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Teacher Perceptions of Blended Learning to Support 21st Century Learners

Nikki Hensley
East Tennessee State University

Teacher Perceptions of Blended Learning to Support 21st Century Learners

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by

Nikki Hensley

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Dr. Bill Flora, Chair

Dr. Pamela Scott

Dr. Stephanie Barham

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ABSTRACT

Teacher Perceptions of Blended Learning to Support 21st Century Learners

by

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The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. The researcher explored the perceptions of teachers who were participating in an ongoing professional development program within their school district. This program focused on improving teaching and learning through the implementation of a blended learning approach. The researcher examined the experiences of teachers as they learned to adapt pedagogical practices to address the learning needs of 21st century students through blended learning. The researcher sought to gain a better understanding of how teachers perceived that utilizing a blended learning methodology impacted pedagogical beliefs, practices, and student learning. Based on the research questions guiding this study, data was collected from individual, in-depth interviews with fifteen educators. Twelve participants were classroom teachers and three participants were school administrators. The analysis of this data identified the following commonalities regarding teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners: knowledge and understanding of effective instructional practices, enhancing instruction with the strategic use of technology, personalizing learning, technology-enabled assessments to support instruction, engaging and empowering learners, and relevant professional development and support. These results can benefit educators in adapting effective instructional practices to reach all learners.

DEDICATION

I would like to dedicate this work to my family for their constant support throughout this research study. To my daughter whose love and laughter kept me grounded and focused throughout this journey. To my parents who have always gone above and beyond to support me through the good times and the bad. To my loving grandparents whose love and words of wisdom will always be in my heart. The love, faith, and continuous support from my family throughout this journey has been invaluable.

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Chapter 1. Introduction

The expansion of information and communication technologies is central to social, cultural, and technological changes that are impacting teaching and learning (Butler et al., 2017; Cheng & Chau, 2016; Harasim, 2017; Kinshuk et al., 2016; Miles, 2014; Plough, 2017; Ramey, 2016; Safar & AlKhezzi, 2013). Teachers are gaining access to tools that can be utilized to provide learning opportunities which were not previously available without technology (Bransford et al., 2000; Couros, 2015; Horn & Staker, 2015). Educational leaders recognize the benefits of using technology to improve teaching and learning, so an influx of devices have emerged in K-12 schools (Kieschnick, 2017; Prouty, 2014). This has resulted in many classrooms being equipped with technologies that teachers are not prepared to use to improve learning outcomes (Frey et al., 2013; Greer et al., 2014; Kieschnick, 2017).

Teachers have implemented pedagogical practices that have been proven to be effective with students for decades (Kieschnick, 2017). However, they must be prepared with the knowledge and skills to effectively incorporate technology to support 21st century learners (Butler et al., 2017; Horn & Staker, 2015; Kieschnick, 2017). Incorporating technology into instruction can be a challenge for teachers who have the misconception that they must replace current traditional practices with technology (Kieschnick, 2017). However, effective instructional practices should not be replaced because they are older or do not include technology (Kieschnick, 2017). Balancing traditional instructional strategies with technology can engage students in authentic learning experiences focused on exploration, creativity, critical thinking, communication, and collaboration (Kieschnick, 2017; Office of Educational Technology [OET], 2017). The pedagogical practice of combining face-to-face instruction with innovative

technologies has evolved into the phenomenon known as blended learning (Horn & Staker, 2015).

Blended learning has rapidly emerged in K-12 schools as a popular methodology for personalizing instruction to improve student learning (Means et al., 2010; Powell et al., 2015; Suprabha & Subramonian, 2015; Wills, 2015). Teachers are blending best practices in a brick-and-mortar environment along with meaningful online experiences to provide student-centered learning opportunities for all students (Horn & Staker, 2015; Kieschnick, 2017; Loschert et al., 2018; Poon, 2013; Powell et al., 2015). Technology is a tool that can be used by teachers to accommodate the learning needs of more students by adapting how content and instruction are delivered (Powell et al., 2015). Personalizing learning through a blended approach is more attainable for an individual classroom teacher, who is responsible for supporting a variety of students across different academic levels (Fisher, 2019; Powell et al., 2015). Teachers can adapt face-to-face and online instruction to meet the diverse needs of all students within the classroom or be as uniform as a traditional educational environment based on the academic needs of students (Fisher, 2019). Teachers can address the achievement gap between groups of students by adapting instruction to the specific needs of individual students while increasing student agency (Alijani et al., 2014; OET, 2017). "A great teacher adjusts to the learner, not the other way around" (Couros, 2015, p. 38).

