the increased attention on one-to-one initiatives, there is very little empirical evidence on improving teaching and student outcomes within technology driven environments (Bebell & Kay, 2010; Bebell & O’Dwyer, 2010; Weston & Bain, 2010). For example, Silvernail and Lane (2004) argued that 15 months after the implementation of the Maine Learning Technology Initiative, eighth graders’ performance on the Maine Education Assessments did not change. Similarly, there was no evidence of a relationship between the Texas Immersion Pilot and student-centered learning, satisfaction with schoolwork, or performance on the Assessment of Knowledge and Skills standardized test (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2009). In contrast, Babell and Kay (2010) and Shapley et al. (2009) showed that one-to-one initiatives produced positive increases in standardized test scores with language arts with more
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frequency than mathematics. Additionally, Dunleavy and Heinecke (2007) found that on one-to-one initiatives improved student achievement on science tests. In conclusion, to research the influence one-to-one initiatives are having on teaching and learning there needs to be an understanding of how the technology is being used, the framework, purpose, and how the use impacts teaching and learning in a multifaceted social environment (Lei & Zhao, 2008).

**Roles of leaders.** According to Sheninger (2014), school leaders need to understand the essence and actual value of educational technology to produce a technological shift. Furthermore, research by Mitchel (2009) showed the utilization of technology at a systematic level has the potential to change deep-rooted beliefs about technology, instructional practice, and student learning. School leaders facilitating this change need to be innovative, knowledgeable, and able to move schools toward a future that is continuously evolving (Sheninger, 2014). Further, Sheninger (2014) stated that the action of leaders will determine the fortune of schools. In line with this, Demesky (2012) identified seven qualities leaders should demonstrate to drive a systematic digital transformation: (1) develop an environment that encourages innovation; (2) foster collaboration amongst teachers and administrators; (3) be vulnerable to new ideas; (4) model the use of technology and be connected; (5) support faculty and provide resources to aid them in the transition; (6) take risks; and (7) be a visionary with a focus on the intended direction of the school. In summary, initiating and sustaining digital transformation is about changing the way administrators lead, their mindset, and their professional behavior.

**Role of teachers.** Additionally, educational technology is a new model in education and the extent to which teachers embrace this paradigm shift will influence the program’s effectiveness and success (Bebell & Kay, 2010; Gherardi, 2017). Bebell and Kay (2010) claimed it is “impossible to overstate the power of individual teachers in the success or failure of
1:1 computing” (p. 47). The degree to which an educator implements technology is based on their philosophy of technology in learning and access to meaningful and significant digital information (Apple Computer, 2005). For example, teachers who believe in student autonomy and agency in the learning process are more likely to implement and utilize technology to leverage the desired outcomes (Apple Computer, 2005; Dwyer et al., 1990). Drayton, et al. (2010) argued that teachers’ implementation of technology is directly correlated to their beliefs about the advantages of certain technologies and the influence of such technologies on student learning and engagement. In summary, one-to-one technology has been labeled as the new paradigm in education and the extent to which teachers believe in this shift will directly impact the outcomes of future studies and sustainability of the initiatives (Gherardi, 2017).

**Technology and Personalized Learning**

The idea that interactive technology may help improve the role of education is not a new idea. However, using technology to continuously monitor students, manage their learning needs, provide access to a platform of learning that is engaging, provide copious resources, and meet the diverse learning preferences and interests of all learners outside the traditional brick and mortar environments is a new concept (Wolf, 2010). Grant and Basye (2014) claimed that when technology is employed to enhance instructional practices, the learning delivers student independence, ownership, engagement, and personalization.

Rickabaugh (2016) reports that simply having access to abundant amounts of technology does not enhance student learning or create a personalized learning environment. In fact, research has shown there is little evidence that investing ample amounts of money in technology increases student learning or implies a learner is invested in a personalized learning environment (Grant & Basye, 2014; Tamim, Bernard, Borokhovski, Abrami, & Schmid, 2011). Only when
technology is used as a tool placing the student at the center, is the learning experience enhanced; making the learning more efficient by providing learners with the avenues to receive and engage in their curriculum and have various options for demonstrating mastery (Grant & Basye, 2014). Additionally, Grant & Basye (2014) argued, personalized learning requires moving beyond the digitization of conventional learning to create customized learning that leverages technology and empowers students to drive their own learning.

Digital tools can stimulate student-centered learning by providing learners with increased autonomy, and feelings of agency and personal responsibility for the learning process (Grant & Basye, 2014). Further, a non-conventional, digitally-rich learning environment provides a platform for immediate, specific, and objective feedback, real-time data that drives instruction, the ability to track learning progress and move learning outside the classroom, and tools that enhance communication and collaboration with others (Rickabaugh, 2016). According to research by Salahli, Özdemir, and Yasar (2013), the goal of a personalized learning system influenced by technology is to offer an individualized learning path and customized learning materials to students based on the analysis of their embedded assessments and academic progress. Consequently, leveraging technology to facilitate the paradigm shift to personalized learning raises teachers’ confidence and eases their transformation into the new role of facilitator as learning becomes student-centered (Mouza, 2008). In summary, one-to-one initiatives coupled with the personalized learning approach will break the traditional education model by tailoring the learning to the individual needs and delivering ubiquitous learning: transforming the world into a customized classroom (Grant & Basye, 2014).

In conclusion, Grant & Basye (2014) claimed that one-to-one learning leveraged by technology in a personalized learning environment allows teachers to become facilitators of the
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learning process while transforming the learning environment into a hub of student-centered learning. Further, the tailored one-to-one personalized learning environment influenced by technology transforms learning into a dynamic process where students are working at their own pace demonstrating mastery based on their own preferences and interests (Grant & Basye 2014). In sum, Wolf (2010) affirmed personalized learning cannot take place at the level intended without the use of technology through one-to-one devices.

Summary

The educational landscape is shifting toward the implementation of one-to-one initiatives to drive technology adoption and increase student learning (Sheninger, 2014). To achieve this, Sheninger (2014) argued technology must be fully utilized to engage learners through relevant learning experiences that extend beyond the classroom and provide the knowledge and skills that will help them succeed in the global economy. Technology significantly enhances an educator’s capacity to recognize and design learning that supports the learning preferences, needs, and interests of multiple learners by providing on-demand access to ample content, resources, and opportunities (Wolf, 2010).

Additionally, personalized learning environments provide the pedagogy and curriculum to disrupt the traditional learning methods; and through this instructional framework students are given opportunities and avenues to learn concepts and construct their own knowledge and understanding in a process that is personalized and non-linear (Zmuda, 2015). In addition, when personalized learning is coupled with technology, the learning becomes transformed to a student-centered curriculum that is tailored to individual learning preferences (Rickabaugh, 2016). Further, utilizing technology in a personalized learning environment enhances and supports
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student autonomy and improves engagement as learners are provided with more agency and accountability in their learning script (Rickabaugh, 2016; Wolf, 2010; Zmuda, 2015).
The purpose of this phenomenographic study was to explore administrators and teachers’ perceptions of the instructional transition to a personalized learning model. More specifically, this study examined the lived experiences of three teachers and three administrators as they transitioned from a traditional learning paradigm to a personalized learning model leveraged by one-to-one devices at a local middle school in Georgia. Furthermore, this qualitative study explored the role changes the administrators and teachers experienced during the transition as well as how technology influenced the personalized learning environment. This chapter includes a detailed description of the worldview, role of the researcher, study’s goals, methodological approach, sampling procedures and data collection used to conduct the study as well as an overview of the data analysis that was used to produce the findings.

Worldview

Guba (1990) described a worldview or paradigm as, “a basic set of beliefs that guide action” (p. 17). Creswell (2014) stated, “a worldview is a general philosophical orientation about the world and the nature of research that a researcher brings to a study” (p. 6). According to Crotty (1998) those simple beliefs of a researcher are constructed according to their ontological and epistemological assumptions. As a result, how one interprets the paradigms of social reality and knowledge, influences the methodology of revealing the understanding of the relationships among phenomena and social behavior (Crotty, 1998). Therefore, one’s ontological assumptions enlightens their epistemological assumptions which supports one’s methodology and data collection process.
In qualitative research, Creswell (2013) highlighted four widely discussed worldviews: (1) post-positivism; (2) constructivism; (3) pragmatism; and (4) transformative. More specifically, post-positivism worldview understands that knowledge is hypothetical and absolute truth cannot be discovered (Creswell, 2013). Consequently, Creswell (2013) argued constructivism understands the nature of reality is diverse and socially constructed, as the researcher engages with the world they are interpreting. Subsequently, pragmatism is not loyal to any specific philosophy and does not view the world as total unity; instead the researcher focuses on the research problem and employs all available methods to understand the problem (Creswell, 2013). Finally, Creswell (2013) stated a transformative worldview rejects cultural relativism and focuses on the lives and experiences of different groups and individuals that have been oppressed in our society, while linking political and social action to them.

These worldviews have a direct impact on the methodology employed. More specifically post-positivism favors quantitative studies, while constructivism prefers qualitative hermeneutical studies (Creswell, 2014). Additionally, Creswell (2014) claimed pragmatists employ mixed model research designs matching questions to different methods. Lastly, transformative researchers follow qualitative methods with the most common methods grounded in critical theories (Creswell, 2014).

For those reasons, this study was conducted from a constructivist worldview. Creswell (2013) stated, “in constructivism, individuals seek understanding of the world in which they live and work” (p. 24). Furthermore, the goal of a constructivist worldview is to develop an understanding or interpretation through the interactions and discussions with participants about their beliefs and views of the phenomenon being researched (Creswell, 2014). Moreover, the elements of constructivism are important, because knowledge is acquired through reflection on
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individual experiences of the situation (Creswell, 2013; Stansberry & Kymes, 2007).

Additionally, the meaning of a situation is constructed through the dialogue or interactions with
and amongst people (Creswell, 2013). These meanings are subjective and varied and produce a
breadth of views rather than limiting the meanings to a few simple themes (Creswell, 2013).

According to Stake (2010), the participants will convey their perceptions of their experience
differently, thus providing a depth of understanding the most common interpretation does not.

The purpose of this research was to better understand the transition from a traditional
educational method to a personalized learning model that leverages one-to-one devices. Hence,
this study explored the lived experiences and perceptions of three teachers and three
administrators as their roles changed during the transition from a conventional one-size-fits-all
instructional model to a personalized learning approach influenced by technology. This study
was conducted at the educational setting of the participants through lived experience
descriptions, interviews, and a focus group. More specifically, comprehensive and open-ended
questions were given during the interviews and focus group providing the platform for
discussions and interactions, so participants could reflect and describe their experiences driving
their perceptions about the phenomena (Creswell, 2014). From these interactions and
discussions, a collective written composite of the experiences the participants lived was
generated (Akerlind, 2005; Creswell, 2013). As a result, a collective conception (Akerlind,
2005) of the phenomena being explored emerged (Creswell, 2014).

**Role of the Researcher**

The researcher’s positionality relative to the study is of a former administrator overseeing
the personalized learning transition for two years at the school being studied. The researcher is
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currently working in a different position in another school within the same district. Additionally, the researcher was not working in the school of study during the research process.

Being an employee of the district provided the researcher insight into the initiative to implement a personalized learning model. Subsequently, being a former employee of the school and driver of the district’s initiative fueled the researcher’s passion for personalized learning, while infusing curiosity on the role changes the transformation would create and the influence technology would have on personalized learning. Additionally, having worked at the school of study provided the researcher with established relationships with the staff. Having these deep relationships afforded the rich discussions with the participants reflecting on their beliefs and views of their transition from a traditional learning paradigm to a personalized learning model. In summary, this qualitative study utilized the researcher’s established relationships with the participants and their ideological beliefs surrounding personalized learning, technology integration, and transformational change to shape the methodological approach employed by this study.

Goals

Maxwell (2012) claimed personal, intellectual, and practical interests inspire the researcher to complete their work. Specifically, these interests motivate researchers to seek understanding and acquire knowledge (Maxwell, 2012). According to Ravitch and Riggan (2017), experiences form personal preferences and outcomes more than a driving question. Therefore, Maxwell (2012) argued there are three types of goals a researcher must define to conduct a quality study: personal, intellectual, and practical.

Intellectually, the researcher wanted to contribute to the field of education by increasing awareness and knowledge on leveraging one-to-one devices to enhance instruction.
Additionally, the researcher wanted to identify the different roles teachers’ and administrators must embody throughout the transition from a compliance-oriented paradigm to a personalized learning model. Finally, the researcher wanted to offer insight on the process teachers and administrators use when transitioning to a personalized learning paradigm.

At the time of the study, the school district under study was in the middle of the implementation of a personalized learning approach leveraged by one-to-one devices. Thus, personally, this study served as a tool to assess the influence the school district’s initiative had in a specific school, beyond the scope of academic achievement. Additionally, the findings of this study will aid the researcher as a leader to better facilitate the continuous implementation of this new learning paradigm.

Practically, the researcher provided recommendations for effectively transitioning to personalized learning environments. More specifically, the researcher has created a best practice guide to aid other schools and districts as they transition from a compliance-oriented model to a personalized learning paradigm.

**Research Approach**

This qualitative study was conducted to explore the perceptions of teachers and administrators transitioning from a compliance-oriented instructional model to a personalized learning environment leveraged by one-to-one devices. A qualitative methodology was used to examine the perceptions of teachers and administrators as they completed the transition. According to Stake (2010), qualitative research depends on “human perception and understanding” (p. 11). In contrast, quantitative research is a method of examining theories through exploration of the measured relationship among variables (Creswell, 2014). According to Creswell (2014) these variables are measurable, and the numerical data can be studied using
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statistical analyses. More specifically, a quantitative study explores: (1) a particular-variable or treatment and how it influences the results; (2) a comparison between at least two groups in relation to an independent variable; or (3) the relationship between two or more variables using a correlational analysis (Creswell, 2014).