The educational system in the United States was organized to prepare individuals with the necessary skills to be successful adults who can contribute to building a strong economy (Horn & Staker, 2015; Kieschnick, 2017). The United States Bureau of Labor Statistics (2017) reported the following:

> Employment of computer and information technology occupations is projected to grow 13 percent from 2016 to 2026, faster than the average for all occupations. These occupations are projected to add about 557,100 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security. (para. 1)

Teachers are responsible for preparing students today for the workforce of tomorrow (Couros, 2015; Sheninger & Murray, 2017). The ability to adapt to change and develop new skills that utilize the capabilities of technology is essential for today's workforce. Sheninger and Murray (2017) believed the following:

> The traditional model of schooling in which students are taught to regurgitate information, ultimately preparing them for industrial model of the past, must dramatically shift to a more personal approach if we are to prepare this generation of students to become successful citizens in a global society. (p. 23)

This must occur through meaningful professional learning opportunities that impact the teacher's ability to focus on the student and not the technology itself (Bransford et al., 2000). Teachers utilizing blended learning focus on how they can use technology to enhance traditional face-to-face instructional strategies proven to be effective with students (Kieschnick, 2017). Teachers need time to develop the knowledge, skills, and self-confidence to effectively incorporate technology to support 21st century learners (Frey et al., 2013; Greer et al., 2014; Kieschnick, 2017).

Statement of the Problem

The unprecedented acceleration of technological change is driving the urgency for educational reform (Couros, 2015; Greer et al., 2014; Horn & Staker, 2015; Sheninger &

Murray, 2017). Approximately 95% of teenagers have a smartphone, or at least access to one in their home (Anderson & Jiang, 2018). Many households have multiple connected devices including smartphones, desktop computers, laptops, tablets, and streaming media devices (Pew Research Center, 2017). However, teachers in most K-12 classrooms have not drastically changed pedagogical practices to accommodate the technological skills students are developing outside of the classroom (Alijani et al., 2014; Couros, 2015; Horn & Staker, 2015; Onyema & Daniil, 2017; Sheninger & Murray, 2017). Blended learning is rapidly emerging in K-12 schools, but more research is needed in this area (Drysdale et al., 2013; Means et al., 2010, 2013). Much of the research on blended learning has been focused on higher education and secondary schools (Drysdale et al., 2013; Means et al., 2010, 2013).

Many educational leaders are investing large amounts of funding to increase access to technology in K-12 schools, but numerous teachers are not adequately prepared to use it effectively to improve learning (Greer et al., 2014; Harasim, 2017; Horn & Staker, 2015; Means et al., 2010, 2013). The design of the traditional or factory-model classroom is hindering the ability of teachers to establish a student-centered learning environment for 21st century learners (Bransford et al., 2000; Horn & Staker, 2015; Sheninger & Murray, 2017). A digital use divide exists between those using technology to enhance creativity, critical thinking, problem solving, and communication skills compared to those who use it for consuming content (OET, 2017). If educators are using technology to simply replace what they are doing in the classroom, then technology is not being utilized to enhance learning and improve pedagogical practices (Couros, 2015).