On the other hand, Creswell (2013) defined qualitative research as, “an approach to inquiry that begins with assumptions, an interpretive/theoretical lens, and the study of research problems exploring the meaning of individuals or groups ascribe to a social or human problem” (p. 65). In addition, there are several characteristics common to all qualitative research methodologies: (1) research is collected in the field at the participant’s site where the experience occurs; (2) researchers are data collectors; (3) multiple forms of data are collected and organized into themes across all data sources; (4) inductive and deductive logic are developed and presented through complex reasoning and data analysis; (5) researchers learn and convey the varied meanings the participants ascribe to the phenomenon; (6) the research process is emergent; (7) the researcher conveys their background, biases, and values; and (8) a holistic picture of the phenomenon is created (Creswell, 2013; Creswell, 2014). In summary, a qualitative study is conducted when a problem or phenomenon needs to be examined in depth (Creswell, 2013).

Conceptually, personalized learning is still evolving as new strategies, methodologies and educational technologies emerge and develop (Bill & Melinda Gates Foundation, 2014). Notwithstanding, this paradigm shift has spurred a surge in quantitative research on academic performance (Bill & Melinda Gates Foundation, 2014; Clark, 2013) and adaptive software (Coleman-Martin et al., 2005; O’Donoghue, 2009). As a result, there is a gap in qualitative research on the topic and a dearth of research on the conceptualization and effectiveness of
implementing a personalized learning environment (Basham et al., 2016; Halverson et al., 2015; Herold, 2016; Jenkins et al., 2016; Penuel & Johnson, 2016; Zmuda et al., 2015). Nonetheless, when searching for qualitative studies on personalized learning the following studies were found: (1) Courcier (2007) interviewed and collected documents from thirteen teachers in England to examine their perceptions of what personalized learning is and develop a refined definition; (2) Pane et al. (2017) completed interviews with administrators and teachers, focus groups with students, and classroom observations at multiple schools to examine student achievement as well as the instructional practices and strategies, and challenges and catalysts encountered when deploying a personalized learning environment; (3) Waldrip et al. (2014) surveyed four schools and explored perceptions of teachers’ and students’ regarding assessment processes, readiness to learn, engagement, and the extent to which work was personalized; and (4) Jenkins et al. (2016) explored the perceptions of administrators and teachers as they implemented personalized learning environments aligned with district and school policies. Conversely, this study employed a qualitative methodology to examine a sample of administrators and teachers’ perceptions transitioning to a personalized learning model leveraged by one-to-one devices.

**Research Tradition**

Marton (1981) described phenomenography as a qualitative approach for describing different ways people experience and understand a phenomenon. On the other hand, Creswell (2013) explained that a phenomenological study, “describes the meaning for several individuals, of their lived experiences of a concept or a phenomenon…describing what all participants have in common as they experience a phenomenon” (p. 76). In other words, a phenomenographic study focuses on the variety of ways a group of people experience a phenomenon (Marton, 1981), while a phenomenological study examines the essence of a phenomenon through the
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experiences of a set of individuals (Creswell, 2013). Moreover Vagle (2016) defined phenomena as the states we find ourselves engaged in through daily living, relative to the world.

The phenomena researched in this study were the individual experiences of the transition to a personalized learning paradigm. Phenomenography was selected as the most appropriate research approach given the researcher’s desire to examine the variety of ways educators experience the phenomena. In summary, this phenomenographic study was used to describe the variations in the participants’ experiences and understanding (Creswell 2013; Larsson & Holmström, 2007) of the transition from a compliance-oriented learning paradigm to a contemporary instructional model.

Conversely, a narrative qualitative approach focuses on examining the life of an individual with the written report consisting of a narrative about the stories of an individual’s life (Creswell, 2013). Additionally, Creswell (2013) states, a grounded theory approach concentrates on creating a theory grounded in the data, an ethnography method places attention on defining and understanding how a culture-sharing group functions, and a case study focuses on creating a comprehensive analysis of one or more cases. Whereas, the pulse of this phenomenographic study is the description of the variations and understanding of the participant’s experiences (Creswell 2013; Larson et al., 2007) of transitioning from a compliance-oriented learning paradigm to a contemporary instructional model.

The aim of phenomenographic research is to examine the diverse perceptions of the phenomenon being studied (Collier-Reed & Ingerman, 2013; Marton, 1981; Richardson, 1999). In other words, a phenomenographic study examines how people experience the phenomenon in question (Collier-Reed & Ingerman, 2013; Larsson & Holmström, 2007; Marton, 1981). Subsequently, Marton and Booth (1997) stated that the ways of experiencing a phenomenon
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indicate a relationship between the participant and the phenomenon. Within this design, learning undertakes an essential importance as a qualitative change moving from one conception to the experience and awareness of another through direct interaction with the phenomenon. (Larson & Holmström; Marton, 1981; Richardson, 1999). According to Richardson (1999) phenomenography is a second-order perspective because the phenomenon is explained as it is comprehended by the participants whereas in a first-order perspective the phenomenon is analyzed from the researcher’s own perspective. Further, the results of a phenomenographic study are presented as categories of description (themes; Collier-Reed & Ingerman, 2013; Marton, 1981), which are the researcher’s extractions of the diverse ways of understanding the phenomenon (Larsson & Holmström, 2007). Additionally, the categories of description make up the outcome space, which conveys the relationships between the categories and the aspects of the phenomenon (Collier-Reed & Ingerman, 2013). In conclusion, a phenomenographic research design was utilized to investigate the collective variations and conceptions (Sin, 2010) of three teachers and three administrators at one middle school in Georgia as they transitioned to a personalized learning instructional model influenced by one-to-one devices. Furthermore, the study examined the how the educators’ roles changed during the transition, and how technology influenced the personalized learning environment. Figure 2 is a graphical depiction of the research design for the study.
Research Questions

This phenomenographic study focused on the following research questions:

1. How do administrators and teachers experience changes in their roles as they transition from a traditional learning paradigm to a personalized learning model that leverages one-to-one devices?
2. How do administrators and teachers perceive the influence of technology has on their transition to a personalized learning environment?

**Context**

The context of this study is a middle school located in Georgia. The school was selected using convenience sampling. Three administrators and three teachers were selected to participate in the study. The principal, personalized learning coach, and assistant principal overseeing personalized learning were chosen based on their involvement and support of the personalized learning initiative. The participants were chosen through purposive sampling.

The school was a title one middle school with a population of 759 students, that had recently reached the majority-minority demographic threshold. The demographics of the school are shown in Table 1.

Table 1

*Demographics of the Middle School Included in the Study (2017–2018 Academic Year)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free and Reduced Lunch</td>
<td>55</td>
</tr>
<tr>
<td>English Learners</td>
<td>10</td>
</tr>
<tr>
<td>Students with Disabilities</td>
<td>17</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>26</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>40</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
</tr>
<tr>
<td>White</td>
<td>28</td>
</tr>
</tbody>
</table>
Note: Information provided by the department of education of the state where the school is located.

At the time of the study, the chosen middle school was in the third year of receiving an one-to-one mobile device and wireless access grant. More specifically, this grant has provided every student and staff member with a personal device and a monthly allotment of five gigabytes of data. As a result, the grant has created equal opportunity for every student to learn anywhere and anytime regardless of the socioeconomic status of their family.

Participants

The participants were three teachers and three administrators from a middle school in the southern United States. The three teachers were chosen because they are all delegates of the pioneering faction of personalized learning at the school. The selected administrators were the principal, assistant principal overseeing personalized learning, and the personalized learning coach, all of whom were selected because of their interest in, connection to, and support for the transition to a personalized learning model. Six participants were selected to ensure sufficient data was collected, as too many participants may lead to insignificant data for obtaining an ideal set of categories (Sin, 2010). The participants were selected through purposive sampling (Collier-Reed & Ingerman, 2013; Creswell, 2014) to capitalize on the conceptual differences between the participants (Sin, 2010). According to Collier-Reed and Ingerman (2013) a purposively selected sample provides the best prospect for revealing the full array of the variety of perceptions and contextual understandings of the phenomenon. The selected participants represent a variety of grade levels, experiences, roles, responsibilities, gender, and instructional contents. This level of diversity was intentional to maximize the numbers of similarities and differences in the data and ensure a variety of conceptions was collected to yield a robust set of category descriptions (Sin, 2010).
Data Collection

The goal of a phenomenographic study is to gain an understanding of the relationship between the participants and the phenomenon (Collier-Reed & Ingerman, 2013). According to Collier-Reed and Ingerman (2013) it is fundamental to make sure the participants each convey their connection with the same phenomenon (Collier-Reed & Ingerman, 2013). Therefore, data was collected from the participants who have experienced the phenomenon being studied (Creswell, 2013).

Collier-Reed and Ingerman (2013) explained that phenomenographic study data is collected in primarily two ways: written text and verbal discussion. Therefore, the data gathered in this study was comprised of lived experience descriptions, semi-structured interviews, and a focus group (Creswell, 2013; Sin, 2010; Vagle, 2016; Van Manen, 2016). More specifically, the interview and focus group processes were comprised of questions that were open-ended and focused (Creswell, 2013) on the transition to personalized learning environments. Additionally, the goal of the interviews, focus group, and the lived experience descriptions was to find out as much as the researcher could about the conceptual meaning of the phenomenon from each participant (Sin, 2010; Vagle, 2016).

The interview and focus group processes, although semi-structured, were guided by the questions driving the research. Attention was given to the participants’ expressions, but only to cue follow-up questions that prompted participants to reflect more deeply on their conceptual meaning of the phenomenon (Sin, 2010). According to Collier-Reed and Ingerman (2013) the reflections in interviews and focus group should provide the platform for uncovering features of the participant’s relationship with the phenomenon.
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Nevertheless, the administrators and teachers were interviewed separately and face-to-face. Each interview was designed to be completed within 30 minutes. The focus group consisted of three teachers and three administrators lasting 45 minutes. Participation in both the interviews and focus group was voluntary. Verbal consent was obtained from each participant and both the interviews and focus group were conducted in the participants’ school. The interviews and focus group were recorded on an iPhone and iPad. The notes were transcribed by the researcher and Dictate to Us. After each activity, the researcher reflected on the interview or focus group and created written notes about the contextual meanings (Sin, 2010). The transcribed interviews, focus group, and notes were uploaded, as primary documents, into the ATLAS.ti software (Ngalande & Mkwinda, 2014).

In addition, participants were also asked to write about a moment they remembered as a time when their role as an educator was altered by the transformation from a traditional learning paradigm to a personalized instructional model. The purpose of collecting this written data on the lived experience was to collect additional contextual information that would help the researcher conceptualize the meaning of the phenomenon being studied (Larsson & Holmström, 2007; Vagle, 2016). To collect this data, the researcher used Vagle’s (2016) recommended guidelines as instructions to the participants: (1) think about the moment chronologically; (2) describe what was seen, said, heard, thought, and how the experience felt; (3) explain the experience like it is being viewed as a movie; (4) explain the experience as it was lived through; and (5) if names are used, assign each individual a pseudonym. Furthermore, a prompt of a lived experience related to the phenomenon being studied was given to help facilitate the written description (Vagle, 2016). In summary, Flanagan (1954) classifies these statements as critical incidents, while Van Manen (2016) defines them as lived experience descriptions.


Data Analysis

Phenomenography researchers acknowledge that conceptions become apparent when there are conflicting themes because their structure establishes qualitative variances (Collier-Reed & Ingerman, 2013). According to Collier-Reed and Ingerman (2013) the process of data analysis involves creating a descriptive report of the variety of contexts in which the phenomenon was perceived by the participants. Further, the richness of the data analysis is revealed through the structural connections and meaning established within and between the descriptive categories (Collier-Reed & Ingerman, 2013). Finally, the conclusion of the analysis is manifested through the collective conceptions of the phenomenon (Collier-Reed & Ingerman, 2013; Sin, 2010).

In phenomenographical research, the description of conceptions is used to identify the variety in how the phenomenon is experienced (Collier-Reed & Ingerman, 2013; Larsson & Holmström, 2007; Sin, 2010). Thus, there is no one single method or agreed upon process for the data analysis of a phenomenographic study (Yates, Partridge, & Bruce, 2012). However, according to Akerlind (2005) there are similar philosophies of practice that include: (1) setting aside all preconceived views to avoid establishing conclusions too quickly; (2) focusing on and preserving the collective experience by analyzing the transcriptions as a group, rather than individually, to establish emerging categories; and (3) examining different meanings of the conceptions and the structural connections between them. Additionally, the descriptive categories created by the researcher represent the various ways of experiencing the phenomenon and signify a structured set or “outcome space” (Akerlind, 2005, p. 323). The outcome space allows the research to examine the phenomenon holistically from a collective experience, even
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though the phenomenon may be understood differently by the individual participants (Akerlind, 2005).

For this study, the data analysis involved: organizing the data, coding, creating and grouping categories of description, representing the relationships within and between categories, and forming a collective conception of the phenomenon (Collier-Reed & Ingerman, 2013; Creswell, 2013). More specifically, the data analysis started with an exploration of shared and differing meanings (Akerlind, 2005) across the lived experience descriptions, interviews, and focus group. During this phase, the researcher focused on the following while reviewing the various transcripts: (1) the structural elements of the categories; (2) the how or what features of the phenomenon; (3) the patterns of similarities and differences within and between categories; and (4) understanding the inconsistencies between the participants (Bowden & Walsh, 1994; Larsson & Holmström, 2007). Finally, the researcher analyzed the data in which the participants gave explicit details about their reflection on their experience of the phenomenon (Collier-Reed & Ingerman, 2013).

After the interviews and focus group discussions were transcribed, member checking was conducted to guarantee alignment between the participant’s experience and the transcriptions. Next, the lived experience descriptions, focus group and interview transcriptions were uploaded into ATLAS.ti (Ngalande & Mkwinda, 2014) as primary documents and organized into document groups. After, the primary documents were thoroughly read and re-read they were quoted to highlight relevance and significance (Kahn, 2014). During the quotation process, comments were created to aid with organization and coding. Next, the coding process began as quotations were coded. Following this, codes were consolidated into code groups and families (Kahn 2014). Additionally, throughout the research process memos were constructed to clarify
and describe preconceptions, insights, and relationships among the data sources and coded groups that emerged with the researcher.

Next, a report was generated to display the contextual array of coded families and quotations. Subsequently, a network view of the various code families and quotations was constructed to provide a visual diagram of the relationships between them. Finally, a co-occurrence table was constructed in ATLAS.ti to identify the codes that co-occurred throughout the primary documents; resulting in a cross-tabulation of all the codes.

Following this, categorized descriptions emerged and were named. Additionally, ATLAS.ti served as the foundation for writing the textural description and structural description of what the participants experienced (Stake, 2010). Finally, from the structural and textural descriptions, an exhaustive explanation of the collective conception of the experience transitioning to personalized learning was composed.

To account for the researcher’s past knowledge and experience with transitioning to personalized learning, bracketing was conducted. Bracketing is the process of setting one’s assumptions, preconceptions, and beliefs aside, so they do not interfere with the ability to create an accurate description of a participant’s lived experience (Chan, Fung, & Chien, 2013). Specifically, bracketing helps the researcher approach the lived experience as if it is their first time experiencing the phenomenon (Creswell, 2013). According to Ahern (1999), bracketing enhances the authenticity of the data collected and the analysis process. In this study, the researcher enacted bracketing through the following means: (1) kept a reflexive journal in which she identified and noted preconceptions throughout the research process, and especially prior to refining the research questions (Ahern, 1999); (2) engaged in a relationship with an outside source to uncover unconscious assumptions and biases that may have influenced the research
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(Rolls & Relf, 2006); and (3) wrote memos throughout the data collection process to store insights or ideas as they emerged and to maintain focus and full attention on the data (Cutcliffe, 2003).

**Strategies to Ensure Trustworthiness**

Qualitative research is regularly evaluated against criteria more suitable for quantitative research (Krefting, 1991). Krefting (1991) argued that since qualitative research is different from quantitative research in both nature and purpose, applying the same criteria of reliability and validity as indicators of a trustworthy study is erroneous. Along these lines, Guba (1981) uses alternate terms that adhere to a more naturalistic research to determine trustworthiness in qualitative research. According to Guba (1981) there are four criteria for determining the trustworthiness of qualitative research: (1) credibility; (2) transferability; (3) dependability; and (4) confirmability.

First, credibility refers to having confidence in the truth of the findings (Anney, 2014; Guba, 1981). To establish credibility, the researcher: (1) spent sufficient time in the field to understand the culture and phenomena of interest; (2) triangulated data using interviews, a focus group, and lived experience descriptions; (3) provided participants’ with the opportunity to verify the accuracy of the transcripts and withdraw from the study at any time, including after data had been collected; (4) developed a thick description of the phenomenon through descriptions of the context and the participants; (5) incorporated a diverse sample of educators, which yielded a variety of information and enhanced the overall collective conception of the phenomenon (Creswell, 2013; Shenton, 2004).

Second, transferability is the means to demonstrate the results have applicability in other environments (Creswell, 2013; Guba, 1981; Shenton, 2004). Further, the researcher is
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responsible for guaranteeing adequate relative information about the fieldwork site(s) is included in the manuscript or publication (Shenton, 2004). To create transferability the researcher provided a thick description of the field data to allow the findings to be transferred from the environment being studied to the researcher.

Third, dependability refers to the ability to demonstrate consistent results that can be duplicated (Guba, 1981; Shenton, 2004). The researcher demonstrated dependability by: (1) providing in-depth and detailed description of the methodology and analysis procedures; and (2) using peer debriefing or member checking to ask questions and review the findings to assess the accuracy (Creswell, 2014).

Finally, confirmability refers to the level of neutrality and value of the findings (Creswell, 2013; Guba, 1981; Shenton, 2004). The concept of confirmability is determined by the degree to which the findings are influenced by the participants and not the biases of the researcher (Shenton, 2004). The researcher established confirmability by: (1) incorporating triangulation through interviews, focus group, and lived experience descriptions; (2) member checking; and (3) providing an in-depth and detailed methodological description.

Summary

This chapter presented a detailed description of the worldview, methodology, and rationale for conducting this research. More specifically, a qualitative phenomenographic study was employed to explore the participants’ collective conceptions of transitioning to a personalized learning paradigm influenced by one-to-one devices. Additionally, this chapter also included a detailed description of the context of this study, the participants, data collection process, data analysis process, and the strategies used to ensure trustworthiness employed by the researcher.
Chapter four presents, in rich description, the research findings (Simon & Goes, 2006) from this qualitative study. Notably, the purpose of this phenomenographic study was to explore administrators and teachers’ perceptions of the transition from a traditional educational paradigm to a personalized learning model. More specifically, the researcher used lived experience descriptions, one-on-one interviews, and a focus group to investigate the perceptions of middle school administrators and teachers who are transitioning from the conventional learning model to a personalized learning approach influenced by one-to-one devices. The questions driving this research study were:

1. How do administrators and teachers experience changes in their roles as they transition from a traditional learning paradigm to a personalized learning model that leverages one-to-one devices?

2. How do administrators and teachers perceive the influence of technology on their transition to a personalized learning environment?

There is no single way to analyze and interpret the findings (Bloomberg & Volpe, 2012; Merriam & Tisdell, 2015; Simon & Goes, 2018). Bloomberg and Volpe (2012) report, qualitative analysis converts data into findings; still, there is no recipe for that transformation. Nonetheless, there are broad guidelines to follow and elements to include such as, (1) using tables and graphs to illustrate data; (2) providing answers to all research questions; (3) using direct quotes to support findings; and (4) explaining the significance of the findings (Bloomberg & Volpe, 2012; Merriam & Tisdell, 2015; Simon & Goes, 2018).
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In a qualitative phenomenographic study, the researcher collects data at the participant’s site, analyzes and interprets the multiple forms of data collected, and through the interpretation of the findings an understanding of how the informants experience the phenomenon emerges (Creswell, 2013, 2014; Larsson & Holmström, 2007). More specifically, Kahn (2014) claims the following steps are taken when analyzing data through a phenomenographic research tradition: (1) reading through data sources multiple times to become familiar with their contents; (2) compiling and condensing similarities and differences from the data sources and start highlighting quotations; (3) coding the quotations into code families to extract the significant components of the study; (4) consolidation of coding families, which surfaces emerging categories of descriptions; (5) naming of categories of descriptions; and (6) triangulation to produce internal relationships between categories of descriptions by co-occurrences to aid with the understanding of the phenomena being studied. Merriam and Tisdell (2015) summarize qualitative research as holistic, layered, and constantly altering rather than a stationary and static phenomenon waiting to be exposed.

In conclusion, the purpose of this study was to answer the research questions and contribute to the field of education by offering educators recommendations and best practices about the transition from the traditional learning paradigm to a personalized learning model. Furthermore, this study provided a deeper understanding of the utilization of technology, specifically one-to-one devices, to influence instructional practices. Finally, this study identified the role changes administrators and teachers experience as they transition to a personalized learning model, based on the participants’ perceptions and experiences.
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Study Participants

The participants in this study were three administrators and three teachers from one middle school in Georgia. Each participant experienced a shift to personalized learning influenced by one-to-one devices. The teachers were chosen because they were all members of the school’s pioneer cohort to lead the paradigm shift to personalized learning. The administrators selected for this study were: the principal, assistant principal over the personalized learning transition, and the personalized learning coach. Due to the participant’s involvement with the paradigm shift to a personalized learning model influenced by one-to-one devices, each informant was able to provide copious and rich descriptions of their perceptions of the experienced phenomenon.

To ensure confidentiality, the researcher assigned a pseudonym to each participant. The administrators were given the pseudonyms Adam, Ashley, and Anna. Additionally, the teachers were given the pseudonyms Tina, Tabatha, and Taylor. Participant profiles (see Table 2) were constructed by asking the participants questions about their role, educational attainment and years of teaching or leadership experience.

Table 2

Participant Profiles

<table>
<thead>
<tr>
<th>Participant Pseudonym</th>
<th>Role</th>
<th>Educational Attainment</th>
<th>Years Teaching/Leadership Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam</td>
<td>Principal</td>
<td>Master’s</td>
<td>15 years</td>
</tr>
<tr>
<td>Ashley</td>
<td>Assistant Principal</td>
<td>Master’s</td>
<td>8 years</td>
</tr>
<tr>
<td>Anna</td>
<td>Personalized Learning Coach</td>
<td>Master’s</td>
<td>2 years</td>
</tr>
<tr>
<td>Tina</td>
<td>Teacher</td>
<td>Bachelor’s</td>
<td>5 years</td>
</tr>
<tr>
<td>Tabatha</td>
<td>Teacher</td>
<td>Master’s</td>
<td>5 years</td>
</tr>
<tr>
<td>Taylor</td>
<td>Teacher</td>
<td>Specialist</td>
<td>10 years</td>
</tr>
</tbody>
</table>
A Deeper Dive into the Participants

Adam was the principal of the school of study. Adam believed in personalized learning leveraging one-to-one devices and was very supportive with his staff as they began their transformational journey. He was respected by his staff and through his passion for this work, he became the face of personalized learning leveraging one-to-one devices for the district. In fact, the district used his school as the model school for personalized learning leveraging one-to-one devices by having other leaders come to the school to observe and ask questions about the paradigm shift. Even more, schools from other districts both in state and outside of the state had come to observe his school and the work his staff was doing around personalized learning. Additionally, he had spoken at a variety of conferences across the country about his school’s personalized learning transformation. In conclusion, Adam believed personalized learning was the future of education.

Ashley was the assistant principal who oversaw the personalized learning initiative. In fact, she was the administrator who aided with the systematic instructional shift from the work we do to students to the work we do with students. Through this work, Ashley supported and coached the teachers. She was innovative, had a high work rate, and was well respected by the staff. Ashley also organized and managed the personalized learning cohort who was spearheading the initiative. Lastly, she had a major role in the change of culture that cultivated from the shift to personalized learning leveraging one-to-one devices.

Anna was the personalized learning coach who was previously a social studies teacher at the school of study. She was responsible for all the logistical tasks that were involved with implementing the one-to-one initiative. She was also responsible for driving the understanding and continuity between the school’s personalized learning vision and the community. Lastly, she
researched best practices for personalized learning and provided the support through a variety of
professional developments. In conclusion, Anna was an integral part of the one-to-one roll out
and the systematic implementation of the personalized learning paradigm shift promoting and
supporting the community and teachers on their learning journey.

Taylor was a teacher who was always ready and willing to try out new instructional
strategies. She loved technology and knew it was a tool to be used as a leveraging agent
providing students with a variety of mediums to demonstrate mastery. She was not on the
original cohort of teachers who were pioneering the personalized learning experience; however,
she volunteered after she heard about the innovative instructional practices happening in several
of the classrooms. Additionally, Taylor was a very respected teacher amongst her colleagues,
the community, and her students adored her. She was driven and gave her students the best
instructional practices she could to enrich their learning experiences.

Tina was a teacher who had a quiet demeanor but high expectations for herself and her
students. In fact, her colleagues labelled her as quiet but deadly. She would take challenges by
the horns and thrived with employing different instructional practices in her classroom. She
believed in technology and knew when students were at the center, the devices enhanced her
instruction. In summary, Tina had very diverse classes with students across the learning
continuum. Therefore, her goal was to utilize technology to aid her to meet every student at their
level and grow them by providing individualized learning experiences tailored to their learning
preferences.

Tabitha was a teacher who believed in personalizing instruction to meet the needs and
interests of her students. She used technology and the multiple mediums to give her students
voice and choice in how they demonstrated mastery. She used personalized learning to change
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her instructional practices from what she did to students to what she did with students. Tabitha had built a culture of trust by establishing relationships with her students. In return, this provided the environment for her students to feel supported as they advocated for their learning preferences and needs. She was one of the best in the building at understanding and implementing the personalized learning instructional model leveraging one-to-one devices.

Results and Analysis

This study used three types of primary data sources: (1) lived experience descriptions; (2) interviews; and (3) a focus group. The aim of incorporating these data sources was to examine the conceptual understanding of the phenomenon from each of the participants (Sin, 2010; Vagle, 2016). Once the lived experience descriptions were obtained and the interviews and focus group were transcribed, the primary data sources were uploaded into ATLAS.ti where quotations were first conducted. Next, open coding was used to categorize the quotations and create groupings and subgroupings of the collected data (Bloomberg & Volpe, 2012). Through this process, the researcher noted descriptive information and made comments to help organize the quotations and code groupings into coded families.