Purpose Statement

The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. It is important to examine the experiences of teachers as they are the most important component of any effective instructional approach. Building capacity in implementing innovative strategies to support 21st century learners is crucial for teachers (Bransford et al., 2000). It is imperative for educational leaders to provide professional development focused on utilizing these strategies to address student variance (Horn & Staker, 2015; Spencer, 2014). Students in blended learning environments are experiencing improved learning outcomes, because teachers are focusing on how students learn best, rather than on the technology itself (Alijani et al., 2014; Bransford et al., 2000; Burch et al., 2016; Butler et al., 2017; Frey et al., 2013; Horn & Staker, 2015; A. Jones, 2017; Kieschnick, 2017; Magiera, 2017; Powell et al., 2015; Prescott et al., 2018). Providing a student-centered learning environment to address the diverse needs of all learners while facilitating the development of 21st century skills is dependent upon the knowledge, ability and beliefs of teachers (Harasim, 2017; Ramey, 2016). The design of this study enabled the researcher to examine teacher perceptions on how utilizing a blended learning methodology impacted their pedagogical beliefs, practices, and ability to improve learning for all students.

Research Questions

The central question for this study was: What impact does a blended learning methodology have on how teachers adapt instructional practices to address the individual learning needs of students? The researcher explored the perceptions of teachers in adapting instructional practices using a blended learning methodology to address the individual learning needs of students by posing the following research questions:

1. What are teacher perceptions of blended learning as an instructional methodology?
2. How do teachers perceive that a blended learning methodology impacts student learning?
3. What are teacher perceptions of blended learning professional development on instructional practices?

Significance of the Study

Technology-enabled learning experiences have been successfully utilized in blended learning environments to personalize learning, increase student agency, and narrow the digital use divide (Horn & Staker, 2015; OET, 2017). These learning experiences are designed to incorporate technology so that educators can "expand growth possibilities for all students while affording historically disadvantaged students greater equity of access to high-quality learning materials, expertise, personalized learning, and tools for planning for future education" (OET, 2017, p. 9). Emerging technologies provide educators with opportunities to enhance learning in ways that never existed (Bransford et al., 2000; Couros, 2015; Horn & Staker, 2015; Sheninger & Murray, 2017). By exploring the lived-experiences of participants in this study, other educators can develop a deeper understanding of pedagogical practices to best support 21st century learners. Findings from this study can be utilized to better understand how best to support teachers in learning how to adapt pedagogical practices to address the needs of all learners. "When carefully designed and thoughtfully applied, technology can accelerate, amplify, and expand the impact of effective teaching practices" (OET, 2017, p. 3). There is little research on the impact of blended learning in the early elementary grades, but it is growing as an instructional approach (Prescott et al., 2018). This study can be replicated by other researchers to add to the growing body of research on blended learning in K-12 education.

Definition of Terms

The definition and relevance of the following terms related to this study are necessary for understanding this research. Knowledge of the following terms aided in the meaningfulness of the research:

Blended learning: "any formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace" (Horn & Staker, 2015, p. 34).

Digital use divide: A term that describes the difference between those who use technology in active and creative ways to improve learning and those who mostly use technology for consuming content (OET, 2017).

Personalized learning: Instruction is tailored to each student's needs, strengths, and interests while enabling students to a voice and choice in their learning (Slocum, 2016).

Student-centered learning: A term to describe centering instruction around the needs of the students by combining personalized instruction with competency-based instruction (Horn & Staker, 2015).

Differentiated instruction: A term to describe the type of instruction that is tailored to meet the learning needs, styles, and goals of individual students (Basye, 2018).

Limitations and Delimitations

Phenomenological studies focus on the lived experiences of human beings (Patton, 2015). Collecting rich data during the interview process requires the researcher to examine the perceptions, experiences, knowledge, and feelings revealed during the interview process (Patton, 2015). The participants in this study shared their experiences of implementing a blended learning instructional methodology through in-depth interviews conducted by the researcher. A

limitation to this study was that participants might have inadvertently left out details that could have impacted the findings. The role of the researcher could be considered a potential limitation to the study. The researcher is employed in a district level position within the same school district as the participants in the study. This is a supportive position, so no administrative conflict of interest existed between the researcher and participant, nor did the researcher provide professional development within this specific district program. Another potential limitation to this study was that the process of interviewing and analyzing qualitative data was time consuming and labor intensive. The sample size was limited to a specific participant group within the district, so the findings may not be generalizable to larger populations.

A delimitation to this study is that only K-12 classroom teachers participating in their district's blended learning professional development program were invited to participate in this study. Also, each participant had to have at least five years of teaching experience and actively implementing a blended learning instructional model for at least one year as part of the school district's blended learning professional development program. Another delimiting factor in this study is that participants continuously communicated and collaborated with each other, as well as blended learning coaches, as part of their school district's ongoing professional development program.

Summary

The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. Chapter 1 includes the establishment of the purpose of this research study. The statement of the problem, purpose statement, research questions, significance of the study, definition of terms, as well as the limitations and delimitations of the study were identified in this chapter. Chapter 2 is a

review of the available literature surrounding improving equity and access for all students, blended learning, professional development, and adapting pedagogical practices to address the needs of 21st century learners. Chapter 3 establishes the research methodology and design of the study. The data analysis of interviews with participants is reported in Chapter 4, and a summary of the findings, recommendations for practice, recommendations for future research, and conclusions are included in Chapter 5.

Chapter 2. Literature Review

Equity and Accessibility

The unprecedented acceleration of technological change is driving the urgency for educational reform (Couros, 2015; Greer et al., 2014; Horn & Staker, 2015; Sheninger & Murray, 2017). Although we live in a world that is becoming increasingly more reliant on technology, many students from low-income homes continue to lack critical exposure to technologies or experience the same use of technology compared to students from higher income homes (Seward & Nguyen, 2019). The federal Every Student Succeeds Act (ESSA) is an educational law that reauthorized the Elementary and Secondary Education Act (ESEA) of 1965 (Brenchley, 2015; United States Department of Education [USDOE], n.d.). The ESEA legislation was established to provide an equal and quality education for all students (Brenchley, 2015). Prior to ESSA, the No Child Left Behind Act (NCLB) focused on closing achievement gaps and transparency, but it had serious flaws that educational and political leaders agreed needed to be addressed (Brenchley, 2015). The ESSA legislation removed many of the flawed provisions within the NCLB and shifted the power over educational issues back to state and local governments (International Society for Technology in Education [ISTE], 2016).

Accountability plans, detailing how educators would address and support the needs of low achieving schools and underserved students, were developed and submitted from each state agency in accordance with ESSA (ISTE, 2016). Plans were expected to include measures that would ensure that all students would be held to high academic standards and be prepared for success in college and career (ISTE, 2016; Tennessee Department of Education [TDOE], 2017). Each state accountability plan included specific details on how educational leaders would be improving teaching and learning and holding schools accountable for student growth and

achievement (ISTE, 2016; TDOE, 2017). Educational leaders have more flexibility in how leaders choose to disburse federal funds to be in compliance with ESSA's guidelines (ISTE, 2016; TDOE, 2017).

Role of Technology in Education

The National Education Technology Plan (NETP), developed by the United States Department of Education Office of Educational Technology, is a guide for educators to improve student learning outcomes through the effective use of technology (OET, 2017). The plan is based on the work and collaboration of researchers, educational leaders, classroom teachers, developers, along with business and community leaders working to ensure that all students have the opportunity for growth, prosperity, and the skills to be successful in a global economy (OET, 2017). The rapid development and expansion of educational technologies has resulted in the plan being updated on an annual basis (OET, 2017). Provisions within the ESSA also include allocating federal funds to support educational technology and digital learning through professional development focused on the effective use of technology (ISTE, 2016). These are included in Title IV, Part A which authorizes $1.65 billion to support meeting these provisions through the Student Support and Academic Enrichment Grant (ISTE, 2016).