Following the coding and categorizing of the data, categories of description were determined using code reports, a co-occurrence table, and the network view tool in ATLAS.ti. According to Merriam and Tisdell (2015), qualitative analysis produces the classification of repeating patterns or categories of description that dissect the data. Additionally, Larsson and Holmström (2007) explained that the categories of description are the researcher’s notions of the varied ways the phenomenon can be understood. Figure 3 reveals the emergent categories of descriptions from this study.
Subsequently, aligning the collected and analyzed data with the research questions allowed for different categories of descriptions to emerge. Table 3 depicts the relationship between the research questions, emergent categories of descriptions, and the most prevalent code families.
### Categories of Description and Their Associated Codes, by Research Question

<table>
<thead>
<tr>
<th>Categories of Description</th>
<th>Coded Families</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RQ 1. How do administrators and teachers experience changes in their roles as they transition from a traditional paradigm to a personalized learning model that leverages one-to-one devices?</strong></td>
<td></td>
</tr>
<tr>
<td>Student-Centered</td>
<td>Teacher-focused instruction, teacher centered evaluations, student-centered, co-creating, meeting students at their needs, interests, and abilities, understanding students</td>
</tr>
<tr>
<td>Building capacity</td>
<td>Starting small, piloting cohort, teacher leaders, leadership dedication, high expectations</td>
</tr>
<tr>
<td>Support</td>
<td>Leadership support, culture, communication, professional development, high expectations, technology, sustainable initiative, resources, student engagement</td>
</tr>
<tr>
<td>Modeling</td>
<td>Professional development, initiative transition, new leadership, experience with technology, leadership dedication</td>
</tr>
<tr>
<td><strong>RQ 2. How do administrators and teachers perceive the influence of technology on their transition to a personalized learning environment?</strong></td>
<td></td>
</tr>
<tr>
<td>Leveraging instruction</td>
<td>Access to information, ambiguity, ubiquitous learning, collaboration, real time data, student mastery, student voice and choice, motivation, 21st century skills, learning modalities, learning pathways, co-create, differentiating, pace, instructional tool</td>
</tr>
<tr>
<td>Adversity</td>
<td>Digitizing information, management in district and school level leadership and management in the classroom</td>
</tr>
</tbody>
</table>

Further, using the ATLAS.ti network feature, the researcher created categories of descriptions from coded families and quotations. This provided a visual representation of the participants’ experiences while providing supporting data for the collective conception of the phenomenon being studied. Figure 4 has been included to provide a visual representation of how
the network tool was used to generate connections between quotations and categories of
description.

**Figure 4.** Sample associations among quotations and category of description.

Additionally, dissection of the data is illustrated in Figures 5 and 6. Figure 5 depicts the
total number of iterations for each emergent category of description. Figure 6 shows a
breakdown of the emergent categories of description by data source, including the total number
of iterations associated with each.
Thick description and a triangulation of the sources of data were used to ensure credibility and trustworthiness of the findings in this phenomenographic study (Creswell, 2013; Guba, 1981; Shenton, 2004). Thus, through the interpretation of the data analysis the researcher was able to provide an explanation of the collective perceptions of the participants’ experiences of transitioning to a personalized learning model influenced by one-to-one devices.
Additionally, the researcher practiced bracketing to approach the phenomenon being explored for the first time (Creswell, 2013). Specifically, the researcher employed the following bracketing strategies: (1) took memos throughout the data analysis process, which allowed the researcher to document any insights that emerged (Cutcliffe, 2003); (2) kept a reflective journal of preconceptions throughout the study (Ahern, 1999); and (3) enlisted the services of an outside party to aid in uncovering biases and assumptions (Rolls & Relf, 2006).

The findings of this study have been constructed based on the three data sources: lived experience descriptions, interviews, and a focus group. According to Merriam and Tisdell, (2015) and Bloomberg and Volpe (2014), any qualitative write-up requires the consideration of the audience. For this reason, the findings will be discussed by data source. A thorough analysis of each data source, including the range of perceptions participants experienced regarding the phenomenon, is provided below. Each data source is organized by the categories of description, in succession by prevalence. Finally, within each descriptive category the most widespread coded families are discussed as they relate to the descriptive category and phenomenon being studied.

**Lived Experience Descriptions**

The first primary data source collected was the lived experience descriptions from each of the participants. According to Vagle (2016), lived experience descriptions aid participants in conceptualizing the meaning of the phenomenon being examined. Further, Bloomberg and Volpe (2012) explained critical incident reports provide the foundation to reveal perceptions that might not have been uncovered in interviews. Thus, lived experience descriptions supplement interviews and allow the researcher to investigate assumptions while providing time for self-reflection (Bloomberg & Volpe, 2012). Therefore, participants were prompted to write about an
occasion where they experienced a shift in their role as an educator as they transitioned from a traditional learning paradigm to a personalized learning model, and how technology influenced that shift (See Appendix D).

Student-centered. The most prevalent topic participants wrote about in their lived experience descriptions was moving toward a student-centered instructional environment. More specifically, the systematic focus of the school shifted from a conventional teacher-centered environment to a student-driven instructional model. This caused two key shifts in teachers’ roles, first they transitioned to a facilitator role and second, this new role required them to meet students at their level of need, interest, and ability. Subsequently, Adam spoke about the connection of these two shifts being interconnected. Further, Adam discussed becoming an instructional facilitator was an outcome of teachers understanding their students and their learning preferences. In other words, one cannot have the shift to becoming a facilitator of knowledge without knowing and understanding the interests, needs, and abilities of one’s students.

Facilitators. Based on the information provided by the participants, it seems the traditional role of a teacher knowing and delivering all the information shifted, allowing teachers to become facilitators of their students’ learning process. This constitutes solid evidence showing the renovation of the learning environment into a student-centered learning hub. In other words, the teachers were no longer the sole proprietors of knowledge, nor dictators of the learning process. They became the facilitators of information and supporters of individual learning. For example, Adam stated, “Gone are the days of teachers’ controlling the environment.” Similarly, Taylor reported:
It was surreal to look around the room and see kids learning without me being at the center of that learning. That was the moment I knew I had truly started the process to shift my instructional framework to a personalized learning model. Additionally, Ashley affirmed, “Teachers were becoming facilitators instead of just leaders in their classrooms.” Moreover, Tina reported, “I could not believe I had been lecturing in the front of the classroom…I realized I could be a facilitator in my students’ learning rather than a traditional teacher.” Finally, Tabatha concluded, “Through personalized learning I had begun to facilitate the learning process in my classroom.” This shift from the teacher-focused learning environment to a student-centered curriculum changed the culture of the school. Being over personalized learning, Ashley had worked hard to put the transformational change at the center of the school and as a result their school culture shifted from what they do to students to what they do with students.

*Meeting students at their level of need, interest, and ability.* A one-size-fits-all model was conventionally how a student received an education (Zmuda et al., 2015). Within this model, students were suffocated by compliance-oriented structures that bound them to an allotted amount of time before they were able to show mastery (Wang & Wu, 2011; Zmuda et al., 2015). No two brains are wired the same, yet, in this traditional educational model students are restricted to the same academic opportunities regardless of their learning needs, interests, and abilities. In this study, Tina had the most diverse classroom with students having a variety of educational backgrounds and being spread out along the learning continuum. Consequently, she thrived in developing and implementing individual learning paths for her students. She understood the importance to provide individual learning experiences to each of her students based on their diverse learning preferences.
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The paradigm shift to a personalized learning model at the school under study transformed the roles of administrators and teachers from a one-size-fits-all model to one that aligned learning scripts with individual preferences. Regarding the classroom, Taylor reported, “Personalized learning gave me the avenue to allow student voice and choice and flexible pacing.” Anna declared, “Personalized learning provided a platform for student agency and autonomy. The instructional shift placed the accountability on the students instead of the teachers.” Additionally, Tina reported, “My students and I planned together, to create a learning path tailored to them.” Finally, Ashley stated, “The most important shift was that all students were not learning the same thing the same way. Teachers were providing instruction based on the individual needs of their students.” Ashley would further discuss the change in teacher evaluations from wanting to see common instructional practices amongst teachers to observing and learning about the diverse student learning pathways. In summary, the instruction became less about the teachers and more about the students.

**Leveraging instruction.** Interactive technology when used efficiently and effectively, by placing the student at the center, can provide real-time data to help drive current instructional practices (Grant & Basye, 2014; Wolf, 2010). Additionally, technology gives students and teachers access to information outside of the brick and mortar walls and enables them to leverage other instructional tools through multiple mediums (Grant & Basye, 2015; Patrick et al., 2013; Wolf, 2010). Taylor confirms this as she discussed the devices provided access to a variety of educational platforms supplying the avenue for her students to have voice and choice in demonstrating content mastery. Further, Tabitha specified the benefits of multiple mediums as they leveraged instruction by placing the student at the center of their learning while delivering real-life relevant experiences. In sum, Grant and Basye (2014) found that leveraging technology
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to enhance instructional practices created a student-centered curriculum driven by increased student agency and autonomy.

**Real-time data.** The use of technology with access to educational apps can make the learning more efficient and engaging (Grant & Basye, 2014). Teachers leverage technology during instruction by collecting and using information and data to make immediate adaptations to a student’s learning script (Zmuda et al., 2015). In looking at the school holistically, Adam confirmed, “The devices allowed the teachers to have access to a tool to personalize lessons for students, collect data quickly, and adjust the learning trajectory if needed.” Adam continued by discussing that real-time data provided his teachers with the ability to modify a student’s learning script instantaneously. This provided the immediate avenue for students to receive the information at the level and understanding they needed. Affirming this, Tabatha reported, “By receiving the data instantaneously, adjustments could be made on the fly to the student’s learning pathway.” Similarly, Taylor reported, “At the beginning of a lesson my students would take a diagnostic quiz on an educational app that would quickly assess the students and which learning path they should explore based on their needs and skills.” This is aligned with Anna’s assertion, “I think one-to-one devices can help give immediate feedback and provide the teacher with holistic data on their students to help aid them with instructional practices.” Finally, Ashley asserted, “Teachers were tracking data with formative and summative assessments and remediating and accelerating more than I had ever seen, and our students’ grades were reflecting this.” In conclusion, the learning had become student-focused placing the learner at the center of the curriculum adjusting learning pathways instantaneously.

**Access to information.** One-to-one devices provide educators and students with the means to acquire copious information. Subsequently, Ashley spoke about the enhanced learning
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experiences her students were being provided by having anywhere, anytime, anyplace access. She continued that the students learning had gone virtual and they were being placed in environments and situations they would have never experienced without the access to ubiquitous learning.

According to Grant and Basye (2014), technology provides a window into educational apps, collaboration within and outside the classroom, and an abyss of knowledge. Taylor affirmed Grant’s assertion: “Overall, the students have more tools to utilize in the classroom, are exploring interactive sites, and using the content they are learning in creative ways.” Anna also affirmed this: “The technology helps get the students out into the world rather than stay in the classroom.” Another teacher, Tina stated, “My students are able to network with another classroom in a different state about the novel they are reading, creating a multi-state book club.” Lastly, Ashley stated, “Teachers were given access to texts, apps, and programs that students could use depending on what they were learning or at what level they needed to learn.”

Support. In the lived experience descriptions, support emerged as a recurring element. Both the administrators and teachers wrote about the importance of supporting teachers throughout their pedagogical transformation to personalized learning. The three most prevalent code families to emerge were: leadership support, professional development, and communication.

Leadership support. According to Jenkins et al. (2016), for transformational change to occur, administrators must offer support throughout the paradigm shift. Further, Zmuda et al. (2015) claimed that creating continual transformational change requires administrators to provide support as they challenge teachers’ deep-rooted instructional beliefs to develop a new pedagogical mindset. Furthermore, it is paramount for leaders to transform a school at its
essence to make the transformational change sustainable (Mitchel, 2009; Rohland, 2015). Additionally, Knowles et al. (2005) argued for adult learning to transpire, it is crucial for leaders to establish a people-centered climate identifying and supporting needs and interests. Adam affirmed, “As a result of leadership support, the school culture had shifted from an educational approach of what we do to students to one of what we do with students.” A second administrator, Ashley, declared, “We have changed our mindset on how to approach instruction from doing to students to doing with students.” Similarly, Anna expounded, “Personalized learning is our culture now and we are continuing to do what is best for students.” Speaking to the breadth of the change, Adam continued, “Personalized learning is changing the mindset, not only of our school, but the community, parents, teachers, and students.”

**Professional development.** Another component of leadership support was experienced by the participants through professional development. Anna offered various professional development activities driven by the needs and interests of the teachers and correlated the support based on the teacher’s locale in their personalized learning journey. Anna understood the staff was spread out on the personalized learning continuum and to have a sustainable instructional paradigm shift it was critical she knew the strengths and weaknesses of every staff member. As a result, she was able to best support and grow her staff through tailored professional developments. Tina confirmed, “Tailored professional developments strengthened the transformation to personalized learning.” Similarly, Adam explained, “Professional developments allowed us, as administrators, to challenge and support the teachers on an individual basis as they transitioned to a personalized learning instructional approach.”

**Communication.** The final element of leadership support was the education of the community. The administration at this school understood the importance of educating the
community about the personalized learning paradigm and infusion of one-to-one devices for effective and sustainable transformation. For example, Anna declared, “We instituted a program to educate parents about what a one-to-one personalized learning initiative would mean for students, their learning, and the school as a whole.” Adam further affirmed,

It was imperative that we educate our stakeholders, because we are all going through a process of change and a learning curve. So, it is making sure the parents were confident in this model and knowing that it was best for their kid; although the learning does not look the same from when they went to school or how their kids learned five years ago.

Finally, Ashley explained,

Moving to a one-to-one personalized learning model can be very uncomfortable for parents who are used to very traditional, concrete methods of learning, and student evaluation. It is important to educate parents and find ways to make them partners in the work.