The goals within this guide are aligned with using technology effectively to enhance learning found within the ESSA legislation (OET, 2017). The allocation of funds is utilized to support three key areas in improving education: providing all students with a well-rounded education, improving conditions to support the safety and health of all students to maximize learning, and supporting the effective use of technology to improve learning as well as digital literacy for all students (ISTE, 2016; United States Department of Education [USDOE], 2017). The importance of utilizing technology to provide learning experiences that ensure greater equity

and accessibility for all students is the central focus of the NETP. The Office of Educational Technology (2017) identifies the following:

> Equity in education means increasing all students' access to educational opportunities with a focus on closing achievement gaps and removing barriers that students face based on their race, ethnicity, or national origin; sex; sexual orientation or gender identity or expression; disability; English language ability; religion; socioeconomic status; or geographical location. (p. 5)

Technology is a powerful tool that teachers can use to engage and empower learning through meaningful, technology-enabled experiences (Horn & Staker, 2015; OET, 2017). The Office of Educational Technology (2017) identifies the following:

> Accessibility refers to the design of apps, devices, materials, and environments that support and enable access to content and educational activities for all learners. In addition to enabling students with disabilities to use content and participate in activities, the concepts also apply to accommodating the individual learning needs of students, such as English language learners, students in rural communities, or from economically disadvantaged homes. (p. 5)

Pedagogical practices for addressing the learning needs of all students are improving through the use of high-quality educational experiences, digital resources, and innovative tools (Means et al., 2013; Powell et al., 2015). Blended learning is an instructional approach being utilized by teachers to create success-oriented learning environments that are more efficient and engaging for students at all academic levels (Frey et al., 2013; A. Jones, 2017; Powell et al., 2015).

The rapid development of new technologies, the improved speed and reliability of the Internet, and the increased access to connected devices are factors that are impacting how

students learn and communicate (Crompton, 2017; Horn & Staker, 2015; Lapp et al., 2014; OET, 2017). Students communicate by emailing, texting, instant messaging, social media applications, and virtual chats which all rely on some form of technology. Internet access and usage for school-age children continues to increase (McFarland et al., 2018). McFarland et al. (2018) found the following:

> In 2015, about 71 percent of children ages 3 to 18 used the Internet. Among these children, 86 percent used the Internet at home; 65 percent used it at school; 31 percent used it at someone else's home; 27 percent used it at a library, community center, or other public place; and 14 percent used it at a coffee shop or other business offering internet access. In addition, 27 percent of these children used the Internet while traveling between places. (p. 42)

Although access to technology has increased, meaningful usage to improve student learning outcomes continues to be an issue (Seward & Nguyen, 2019). Technologies should be blended into what is already working to provide more efficient and effective learning experiences (Kieschnick, 2017). "Technology can supplement instruction but cannot replace face-to-face interactions when guided by competent and caring educators" (Seward & Nguyen, 2019, p. 82).

Students and teachers lack intrinsic meaning and are less engaged with traditional instructional pedagogies (Fullan, 2016). Fullan recommends that integrating technology into learning should meet four criteria. First, students and teachers must be engaged in the learning. Second, the integration must be efficient and easy for students and teachers to incorporate. Third, students and teachers need continuous access to technology. Fourth, learning should involve the development of authentic problem solving skills. Fullan (2016) calls the "deep-

learning outcomes the six Cs: character education, citizenship, collaboration, communication, creativity, and critical thinking" (p. 33).

A study designed to examine the beliefs, practices and barriers of K-6 teachers on integrating technology revealed that most teachers held constructivist pedagogical beliefs about integrating technology compared to teacher-centered pedagogical beliefs (Hsu, 2016). There was a consistency between teacher beliefs and their classroom practices (Hsu, 2016). These teachers exhibited strong self-efficacy beliefs regarding using technology and acknowledged the value of using technology in high quality instructional experiences (Hsu, 2016). There were four barriers identified in this study that impacted integrating technology into these K-6 classrooms: a lack of student computer skills, the lack of technology training for teachers, a lack of time to implement technology, and a lack of technical support (Hsu, 2016). Self-efficacy in utilizing technology and understanding the importance of integrating technology into instruction were identified has two factors that impacted technology integration in this study (Hsu, 2016). As innovative technology that impacts education continues to evolve, it is difficult for teachers to keep up with the rapid changes and advancements (Seward & Nguyen, 2019). Therefore, teachers "must embrace a role reversal by acknowledging the learner's knowledge of technology" (Seward & Nguyen, 2019, p. 80).

Blended Learning Pedagogy

New technological advances, pedagogies, and knowledge are driving the need for change (Fullan, 2016; Kieschnick, 2017). New forms of learning utilizing technology to improve engagement are aligned with the development of 21st century skills and competencies (Fullan, 2016; Horn & Staker, 2015; Kieschnick, 2017). Blended learning is an instructional methodology that has emerged as a way to provide meaningful learning experiences for all

students (Horn et al., 2011; Lim & Morris, 2009). This methodology is growing as a student-centered, innovative delivery approach that enhances student learning outcomes through student engagement (Horn et al., 2011; Lim & Morris, 2009).

Effectively integrating technology into instructional practices can be a challenge for teachers to manage without understanding the role it should play in instruction (Couros, 2015; Crompton, 2017; Kieschnick, 2017). The use of technology, in a blended learning environment, impacts student learning outcomes by elevating instructional strategies that work, not by diminishing or replacing them with technology (Kieschnick, 2017). Blended learning goes beyond putting devices into a classroom (Horn & Staker, 2015; Kieschnick, 2017). It is based on teachers who incorporate online and face-to-face instruction to ensure academic growth for all students through personalized learning (Horn & Staker, 2015; Kieschnick, 2017).

Blended learning represents a paradigm shift from the traditional factory-model to a student-centered instructional model (Horn & Staker, 2015; Powell et al., 2015). Teachers are utilizing blended learning to create innovative opportunities to maximize student learning outcomes (Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015). A blended learning instructional model benefits all students through face-to-face interaction with a teacher, along with meaningful online learning experiences (Frey et al., 2013; Horn & Staker, 2015; Powell et al., 2015). The flexibility for teachers to adapt a blended learning approach that best fits the needs of their students is crucial to a successful implementation (Kazakoff et al., 2018; Prescott et al., 2018). Students in a blended learning environment have access to an extensive amount of online resources and are guided by teachers who provide quality learning experiences that extend beyond the classroom (Alijani et al., 2014; Basham, Smith, et al., 2016; Powell et al., 2015).

Defining Blended Learning

The term blended learning is defined in many different ways, but most definitions include a combination of face-to-face instruction with online learning experiences (Harasim, 2017; Suprabha & Subramonian, 2015). The definition of blended learning utilized for this study is based on a study of over 150 blended learning programs across the country (Horn & Staker, 2015). Horn and Staker (2015) identified "blended learning is any formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace" (p. 34). A critical component of blended learning is that technology is combined with face-to-face instruction to enhance learning for students (Fassbender et al., 2014; Horn & Staker, 2015; Kieschnick, 2017). Without this essential component, blended learning would be no different than when a teacher projects online curriculum to the entire class on a whiteboard (Horn & Staker, 2015). A blended learning methodology enables students to utilize technology to learn in a way that best meets their needs while in an environment that encourages creativity, critical thinking, and problem solving (Gallup, 2019; Horn & Staker, 2015; Kieschnick, 2017; Patrick et al., 2013). The focus on how technology is used in a blended learning approach is critical for separating it from being a technology-rich classroom (Frey et al., 2013; Horn & Staker, 2015; Kieschnick, 2017; Staker & Horn, 2012).

Blended learning is an instructional approach that enables teachers to have more time to personalize learning for their students (Fassbender et al., 2014; Kieschnick, 2017). Learning is personalized so that students in a blended learning environment have some control over the pace of their learning (Horn & Staker, 2015). Students move through the learning process at the pace they need to master the content, rather than be pushed through as an entire class before they are

ready (Kieschnick, 2017; Patrick et al., 2013; Staker & Horn, 2012). Students in a blended learning environment, who lack a sufficient understanding or mastery of a concept, can choose to spend additional time reviewing alternative resources or receiving personalized support from a teacher (Horn & Staker, 2015; Patrick et al., 2013). Students who have demonstrated mastery can continue to move forward with content and instruction rather than wait for others in the class (Horn & Staker, 2015). Time is flexible in a blended learning classroom and is not confined to a specific period of the day (Patrick et al., 2013; Staker & Horn, 2012). Students can control the path of learning by choosing how they want to learn a specific concept (Horn & Staker, 2015). Students are encouraged to be creative and active in directing their own learning path with guidance from teachers (Kieschnick, 2017; Staker & Horn, 2012). Extreme models of blended learning are designed so that students choose their own learning path based on their interests and needs (Staker & Horn, 2012). Some blended learning models are organized so that students can choose where they want to work on their online assignments (Horn & Staker, 2015). The place in a blended learning environment refers to a learning environment where students are not restricted to learning within the four walls for the classroom (Staker & Horn, 2012).