Modeling. During the lived experience descriptions, modeling emerged as a fourth descriptive category. This group of leaders believed in systematically modeling the transformation they asked their teachers to implement with the students. In fact, the leadership team was unwavering about modeling the pedagogical transformation to a personalized learning model with the staff. For example, Adam stated, “It is important for leaders to model the change they are creating.” The administration understood each teacher was in a different place with the infusion of technology into instruction and their understanding of personalized learning. Adam continued,

Typically, you want to roll something out to an entire staff all at once and hold them accountable to the same expectations and one timeline for meeting those expectations. If
a leader is going to be effective in leading the transition to personalized learning, that approach is a huge mistake and will guarantee failure. If we want teachers to personalize learning for their students, we must personalize [the] learning of this work for them. Model for [the teachers] what you want them to do for their students. At my school, taking this approach allowed us to sow the seeds of change and see them grow in each staff member.

As a result, the administration moved from the mindset of supporting everyone the same way in their pedagogical renovation to one of flexibility and working collaboratively and collectively to determine individual transformational expectations. The analyzed data suggests that each teacher was on their own journey and in their own place on the learning curve. Therefore, it was important for the administration to be patient. Along these lines, Ashley stated, “The transition to a personalized learning model took time. We allowed each teacher to work at their own pace as they transitioned to this new model.” Additionally, Tabatha recalled, “We were given space, time, and flexibility so we could work at our own speed implementing technology and personalized learning in our classrooms.”

**Building capacity.** In analyzing the lived experience descriptions, a common perception of building capacity by starting small became evident. This was apparent in leadership’s decision to spearhead a pilot cohort of volunteer teachers who wanted to lead the revolution in transitioning to personalized learning. Additionally, this group also became the teacher leaders of personalized learning and technology integration, paving the way for and aiding other educators in the building. Adam affirmed, “Starting with a small group of lead teachers that paved the way for others was integral in our transition.” Taylor stated, “A small group of teachers and I met with our administrator and formed the piloting group for personalized
learning. We were able to use this space to have discussions about best practices and our struggles with personalized learning and technology.” Ashley declared, “Starting small allowed us to make a ripple that eventually gained support and transformed into a wave. It was amazing to see, lead, and be a part of.”

Additionally, starting small was also happening instructionally, inside classrooms. For example, Tina stated, “I decided that I would start small. I would create a few lessons, test them out in my classroom, and adjust them as I learned from those failures.” Similarly, Tabatha affirmed, “I started small in my classroom by using sections of lessons to integrate student voice and choice.” For this reason, building capacity by starting small and developing teacher leaders to help spearhead the transformation was an integral shift for the participants.

**Adversity.** The last descriptive category that emerged from the lived experience descriptions was adversity. The adversity descriptive category refers to the challenges experienced during the implementation of one-to-one devices. The two most prevalent code families were: digitization of information and management of devices.

**Digitization of information.** Digitization is referred to as taking a conventional instructional practice and uploading it to a device (Grant & Basye, 2014). When this school first infused technology into their instructional practice they became victims of the digitization of information. Anna stated, “In the beginning teachers would take a worksheet and scan it into the device thinking they were enhancing the learning experience for their students.” Affirming this, Tina declared, “When I first started using the devices in the classroom I used them as a substitute for worksheets.” Adam further explained,

I think the device becomes a trap. You got this thing that rules our life whether it is a phone or a tablet or a computer, a laptop, whatever; and what I’ve seen is that you’ve got
schools, teachers, leaders, administrators look at that as an easy way to do something. They are digitizing information not changing outcomes. It is not personalized learning, but an avenue to push out information. The environment has not changed, teaching and learning has not changed, and the outcomes are not improving.

*Management of devices.* Whether it was school leadership or in the classroom, the management of devices had an influence on the experiences of the participants. More specifically, as devices were given to students, the students had to figure out how to learn from them and how to use them for educational purposes. From the participants’ perspectives, the students had a hard time adjusting to only using the devices for instructional reasons. Tabatha explained, “The challenge was the management of the devices with students. Keeping them on task and focused while having the device at their desk.” Similarly, Taylor reported, “The device was an addiction of sorts to some of the students and you had to physically take the device from them.”

Likewise, administrators were finding challenges with managing devices. For example, Anna stated, “We had to change our classroom management and monitoring policy.” Ashley affirmed, “We had to rethink our discipline procedures to include inappropriate use of technology.” In summary, the management of devices was a technological influence both the administrators and teachers experienced.

*Interviews*

The second data source collected and analyzed by the researcher were semi-structured interviews. These interviews were driven by the two research questions and comprised of open-ended questions (See Appendix E). During the interviews, the participants were encouraged to speak freely about their experience (Larsson & Holmström, 2007) of transitioning to a
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personalized learning environment. According to Merriam and Tisdell (2015), interviews serve as a window into the informant’s perceptions. More specifically, interviews were designed to capture informants’ perspectives, as described in their stories to achieve access to their experiences (Bloomberg & Volpe, 2012).

**Student-centered.** When the participants were asked to describe a shift in their role regarding the personalized learning paradigm the most dominant descriptive category was student-centered. According to Jenkins et al. (2014), the transition to a personalized learning model is contingent on a student-centered curriculum. The three most prevalent code families were: the teacher becoming a facilitator, meeting the students at their needs, interests, and abilities, and teacher evaluations.

**Facilitator.** The most dramatic shift the participants experienced in their roles was the one from a teacher-directed instructional practice to one that is student-centered. In the participants traditional learning paradigm, they were the gatekeeper of information. More specifically, they had the power and control; lecturing and delivering the information while the students were passive learners. Ashley stated, “The traditional role was very teacher-centered with the teacher delivering the material how they wanted, they were the keeper of knowledge; the expert, pushing information to the students.”

Conversely, when their roles shifted to becoming a facilitator of the students’ learning process, the learning became more student-centered. Tina stated, “I transitioned from standing up and lecturing to facilitating and supporting the students’ learning.” Additionally, Taylor confirmed, “My role shifted to more of a facilitator when we began personalized learning; the environment became more student focused, student led, and student centered.” Finally, Tabatha
declared, “I definitely felt like I became more of a facilitator where I was no longer the sole provider of information.”

As an adjunct to becoming a facilitator, the instructional practice was also transformed through alterations in designing and planning, student ownership, student independence, and differentiation. Tina explained, “I began to work with my students; planning with them and incorporating their ideas.” Taylor shared, “I think the students like being more in charge of their learning.” Tabatha confirmed Taylor’s speculation, “The students like sharing with you what they have learned and having a say in their learning.” Finally, Adam stated, “The teachers started to allow the students’ agency in determining how they would show content mastery.”

**Meeting students at their level of need, interest, and abilities.** In combination with becoming a facilitator, a shift to a more comprehensive understanding of students emerged. Specifically, a teacher must understand where their students are along the continuum of content mastery, the students’ learning modalities and interests, and how they learn best (Zmuda et al., 2015). Ashley affirmed this,

For this work to be successful teachers need to know where their students are at with the content, is there any prior knowledge, prior test scores, or anything else that would give the teachers any indication of where their students are at, so they are meeting them at their needs.

Adam also affirmed,

There is a spectrum of learning and knowledge from your students. Teachers have students that understand a lot of the content and need to be challenged, students that are in the middle, and they have some students that are a year or two behind and need remediation. Teachers need to fill those gaps. Teachers also have to instruct to variety of
learning styles and modalities. So, teachers must create multiple ways of teaching that address a variety of learning experiences while providing students with numerous learning opportunities. Therefore, it is so important for teachers to understand their students.

Additionally, Tabatha stated, “Personalized learning has given me more insight into my students. I must understand their needs and what they like to do. My instruction must be catered to them based on my understanding of them.”

**Teacher-centered evaluations.** The final abundant code family that emerged was centered around teacher evaluations altered by the transition to personalized learning. As explained by Adam,

When it came to evaluations, it was very easy because I could approach it myopically. So, the expectations were [the] same. What I should see in one classroom I should witness the same in the next classroom. We all taught very teacher-centrically. We were in control and that can only look one way. Now, I have to shift to a more personalized approach; looking for different things in every single classroom. I have to know a whole lot more about what is going on: what is this teacher’s approach, who are her kids, why is she doing what she is doing. The reality is, teaching is going to look different in similar content and grade level class rooms. This is hard for a leader because there is a different set of outcomes I now have to look for in each place; and I have to evaluate them based on that.

Ashley stated,

I became more of a coach to help the teachers grow versus just being an evaluator. My role changed from a being a cheerleader giving pats on the back to a coach facilitating
best practices. Personalized learning was becoming our culture and I began working with the teachers facilitating and coaching them to change their instructional practices.

Similarly, Anna affirmed, “Instruction was no longer teacher-led, so I began evaluating a teacher based on what the students were doing and how the teacher was facilitating the learning. My role changed from watching the teachers to observing the students.” The teachers clearly recognized these administrative changes. For example, Tabatha declared, “I think that personalized learning shifted what an evaluator was looking for.”

**Leveraging instruction.** When personalized learning is coupled with technology there is more of an increase that the learning will be transformed (Rickabaugh, 2016; Zmuda, 2015). More specifically, instruction becomes enhanced through access to copious amounts of information (Grant & Basye, 2014). Corresponding to the second research question, the participants were asked about how technology influenced the personalized learning environment. The most prevalent coded families to emerge from the interviews were: an instructional tool and access to information.

**An instructional tool.** When used effectively, technology can be a vehicle that enhances instructional practices in a personalized learning environment as it places the student in the center of their learning (Grant & Basye, 2014; Mouza, 2008). Tina confirmed, “The technology and one-to-one devices enhanced my instructional practices and made it easier to transform to a personalized learning environment.” Taylor also affirmed, “Technology has made personalization easier.” The administrators also confirmed these experiences. Anna declared, “The devices are another tool to aid teachers with their instruction.” While Ashley stated, “I think teachers recognize that the learning is not about the device, rather the device is a tool. A
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tool to enhance instruction.” Finally, Adam confirmed, “When technology is used as a tool to aid instruction the results are seen through enriched student outcomes.”

Access to information. Additionally, technology provides mediums for more access to information including: apps, texts, and immediate feedback. Ashley stated, “Having devices has given teachers a tool that makes personalized learning more accessible and effective.” Additionally, Tabatha declared, “I think personalized learning would be limited. I don’t think you would have access to all the information you need to inform your instructional practices.” Anna also declared, “The devices allowed teachers to have access to texts, apps, and programs that students could use depending on what they were learning or what level they needed to learn.” Finally, Adam expounded, “I have seen teachers instruct at a very high level using technology and apps to create many learning opportunities for their students.”

Support. Throughout the interviews, leadership support was a widespread code that emerged frequently, which led to development of the descriptive category: support. According to Zmuda et al. (2015) and Knowles et al. (2005), to sustain an instructional transition, support for the teachers is paramount. Adam affirmed this: “Support of your teachers during change is imperative.” Similarly, Ashley stated, “It is important to provide support, regardless of a teacher’s level of comfort or knowledge about personalized learning in order to support their growth.” Finally, Anna reported, “Leadership has to be able to support teachers to sustain the change.”

Building capacity. As with the lived experience descriptions, building capacity while developing teacher leaders in personalized learning was a recurring descriptive category throughout the interviews. However, the most prevalent code family within this descriptive category was building capacity through the establishment of a small group or coalition. In this
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school, that small group was called the *personalized learning piloting cohort*. According to Zmuda et al. (2015), it is paramount for leaders to build a platform for their teachers to share their best practices and learn from one another while providing an opportunity to develop into teacher leaders and aid with the systematic transformation. Additionally, Knowles et al. (2005), stated, to have sustainable change it is critical to collaborate with one’s staff in making decisions influencing them and the initiative. Adam affirmed Zmuda et al.’s assertion:

> As a leader I decided early on in my career that anything I want to do, I have to start small. This requires finding the right people that want to do the work, understand the work, want to be supported, and become leaders in the work. These teachers in the piloting cohort want to be innovative and do something creative, whatever it is. As with everyone else you expose them to it, give them some tools, some easy wins, and let them take the baby steps.

Anna also explained, “The piloting cohort was building the road for everyone else. They were doing the hard work, while everyone else dipped their toes in it, one aspect at a time.” Taylor reported, “Being part of the piloting cohort allowed me to become a teacher leader in personalized learning. I was able to help my colleagues transform their classrooms.” Ashley also shared,

> The teacher leaders would drive the change and through their support with their colleagues more and more people believed in personalized learning. This propelled us to a whole school change where no one was taking baby steps anymore.

**Modeling.** Another role change fostered by the transition to personalized learning was modeling of the initiative by the leadership team. Modeling for the staff allowed the administration to demonstrate elements of personalized learning while also establishing the
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expectations and parameters surrounding the initiative. The most prevalent medium that administration used to model personalized learning was professional development. Ashley explained,

Professional development changed from we all do the same thing, to different levels of professional development. Teachers had voice and choice in what they wanted to learn. They could choose, if they wanted this workshop or if they did not need it. In giving these options it showed that we were rolling out personalized learning to them as we had expected them to do with their students.

Adam also confirmed, “It is never going to work if you keep supporting the teachers the same and delivering professional development homogenously. The teachers will not have the context to go back and do that with their students. It is all very disjoined.” Taylor stated, “Professional developments were driven by choice and voice and facilitated by teachers and occasionally students. They were no longer delivered by one person on one topic.” Similarly, Tina confirmed, “I was able to choose which workshop I wanted to attend based off of my needs.”