A blended learning approach involves students participating in face-to-face learning experiences in a supervised classroom (Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015). Students attend classes in a physical building and meet face-to-face with a teacher while using technology to enhance learning (Horn & Staker, 2015; Powell et al., 2015; Toppin & Toppin, 2016). Blended learning is an effective pedagogical approach for enabling students to experience the essential socialization and academic support of being in a brick-and-mortar facility combined with technology-enabled learning experiences (Horn & Staker, 2015; Powell et al., 2015; Vander Ark, 2018). The belief that school should be more than a virtual learning

environment is a shared concern of many parents and teachers (Horn & Staker, 2015; Kieschnick, 2017). Teachers report that providing guided instruction is difficult in a virtual environment where there is no face-to-face interaction (Frey et al., 2013). Teachers in a blended learning environment manage and provide guidance to students while supporting the development of digital citizenship and online safety skills (Vander Ark, 2018). Students learn in a safe physical environment while building meaningful relationships with peers and teachers (Horn & Staker, 2015; Kieschnick, 2017).

Teachers in a blended learning environment connect learning experiences so that the face-to-face component and the online component are purposefully designed to enhance the other (Harasim, 2017; Patrick et al., 2013; Staker & Horn, 2012). Students benefit from face-to-face instruction and supervision along with relevant, technology-enabled learning opportunities across modalities (Horn & Staker, 2015; Powell et al., 2015; Staker & Horn, 2012; Vander Ark, 2018). This is an area that the use of adaptive software can benefit teachers and students by monitoring progress and matching the student to the appropriate modality (Horn & Staker, 2015; A. Jones, 2017). The use of adaptive technology to provide timely feedback is a popular component of a blended learning instructional model (Hattie & Timperley, 2016; Horn & Staker, 2015; A. Jones, 2017; Kieschnick, 2017). Adaptive technologies are used to provide on-demand assessment and instructional support by matching students with the right content at the right time in the learning process (Hattie & Timperley, 2016; Horn & Staker, 2015; Powell et al., 2015). This establishes an environment where teachers have more time and opportunity to simultaneously address multiple learning needs across the classroom (Horn & Staker, 2015; Powell et al., 2015). The use of adaptive software products offers teachers the flexibility to combine traditional face-to-face instructional strategies with technology-enabled experiences without spending the time

creating the online component (Jones, 2017). However, teachers without adaptive software can still make these decisions and provide effective blended learning opportunities for students (Horn & Staker, 2015).

A blended learning methodology is a blend of formats used in an educational environment to improve learning. Online learning experiences are purposefully designed as part of the learning path being utilized by teachers to meet the individual needs of students (Horn & Staker, 2015; Powell et al., 2015). Teachers personalize learning by using formative assessments to provide data-driven instruction through face-to-face and technology-enabled learning experiences including small groups, partner work, projects, and individual tutoring opportunities (Frey et al., 2013; Horn & Staker, 2015; Powell et al., 2015). The online component can vary by the setting, the content, and the type of technologies being utilized (Means et al., 2013).