Adversity. The school under study went from using technology on a teacher-needed basis to giving every student a device with access to ample information and technology tools that were used every day. Therefore, the administration and teachers had to figure out how to manage the students’ ubiquitous access. The most prevalent code family in this descriptive category that emerged from the interviews was the management of devices in the classroom. For example, Ashley shared, “The learning curve related to the technology, was the management of the devices while in students’ hands. Students were using them inappropriately and the devices became an instructional distraction.” Tina confirmed this, “The students were playing on them in class and not using them appropriately.” Taylor also confirmed, “The students were watching
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videos constantly while we were trying to teach. Therefore, it was hard to regain their attention and engage them in the lesson.”

**Focus Group**

The final data source utilized by the researcher was a focus group. The focus group questions were guided by the research questions and were open-ended (See Appendix F). The aim of a focus group is to comprehend, through reflection and dialogue, the relationship between the participants and the phenomenon being studied (Collier-Reed & Ingerman, 2013). According to Bloomberg and Volpe (2012), a strength of a focus group is that it provides a more organic and relaxed environment than a one-on-one interview. This method provided a platform for participants to have candid conversations about their experiences (Bloomberg & Volpe, 2012) transitioning to a personalized learning model.

**Support.** Systematic transition from a conventional learning paradigm to a personalized learning instructional model is a disruptive process that requires administrators to support their teachers through their learning process and pedagogical transformation (Knowles et al., (2005); Zmuda et al., 2015). Thus, when analyzing the data from the focus group the prevalent code families to emerge were: leadership support and professional development. Other code families were high expectations, resources, student engagement, and culture.

**Leadership support.** The focus group data reinforced the need for teachers to feel supported by the administration through the learning and transformational process. The experiences centered around administration being transparent with expectations, being flexible, providing resources, and having leaders invested in the transformation. Knowles et al. (2005) claimed for adult learning to emerge it is paramount for leaders to implement a flexible structure with defined expectations and be committed to the process of transformation. Anna explained,
“It is important to support the teachers, so they feel supported and understand the expectations.”

Taylor further expounded, “Administration supported us by providing us time and resources to figure personalized learning out on our own and what was best in our class.” Tabatha added, “Having an administration who was passionate about the work gave us confidence to try personalized learning.”

**Professional development.** A second prevalent code family to emerge under support was professional development. According to Knowles et al. (2005) for adult learning to emerge, leaders must develop consecutive professional developments supporting the teachers to achieve the goals of the initiative. Anna declared, “Providing professional developments gave the teachers the support they needed to better understand the transformation and determine how they were going to transition and at what pace they wanted to go.” Ashley stated,

Giving the teachers professional development on personalized learning and technology gave them the confidence to implement the new learning initiative as they felt best in their classrooms. Additionally, offering them a variety of levels of professional development fostered their needs and interests.

Taylor proclaimed, “Having professional development catered to our needs supported our personalized learning journey.” Finally, Adam confirmed, “Teachers were developed, trained, and supported through professional development.”

**Student-centered.** In the focus group, the perceptions of the participants regarding the shift in roles they experienced through their transition to a personalized learning model were largely concentrated around a student-centered curriculum driven by teacher facilitation. It was apparent, from the focus group data, that facilitation coupled with an understanding of the students were the most prevalent code families. Taylor stated, “Students are driving their
learning as I have become a facilitator.” Tina further asserted, “My students have more voice and choice in their learning. They are making the decisions on which learning path to be on and how they will show mastery.” Tabatha also proclaimed,

I am much more of a facilitator now. I must still understand what they need to learn and come up with different learning pathways for them. However, I do this through asking questions and through this process I gauge my students understanding and learn their interests helping me to aid them instructionally.

**Leveraging instruction.** During the focus group, participants were asked how technology influenced personalized learning. It was apparent from the responses that technology was a tool used to enhance instruction. According to Grant & Bayse (2014) personalized learning coupled with technology will fracture the conventional learning paradigm by customizing the learning process to the learner’s needs and abilities. Thus, the infusion of technology allowed for u-learning to emerge. Further, u-learning enhanced and supported the personalized learning framework as students were able to learn anytime and anywhere (Hwang et al., 2008; Hwang et al., 2009; Wang & Wu, 2011; Yahya et al., 2010). A Taylor explained, “Technology has allowed my students to connect with the outside world. It has allowed my students to interact with the outside world in a way they could not before.” Tina also affirmed, “Technology has allowed my students to engage with others on assignments both in my classroom and at home.”

Additionally, technology has provided students with a variety of platforms to demonstrate mastery, as they progress through their learning pathways. Ashley affirmed, “The technology provides the mediums for students to produce a product showcasing what they understand while adapting their learning progress along the way.” Adam concluded, “Personalized learning is
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more about the learning and teaching; not about the technology. The technology is a tool in the hands of students to aid them with the creation of products to prove mastery of learning.”

**Adversity.** When analyzing the data from the focus group, the most prevalent code family of the adversity descriptive category was the assessment of devices from the district. The district wanted a measurement of how successful the transformation to a personalized learning model that leveraged one-to-one devices was at a school level. During the first year of implementation the district chose to emphasize on how much the devices were being used, rather than on how the devices were transforming the learning experience of the students. Anna explained, “It seemed liked all the district cared about was how much you were using the device; total amount of minutes. Whereas, they should have focused on, how you are instructionally integrating the device.” Adam further expounded,

Because of the district’s choice in assessing the total amount of minutes the device was used, they missed out on the most important measurement; the instruction and changing the learning environment. That gets lost, because the one-to-one initiative was so expensive.

At the time of the study, the district was conducting annual walk-throughs of each school, collecting data based on observations and interviews with the administration, teachers, and students. Ashley asserted, the district is getting better with their measurement tools, but they are still subjective.” Regarding the management of devices, Adam further declared,

At least we have data that is specific to our school and that we can share out with our staff. As a district we are heading in the right direction as we are measuring how we collectively infuse the devices as a school. However, we still need to look at the devices,
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[at] how they are being used to show student mastery and have they transformed the way teachers approach instruction and their students?

**Building capacity.** Starting small and creating a community of practice in which members are in constant collaboration with one another and administration to spearhead the transformation builds capacity (Zmuda et al., 2015). Moreover, for the school of study starting small with a group of volunteer teachers who believed in the opportunities a personalized learning model could bring to the students was profound in the systematic transformation. For example, Adam explained,

*Whenever someone asks me about this work or any work, one of the first things I’ll say, is that if you are going to do something and do it well, you cannot, expect something to occur when transforming an entire group of individuals at one time. You must start small.*

Additionally, starting small with a shared goal and support led to the development of trust and belief in the work and importance of aiding others in their transformative journey. Anna declared, “One success was having a teacher-lead group who wanted to be at the forefront of this work and volunteered to be a member of the piloting cohort to grow their craft and help others; developing leadership within.” Taylor stated, “I started on the personalized learning cohort because I wanted to be in the mix and in the know as to what was happening and how to best do this in my classroom. The cohort gave us the space to discuss and share best practices.” Tina also confirmed, “Being a member of the cohort gave me a greater understanding of the work we were doing and the confidence to share that with others.”
Modeling. When analyzing the data from the focus group, the most prevalent was systematic modeling of the elements and expectations of personalized learning by leadership. Adam explained the importance of modeling when transitioning to personalized learning,

I think leadership, whether it is my leadership or leadership in general, what you had in the past from a principal was a global view of things. I am going to throw something at 100 people and my expectation is that you will understand it, engage with it, do it, and here are your checkpoints. All 100 of you are going to get to those points and we are going to the same outputs. It was very monolithic. I think now with personalized learning, if you are asking your teachers to do something with students and this is what you want it to be, then you as a leader have to do that too. You have to model that there are different expectations for different people, you are going to have to implement it differently, everyone will get to a place at a different time, and as leaders we have to be comfortable with this.

In affirmation, Tabatha stated, “We were informed to swim, but the pace at which we swam was our choice; based on our comfort and learning levels.” Tina added, “As long as we kept swimming we were able to move downstream at our pace.” Finally, Ashley concluded, “We knew our teachers were all at different places in their understanding of personalized learning and in their comfort of using technology. So, as long as the teachers were going to start the change we wanted to individually support them through their transition.”

Quality of Evidence

To ensure quality of evidence in this study, the researcher employed triangulation of data sources: (1) lived experience descriptions; (2) interviews; (3) a focus group; as well as triangulation of these sources with the existing literature. Additionally, the researcher also used
code reports to aid in the analyzing of the data. The data sources were thoroughly reviewed allowing the researcher to quote, code, and make memos while comparing and dissecting the data. Further, member checking was conducted one week after interviews and again after the focus group to ensure alignment between participants’ experiences and the transcriptions. Through a rich analysis formulated by a triangulation of the data, the researcher was able to write an exhaustive and thick collective description of the phenomenon being examined; ensuring credibility, transferability, dependability, and confirmability.

**Summary**

A phenomenographic study entails coherence between the research questions and the phenomenon being studied (Kahn, 2014). Consequently, the goal of this study was to gain a deep understanding of the individual transitions experienced as one shifts to a personalized learning paradigm influenced by technology. Hence, this chapter uncovered the variety of perceptions by administrators and teachers as they transitioned to a personalized learning model influenced by technology. Overall, this qualitative study portrayed the relationships between six emergent descriptive categories: student-centered, building capacity, support, modeling, leveraging instruction, and adversity, that represent the participants’ lived experience of the transition to a personalized learning model influenced by one-to-one devices.

More specifically, this study showed that an effective leader is one who recognizes that sustainable change cannot be achieved by one individual. In fact, a leader must shift their role to build capacity within their staff to achieve the initiative by starting small with a coalition passionate about the transformation. Additionally, the leader must systematically model the change they wish to see and support their staff through the challenges and small victories brought about through the transformation from a teacher-focused culture to a student-centered
one. Lastly, an effective leader understands the transformation to an instructional paradigm influenced by technology will be accompanied by adversity, but also knows support and high expectations will help teachers leverage technology effectively to improve instructional practices.

The use of a phenomenographic research tradition was beneficial for revealing the array of participant experiences of the phenomenon. As a result, the findings from this study will aid other educators, schools, and districts in their transition from a compliance-oriented paradigm to a personalized learning model. Additionally, the results will provide insight to other educators for leveraging one-to-one devices to enhance instructional practices. Finally, by exploring and sharing experiences of the participants, this study has helped identify, and deepen existing understandings of, the role changes educators may experience as they transition to a personalized learning model.
CHAPTER FIVE

DISCUSSION

This study was centered on educator’s experiences of a district initiative for schools to systematically transition from a compliance-oriented instructional method to a personalized learning approach. Further, this initiative was catalyzed by the implementation of one-to-one devices. The purpose of this study was to examine administrators and teachers’ perceptions regarding the transition from a traditional educational method to a personalized model influenced by one-to-one devices. Six participants — three administrators and three teachers — each completed a lived experience description, semi-structured one-on-one interview, and a focus group. This qualitative study was guided by the following research questions:

1. How do administrators and teachers experience changes in their roles as they transition from a traditional learning paradigm to a personalized learning model that leverages one-to-one devices?

2. How do administrators and teachers perceive the influence of technology on their transition to a personalized learning environment?

This chapter will include the summary of findings, implications of findings for educational practice, limitations of the study, and recommendations for future research.

**Summary of Findings**

Through analysis of the three data sources, six emergent descriptive categories emerged: (1) student-centered; (2) support; (3) modeling; (4) building capacity; (5) leveraging instruction; and (6) adversity. These descriptive categories facilitate answers to the research questions. Hence, the findings reviewed in chapter five will be organized by research question.
PERSONALIZED LEARNING AND ONE-TO-ONE DEVICES

**Research Question One**

How do administrators and teachers experience changes in their roles as they transition from a traditional learning paradigm to a personalized learning model that leverages one-to-one devices?

Concerning research question one, the findings revealed the following descriptive categories: (1) shifting from a teacher-focused environment to a student-centered curriculum (2) support for teachers through their transformational journey; (3) modeling of the components of the implemented initiative by leadership; and (4) building capacity by starting small.

Conclusions about the research questions are organized below based on the findings within these four categories.

**Shifting from a teacher-focused environment to a student-centered curriculum.**

Wolf (2010) claimed, the shift from a teacher-directed pedagogical model to a student-focused methodological approach is vital to achieving an organic personalized learning experience.

Similarly, Zmuda et al. (2015) stated, the shift from being the sole gatekeeper to a facilitator of information is a paramount shift for teachers to experience in their transition. Likewise, the most prevalent perceptions revealed across all three data sources in the transition to a personalized learning model was the role shift from a teacher-directed instructional practice to a student-centered curriculum fostered by teacher facilitation.

Given this, the administrators explained, in any given classroom before the transformation to personalized learning, teachers were standing at the front of the class, controlled information, and delivered the content however they chose. Conversely, after the transformation and based on the information of the participants, administration witnessed changes to the instructional practice as the harvesting and understanding of information became
student driven. This constitutes strong evidence demonstrating the learning environments had shifted to a student-focused instructional approach with the learners at the center of the curriculum, and the teachers became the facilitators.

Consistent with administration’s assertions, the teachers stated, the transition to a personalized learning environment caused a transformation of their role from a keeper of knowledge to a facilitator of information. In addition to becoming a facilitator, Jenkins et al. (2016) and Zmuda et al. (2015) stated, instruction is also altered by a shift in planning, student agency, and student autonomy. Likewise, the teachers experienced instructional modifications through the transformation to personalized learning by employing student voice and choice as they became co-creators in their learning scripts, providing diverse learning pathways and opportunities, and increasing student agency in learning outcomes.

Subsequently, the teachers began meeting their students at the level of their learning needs, interests, and abilities. According to Kallick and Zmuda (2017b), personalized learning requires a comprehensive understanding of the student, including ability, interests, prior knowledge, and skill level. Consistent with Kallick and Zmuda, teachers in the current study began to get to know and understand their students through the transformation to personalized learning. This served as the vehicle to personalizing instruction. In fact, across all the data sources, the participants spoke generously about the importance of understanding and knowing their students for driving the paradigm shift. Thus, transitioning to a personalized learning model transformed instruction into a student-centered approach fostered by the holistic understanding of the student.

In summary, Zmuda et al. (2015) stated that for educational transformational change to occur, it is mandatory for leaders and teachers to abandon their ingrained beliefs in-order-to
reshape their instructional roles. Further, Christie et al. (2015) claimed that individuals struggle with change because their philosophical view is based on their background, experiences, culture, and education. Subsequently, these views and beliefs become ingrained and need a dynamic shift to challenge them to produce transformational change (Christie et al., 2015). In conjunction with Christie et al. (2015) and based on the information provided by the informants, the participants experienced a disruption in their imbedded and automatic frames of reference with an instructional paradigm shift from a teacher-directed compliance-oriented model to a student-driven personalized learning approach. This disorientated dilemma (Mezirow et al., 2011) challenged their philosophical instructional beliefs thereby providing them a new lens to view the paradigm shift. As a result, a transformational change from a traditional instructional model to student-centered curriculums facilitated by the teachers and driven by the students emerged.

**Support for teachers through their transformational journey.** According to Zmuda et al. (2015), it is paramount for administrators to support teachers with their struggles and challenges as they go through a transformational change. In fact, Knowles et al. (2005) argued support for specific learner needs and interests will contribute to adult learning and help drive change. Additionally, supporting teachers through their shift in roles and learning process will increase sustainability of the pedagogical transition (Jenkins et al., 2016; Pane et al., 2017; Zmuda et al., 2015). Consistent with the literature, the participants’ descriptions and explanations of their transition experiences were centered on the importance of leadership support during their learning and transformative process.

A key role of an educational leader is to support teachers through their struggles while developing them into effective instructional practitioners (Hallinger, 2013; Zmuda et al., 2015). According to Shariff et al. (2016), andragogy learning theory focuses on adult learning centered
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around real-life, relevant, and engaging experiences. Further, with the adult learner co-creating and self-directing their learning experience based on their own abilities, interests, and knowledge, andragogy changes the learning from content-specific to supportive centered learning that is more meaningful and purposeful (Bartle, 2013). Moreover, Zmuda et al. (2015) asserted, endorsing transformational learning and sustained change requires that teachers be supported and given ample opportunity to learn the components of the new learning paradigm. Furthermore, the administration is obligated to lead the staff beyond their present belief system by supporting and providing opportunities for personal and professional growth, while constructively challenging teachers’ prior knowledge and values (Christie et al., 2015; Davis, 2006; Mezirow & Taylor, 2009). Thus, the shift in roles that teachers endured through their andragogy and transformative learning journeys will be grounded by their skills, beliefs, and experiences (Bartle, 2013; Grant & Basye, 2014).

Consistent with the research, the administrators in this study provided tailored, relevant, engaging and self-directed types of support. One of the most frequently discussed support systems was personalized professional development. More specifically, administration altered their approach to professional development by placing the needs of teachers at the center of the transformational learning journey. In fact, professional development changed from a one-size-fits-all model to a tailored and relevant real-life learning experience based on individual beliefs, knowledge, and interests. Through this medium, administrators were able to provide self-directed professional development, challenging their teachers’ previous experiences, knowledge, abilities, and beliefs while helping them to learn and master the components of personalized learning leveraging technology to enhance instructional practices. Thus, teachers experienced support throughout the transformation, as administration challenged their instructional beliefs

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through relevant and real-life experiences while simultaneously providing opportunities for
growth and practice cultivating the new pedagogical philosophy. Based on the information
provided by the informants there was strong evidence demonstrating the supportive learning
process the teachers experienced provided them the ability and confidence to employ a
personalized learning environment leveraging one-to-one devices.

Modeling of the components of the implemented initiative by leadership. Christie et
al. (2015) argued, the goal of transformative learning is to aid individuals in challenging the
belief system that drives their actions by providing experiences that support the desired outcome.
Analysis of the three data sources confirmed participants experienced a third shift in roles
centralized around modeling of the desired outcomes by leadership. More specifically, the data
shows the leadership team initiated a process to disrupt their own as well as their staff’s deep-
rooted instructional beliefs and shape learning experiences by modeling the components of
personalized learning. As a result, this constitutes confirmation that transformative learning
emerged as the whole staff became immersed in a disorienting dilemma, personalized learning,
disrupting their instructional belief system (Christie et al., 2015; Mezirow et al., 2011).

Additionally, Shariff et al. (2016) stated the aim of andragogy is placing the adult at the
center of the learning process while making the learner solve real-life problems by being active
participants. Based on the information of the participants, it seems that modeling the desired
outcomes aided the learning process of administration. More specifically, there is solid evidence
demonstrating that modeling the intended goals of the pedagogical shift allowed administration
to tailor the transformation to the needs of the school while placing themselves at the center of
the learning experience; thereby enriching their own learning process.
According to Hallinger (2013) and Knowles et al. (2005), if adult learning and transformational change is to occur, administrators must explain the why and establish clear expectations and parameters. Consistent with Hallinger and Knowles et al., leader modeling in this study provided a platform for the administration to explain the why and express their expectations while setting parameters for the transformation to a personalized learning model. In fact, the modeling of expectations of the new pedagogical instructional paradigm, provided teachers with experiences that supported the transition by deepening their understanding of what administration wanted and how they would evaluate progress. Thus, through modeling, the administration was able to convey the vision of personalized learning, while establishing a baseline for potential outcomes.

**Building capacity by starting small.** The fourth prevalent shift experienced by the participants was building capacity for the transition to a personalized learning environment. Research by Kotter (1996) shows, working in seclusion to drive sustainable change will not produce the desired transformation. The administrators in this study understood this principle and formed a cohort of twelve teachers to participate in the pilot of the transformative vision.

This strategy of starting small to build capacity supports the existing research which shows leaders must open a multidirectional line of communication (Knowles et al., 2005) with the establishment of a community of practice (Zmuda et al., 2015) or a small group that can lead the transformative change (Kotter, 1996). In conjunction with the research, the leaders in this study sought teachers who were passionate about personalized learning and wanted to become a vanguard in the work. Thus, the teachers who were interested and wanted to be at the forefront of the work volunteered to join the pioneering cohort.
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Mezirow et al. (2011) stated, transformational change happens when individuals have their deep-rooted belief system disrupted with experiences that will drive reflection and dialogue. Affirming Mezirow et al. research on transformational change, the leaders in this study disrupted instructional belief systems by developing a piloting cohort. More specifically, this platform provided the teachers a time and space to reflect and have dialogue about their experiences transitioning to personalized learning.

According to Knowles et al. (2005), adult learning occurs when the learning is self-directed, relevant, and based on one’s own knowledge and experiences. Hence, the pioneering cohort was a medium for teachers to share best practices, discuss concerns, and learn from one another. Furthermore, administration was able to collaborate with their teachers in making decisions regarding the transformation (Knowles et al., 2005).

As a result of the piloting cohort, the teachers enriched their learning on the new instructional model providing them a new belief and increased confidence in their transition to a personalized learning environment. Thus, these teachers evolved into teacher leaders who spearheaded and aided their colleagues on their transformative journey to personalized learning.

In sum, Jenkins et al. (2016) asserted, empowering teachers in transformational change would provide classroom-level changes that expand systematically. In conjunction with the research, building capacity by starting small, allowed transformational change to grow systematically in the school under study.

Research Question Two

How do administrators and teachers perceive the influence of technology on their transition to a personalized learning environment?
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The following descriptive categories were revealed in the findings: (1) technology has been leveraged to enhance instruction; and (2) educators experience adversity with technology. Conclusions about the research question are presented below and organized based on the findings in the two categories.

**Technology is leveraged in instruction.** When the participants were asked about the influence of technology on their transition to a personalized learning environment the most prevalent responses were centered around leveraging technology in instruction. More specifically, the participants reflected on their experiences of technology as an instructional tool and the access to copious amounts of information.

According to Grant and Basye (2014) when technology is utilized as a tool to position the student at the center of learning, the learning experience is enriched. Consistent with Grant and Basye, the participants shared their experiences with using technology as a vehicle to enhance student learning. More specifically, both the teachers and administrators recognized the device was a tool for improving student learning through enhanced instructional practices. All participants agreed personalized learning could occur without technology, but the utilization of technology aided and enhanced the personalized learning environment. In summary, the participants experienced technology as a leveraging agent, that enabled customization of instruction to meet students’ needs (Grant & Basye, 2014), while supporting and enhancing transformation to a personalized learning model (Wolf, 2010).

In the traditional classroom model, student learning is stunted by fixed assignments and an assembly-line mentality that is restricted by a lack of context-based assistance (Wang & Wu, 2011; Zmuda et., 2015). In contrast, a personalized learning model that leverages one-to-one devices provides access to a variety of mediums through which students can access information.
and demonstrate mastery (Hwang et al., 2008). Consistent with Hwang et al. (2008), teachers and administrators in this study experienced the use of apps, texts, and programs that were leveraged to enhance instruction and demonstrate mastery. More specifically, the variety of mediums provided by technology, enabled students to access copious amounts of information that enriched their learning experiences. In fact, Georgievski & Aiello (2006) argued that the goal of ubiquitous computing is to develop an environment in which one’s learning experiences are enhanced through the support and utilization of multiple mediums. Similarly, in this study technology was leveraged to increase students’ aptitude for co-creating individual learning scripts while providing multiple mediums to demonstrate mastery.

Further, through the evolution of technology and the increased access to information, teachers are better able to adapt and tailor learning to the students’ interests, needs, goals and activities, also known as u-learning (Hwang et al., 2009). Consistent with Hwang et al. (2009), the participants utilized technology and its multiple mediums to gain instantaneous access to data and information beyond the school walls to enhance their own ability to support and drive student learning experiences. More specifically, participants used real-time data to aid students in choosing the best learning path while simultaneously, making learning more relevant and engaging. Thus, through u-learning, an adaptive approach was implemented, and the students’ learning was enriched through an anywhere, anyplace, and anytime experience.

**Educators experience adversity with technology.** Knowles et al. (2005) argued for adult learning to occur one must be committed to the process of transformation by constantly monitoring the quality of experience and altering the practice as needed. Moreover, Dwyer et al. (1991) declared, teachers who infuse technology in their curriculum will proceed through five phases of instructional development: starting, acceptance, adaptation, misuse, and innovation.
Data shows the experiences of participants in this study are consistent with Dwyer et al.’s instructional development phases. At the beginning of their personalized learning journey, the participants experienced a stage of digitizing information. More specifically, the participants would use technology as a substitute for worksheets. According to Weston and Brooks (2008), digitization of traditional methods compliments the teacher-lead whole group instructional model. The participants’ early experiences aligned with Weston and Brooks’ findings: the teachers often digitized information and used the device to push out the digitized information. As a result, strong evidence constitutes that student achievement did not change because the device had not changed the learning environment, teaching, or outcomes. However, similar to Dwyer et al. (1991) and Knowles et al. (2005), with time, support, and practice, the participants began to use technology to enhance their instruction. In fact, as they became more confident, they started to use the technology to innovate and create tailored learning experiences for their students.

Pennuel (2006) stated, the efficient management and use of technology influences the effectiveness and success of a personalized learning model. In alignment with Pennuel (2006), the participants’ experiences with the management of devices influenced the use of technology. Particularly, the teachers initially experienced an increase in the number of students who were off-task due to inappropriate use of technology. More specifically, the students were using the device for noneducational purposes, which distracted them from learning. This shift occurred because students transitioned from very structured access to technology inside the classroom to perpetual access — anytime, anyplace, and anywhere. Likewise, the administration experienced a change in their discipline procedures and the number of infractions due to inappropriate use of
technology. In summary, the management of technology created a learning curve for all participants.

**Limitations of the Study**

Referring to the research questions, limitations to this study were identified with a critical review and interpretation of their impact on the study. The limitations to the current research include: the number of participants, the scope of the study, and the role of the researcher. Although small samples are typical for qualitative research and the participants were selected through purposive sampling, it is likely that a larger number of participants would have yielded greater variation in participant demographics and experiences. Additionally, although the participants provided thick descriptions of their transition to a personalized learning model, expanding the number of participants would likely enhance data about the relationships between the participants and the phenomenon. Similarly, increasing the scope of research to include multiple schools across the district would provide additional variation that would deepen the understanding of the phenomenon and enhance credibility and trustworthiness of the data. Even more, broadening the scope of the study would provide district leaders with a more holistic understanding of the district’s initiative to transition to a personalized learning model that leverages one-to-one devices.

Another limitation to the research was the primary researcher’s background as a former school administrator at the school of study who oversaw the transition to personalized learning environments. Thus, the researcher attempted to mitigate a potential bias by bracketing and following recommended best practices of keeping journals and memos to note possible biases and assumptions. However, it is impossible to eliminate all biases, thus some relationship explanations may have been influenced by the researcher’s experience. In summary, by
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identifying the limitations, a more holistic understanding of the environment surrounding the results of this study was established. Additionally, opportunities have been established for future researchers of this topic to challenge their assumptions, beliefs, and preconceptions.

**Implications of Findings for Educational Practice**

The results of this study have implications for educators transitioning (or considering a transition) from a conventional learning paradigm to a personalized learning model influenced by one-to-one devices. Through the transition to a personalized learning model there are shifts in roles that will be encountered along with technological influences. Particularly, educators will have to release control of information and learning to the students. More specifically, teachers will need to serve as facilitators in their students’ learning process, which requires giving students’ agency and autonomy, as they both co-create the student’s learning script. For this reason, leaders will also need to support their teachers through the transformation by providing flexibility, time, and professional development, while simultaneously modeling the expectations and changes they are requiring their teachers to achieve. Additionally, leaders will need to build capacity within their school by identifying and creating a small coalition of teachers who want to drive the transformation, then empowering those teachers to becoming teacher leaders and vanguards of the transformation.

The influence of technology is just as important when transitioning to a personalized learning model. Therefore, administrators and teachers must accept that there will be growing pains with technology, including, but, not limited to, the management of devices in the classroom and administratively concerning disciplinary processes and procedures for inappropriate use. Conversely, the utilization of technology when used as a tool placing the student at the center will leverage instruction. Technology provides a ubiquitous learning environment allowing
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access to copious amounts of information to drive the curriculum to an anywhere, anything, anytime learning experience.

**Recommendations for Future Research**

Findings from this study elicit the following questions about future research:

1. Would the emergent descriptive categories in this study apply to other schools and districts who have also transitioned to personalized learning?
2. How has the role of the student shifted through the transition to a personalized learning environment that leverages one-to-one devices?
3. How do standardized tests influence the transition to personalized learning environments that leverages one-to-one devices?

Recommendations based on these questions are provided in the following paragraphs.

**Descriptive Categories**

The transition from a traditional learning paradigm to a personalized learning model that leverages one-to-one devices should be explored on a larger scope including a variety of schools and districts. Furthermore, it would be beneficial to compare the emergent descriptive categories from this study to future findings to determine if there is a correlation. Having corresponding descriptive categories would provide more credible endorsements to future schools embarking on the transformative process to aid them with their transition.

**Student Roles**

This study has revealed several role changes for both administrators and teachers. Consequently, the shift in roles for students and their perspective on the transition is missing. The existing literature and participants in this study all assert that students’ roles also shift during the personalized learning transition. Thus, more research is needed to determine what these
shifts are and how it impacts the students, from their own perspective. Additionally, understanding these shifts would better equip educators to support their students through the learning paradigm transformation.

**Standardized Tests**

Through the personalized learning model, educators are transforming the learning process and demanding more contemporary outcomes, yet, mastery is still measured through a traditional medium — standardized tests. Presently and holistically the outcomes are currently generated and measured for each teacher and student by standardize tests. Thus, more research needs to be conducted to understand the influence this is having on the personalized learning paradigm and student learning.

Each recommendation for future research may yield new data that improves the transition to personalized learning and other transformative initiatives. This study only “scratched” the proverbial surface of the impact of transformational change from a traditional learning paradigm to a personalized learning model. Consequently, as future research expands understanding of this phenomenon, there is great potential for that research to positively alter how leaders and schools initiate and navigate the transition to personalized learning.
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APPENDIX A

KENNESAW STATE UNIVERSITY IRB APPROVAL

2/15/2018

Rebecca Myers, Student

Re: Your follow-up submission of 2/12/2018, Study #18-356: Transitioning to a Personalized Learning Environment Leveraged by One-to-One Devices

Dear Ms. Myers,

Your application has been reviewed by IRB members. Your study is eligible for expedited review under the FDA and DHHS (OHRP) designation of category 7 - Individual or group characteristics or behavior.

This is to confirm that your application has been approved. The protocol approved is Interviews, a focus group, and lived experience descriptions of administrators and teachers’ perceptions regarding the transition from a traditional educational method to a personalized learning model leveraged by one-to-one devices. The consent procedure described is in effect.

NOTE: All surveys, recruitment flyers/emails, and consent forms must include the IRB study number noted above, prominently displayed on the first page of all materials.

You are granted permission to conduct your study as described in your application effective immediately. The IRB calls your attention to the following obligations as Principal Investigator of this study.
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1. The study is subject to continuing review on or before 2/15/2019. At least two weeks prior to that time, go to http://research.kennesaw.edu/irb/progress-report-form.php to submit a progress report. Progress reports not received in a timely manner will result in expiration and closure of the study.

2. Any proposed changes to the approved study must be reported and approved prior to implementation. This is accomplished through submission of a progress report along with revised consent forms and survey instruments.

3. All records relating to conducted research, including signed consent documents, must be retained for at least three years following completion of the research. You are responsible for ensuring that all records are accessible for inspection by authorized representatives as needed. Should you leave or end your professional relationship with KSU for any reason, you are responsible for providing the IRB with information regarding the housing of research records and who will maintain control over the records during this period.

4. Unanticipated problems or adverse events relating to the research must be reported promptly to the IRB. See http://research.kennesaw.edu/irb/reporting-unanticipated-problems.php for definitions and reporting guidance.

5. A final progress report should be provided to the IRB at the closure of the study.
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Contact the IRB at irb@kennesaw.edu or at (470) 578-2268 if you have any questions or require further information.

Sincerely,

Christine Ziegler, Ph.D.
KSU Institutional Review Board Director and Chair

cc: celue@kennesaw.edu
Dear Ms. Myers:

Your request to conduct the research study “Transitioning to a Personalized Learning Environment Leveraged by One-to-One Devices” has been approved. Enclosed is a copy of the Research Agreement. Please note that while this approval permits you to approach individual schools and/or teachers within the (REDACTED) County School system, the final decision regarding participation is a local option and rests with each school principal and teacher. A copy of this letter must be provided to schools along with any correspondence requesting participation in this study.

No identification of (REDACTED) County Schools (students’ names, teachers’ names, administrators’ names, etc.) is to be included in data collected as a part of this study. Also, complete confidentiality of records must be maintained. Please remember to send a summary report once the study is complete to the address below. If any additional information or assistance is needed, please feel free to reach us at (REDACTED).

We appreciate your interest in conducting research with (REDACTED) County Schools.

Sincerely,
APPENDIX C

CONSENT COVER LETTER

Title of Research Study: Transitioning to a Personalized Learning Environment Leveraged by One-to-One Devices

Researcher’s Contact Information: Rebecca Myers, 413.478.4225.
rmyers24@students.kennesaw.edu

Introduction

You are being invited to take part in a research study conducted by Rebecca Myers of Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

Description of Project

The purpose of the study is to explore the transition from a traditional educational method to a personalized learning model leveraged by one-to-one devices. Further, this study will explore the extent administrators and teachers’ roles have changed, and the influence technology has had on instruction.

Explanation of Procedures

The data gathered will comprise of in-depth semi-structured interviews, a focus group, and lived experience descriptions. The interview and focus group processes will be comprised of questions that are open-ended and focused on the transition to personalized learning environments. Additionally, the administrators and teachers will be interviewed separately and
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face to face. Also, participants will be given a prompt of a lived experience description related to the transition to personalized learning. Lastly, participation will be on a volunteer basis.

**Time Required**

Each interview will be designed to take 30 minutes. The focus group will consist of three teachers and three administrators lasting 45 minutes. Each participant will also write about a lived experience they have had transitioning to a personalized learning model lasting 30 minutes and no longer than 3 pages.

**Risks or Discomforts**

There are no known risks anticipated because of taking part in this study.

**Benefits**

The participants in this study may benefit from a transformational change in their thought process regarding the transition to a personalized learning environment. More specifically, participants will enhance their understanding of the changes their roles have undergone through the transition and the influence one-to-one devices have on leveraging instruction in a personalized learning environment.

Although there may be no direct benefits to you for taking part in the study, the researcher may learn more about the transformational change from a traditional learning paradigm to a personalized learning model leveraged by one-to-one devices. In other words, this study will provide recommendations for leaders, schools, and districts about the systematic methodology transitioning from a traditional educational paradigm to a personalized learning model. Moreover, this study will bring attention to the employment of one-to-one devices to enhance instructional practices and identify the changes in leaders and teachers’ instructional responsibilities and roles as they transition to a 21st century learning paradigm.
Confidentiality

The results of this participation will be anonymous. The use of pseudonyms such as participant A will be used in the individual interviews, focus group, and lived experience descriptions. A special code not including names will be used to help identify the participants. All the data collected and analyzed will not include any names or identifying information. Further, during the focus group, participants will only address each other and themselves by their given pseudonyms. Additionally, the identification of the school, school district, and any other information that will give the identity away will also be kept confidential through a given pseudonym.

Through the use of pseudonyms all the data collected will be anonymous data. All documents will be stored on a flash drive. The documents will be encrypted and password-protected. Additionally, the flash drive will be password-protected. Further, when the flash drive is not in use it will be secured and stored in a locked safe. All digital audio or other electronic data will be stored on the flash drive, encrypted, and password-protected. Any and all paper records will be securely stored and locked in the safe. Only the primary investigator and faculty advisors will have access to the files, documents, and flash drive.

All final records will be retained for three years following the completion of the research. Once this is achieved the data will be destroyed. The flash drive used to store the data will be shredded. Additionally, digital audio and other electronic data will be erased as soon as the information is transcribed and coded and no longer needed for the research.

Inclusion Criteria for Participation

The participants will consist of three teachers and three administrators from a Georgia middle school all over the age of 25. The three teachers were chosen because they are all
members of the personalized learning piloting cohort and have over 3 years of experience. The administrators chosen were the principal, assistant principal overseeing personalized learning and personalized learning coach.

Statement of Understanding

The purpose of this research has been explained and my participation is voluntary. I have the right to stop participation at any time without penalty. I understand that the research has no known risks, and I will not be identified. By completing this survey, I am agreeing to participate in this research project.

Signed Consent

I agree and give my consent to participate in this study. I understand that my participation is voluntary and that I may withdraw my consent at any time without penalty.

___________________________________
Participant Name and Date
Welcome and thank you for your participation. As you know the purpose of this study is to explore a sample of administrators and teachers’ perceptions regarding the transition from a traditional educational method to a personalized learning model influenced by one-to-one devices. Further, this study will explore the extent administrators and teachers’ roles have changed, and the influence technology has had on instruction.

As before, your response is confidential. Your response will remain confidential and will be used for educational purposes. This lived experience description will take about 30 minutes and will include a prompt for you to write about regarding your experience transitioning to a personalized learning environment. Please, feel free to share any information relevant to the question asked. Your response should not exceed three pages.

At this time, I would like to ask for your verbal consent and also inform you that your participation in this lived experience description also implies your consent. Your participation in this lived experience description is completely voluntary. If at any time you need to stop or take a break, please let me know. You may also withdraw your participation at any time without consequence.
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The goal is to write about a specific moment. This moment can take place in an everyday experience and does not have to be a groundbreaking incident. As you write about your experience, please consider the following guidelines:

1. Think about the moment chronologically.
2. Describe what was seen, said, heard, thought, and how the experience felt.
3. Explain the experience like it is being viewed as a movie.
4. Explain the experience as it was lived through.
5. If names are used, assign each individual a pseudonym (Vagel, 2016).

With these ideas in mind, please write a maximum three-page description to the following prompt.

Prompt:

Write a description of a time you recognized a shift in your role as you transitioned from a traditional learning paradigm to a personalized learning model and the influence one-to-one devices had.

Thank you for your time and sharing your experiences with me today.

Welcome and thank you for your participation today. My name is Rebecca Myers and I am a graduate student at Kennesaw State University. I am completing my dissertation and appreciate your participation in the following interview. This interview will take about 30 minutes and will include some focused questions regarding your experiences transitioning to a personalized learning environment. Please, feel free to share any information relevant to the questions asked. I would like your permission to audio record this interview, so I may accurately transcribe the information you convey. All of your responses are confidential. Your responses will remain confidential and will be used for educational purposes.

At this time, I would like to ask for your verbal consent and also inform you that your participation in this interview also implies your consent. Your participation in this interview is completely voluntary. If at any time you need to stop or take a break, please let me know. You may also withdraw your participation at any time without consequence. Do you have any questions or concerns before we begin? Then with your permission we will begin the interview.

Questions:

1. How would you describe in detail your experience transitioning to a personalized learning model?
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2. How would you describe your role in a traditional learning paradigm?

3. How would you describe your role in a personalized learning paradigm?

4. Which role do you think one-to-one devices take in the transition to personalized learning?

Before we conclude this interview, is there anything else you would like to share? Thank you for your time and sharing your experiences with me today.
Welcome and thank you for your participation today. As you know the purpose of this study is to explore a sample of administrators and teachers’ perceptions regarding the transition from a traditional educational method to a personalized learning model leveraged by one-to-one devices. Further, this study will explore the extent administrators and teachers’ roles have changed, and the influence technology has had on instruction.

Before I begin, I would like everyone’s consent to audio record this focus group, so I may accurately transcribe the information you all convey. All of your responses are confidential. Your responses will remain confidential and will be used for educational purposes. This focus group will take about 45 minutes and will include some focused questions regarding everyone’s experiences transitioning to a personalized learning environment. Please, feel free to share any information relevant to the questions asked.

At this time, I would like to ask all everyone for their verbal consent and also inform all of you that your participation in this focus group also implies your consent. Your participation in this focus group is completely voluntary. If at any time you need to stop or take a break, please let me know. You may also withdraw your participation at any time without consequence. Do you
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have any questions or concerns before we begin? Then with all of your permission we will begin the focus group.

Questions:

1. How has technology positively influenced personalized learning?
2. How has technology negatively influenced personalized learning?
3. How would you describe the change in roles a teacher must undergo transitioning to a personalized learning environment?
4. How would you describe the change in roles an administrator must undergo transitioning to a personalized learning environment?

Before we conclude this focus group, is there anything else anyone would like to share? Thank you all for your time and sharing your experiences with me today.