Models of Blended Learning

Blended learning is emerging in numerous K-12 schools as a hybrid innovation (Christensen et al., 2013; Horn & Staker, 2015). "A hybrid is a combination of the new, disruptive technology with the old technology and represents a sustaining innovation relative to the old technology" (Christensen et al., 2013, p. 2). Students benefit from the advantages of technology-enabled learning experiences combined with the advantages of a traditional classroom (Christensen et al., 2013). Disruptive models of blended learning utilize traditional classroom experiences in new and different ways (Christensen et al., 2013; Horn & Staker, 2015). Educators must consider the devices and infrastructure available to schools prior to implementing a blended learning instructional model (Horn & Staker, 2015). They must also use their professional knowledge and resources to select the appropriate blended learning model that best meets the needs of their students (Alijani et al., 2014; Horn & Staker, 2015). Multiple

models or a combination of models are occasionally used within a school or district (Horn & Staker, 2015). However, most blended learning models are classified as one of the four main instructional models: Rotation, Flex, A La Carte, and Enriched Virtual (Horn & Staker, 2015; Powell et al., 2015; Staker & Horn, 2012). The Station Rotation, Lab Rotation, and Flipped Classroom models of blended learning are examples of sustaining hybrid innovations, because they incorporate traditional face-to-face and online learning (Christensen et al., 2013; Horn & Staker, 2015). The Individual Rotation, Flex, A La Carte, and Enriched Virtual models are examples of disruptive models of blended learning (Christensen et al., 2013; Horn & Staker, 2015).

A blended learning approach is like a hybrid car that can be efficient or a lemon but still be called a hybrid car (Horn et al., 2011). A market survey on emerging blended learning environments was conducted in the fall of 2010 by Innosight Institute (Horn et al., 2011). Researchers found that programs "were highly varied in the way that students experienced their learning across several dimensions, including teacher roles, scheduling, physical space, and delivery methods" (Horn et al., 2011, p. 4). Originally, this led them to categorize blended learning into six models: Face-to-Face Driver, Rotation, Flex, Online Lab, Self-Blend, and Online Driver (Horn et al., 2011). These innovative instructional practices have evolved into scalable models of blended learning that educators are incorporating to provide student-centered learning experiences to improve learning outcomes for all students (Horn et al., 2011; Horn & Staker, 2015; Powell et al., 2015).

The Rotation Model is designed for students to rotate through face-to-face and online learning experiences at the discretion of the teacher (Christensen Institute, n.d.; Horn & Staker, 2015) These experiences could include whole-group instruction, small-group instruction, one-on-

one tutoring, peer groups, project-based learning, and paper-pencil activities in addition to the online component (Christensen et al., 2013; Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015). The teacher controls the amount of time students spend at each modality and signals when it is time for students to move on to the next activity (Christensen Institute, n.d.; Horn & Staker, 2015; Powell et al., 2015). This model is structured so that teachers have the opportunity to provide targeted instruction while keeping all students actively engaged in the learning process (Horn & Staker, 2015; Powell et al., 2015). Teachers use online activities during the rotation for collecting data to drive instruction to address the individual learning needs of students in the classroom (Horn & Staker, 2015; Wills, 2015). Teachers utilize technology-enabled adaptive learning experiences to provide individual students with the content they need at the time they need it (Horn & Staker, 2015; Powell et al., 2015). There are four types of Rotation Models that are popular in K-12 schools: Station Rotation, Lab Rotation, Flipped Classroom, and Individual Rotation Model of blended learning (Christensen et al., 2013; Horn & Staker, 2015; Powell et al., 2015).

The Station Rotation Model is the most common blended learning model in K-12 schools and is similar to how teachers, especially those in primary grades, have structured learning centers for decades (Christensen et al., 2013; Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015; Prouty, 2014). Students rotate through planned learning experiences within a single or multiple classroom focused on a specific content area (Christensen Institute, n.d.; Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015; Prescott et al., 2018; Wills, 2015). Students rotate through the assigned activities when the teacher announces or signals that it is time to move on to the next activity (Christensen Institute, n.d.; Horn & Staker, 2015). The Scholastic READ 180 program is one of the most successful examples of the Station Rotation Model that has stood the

test of time for improving reading outcomes (Horn & Staker, 2015). Students participating in the READ 180 program have shown significant growth in reading achievement and comprehension (Horn & Staker, 2015). This program was designed to support students who were performing below proficiency in reading achievement (Horn & Staker, 2015; Institute of Educational Sciences [IES], 2016). The READ 180 program is structured into 45-90 minute sessions which include three different rotations along with a whole-group discussion at the beginning and end of the session (Horn & Staker, 2015; IES, 2016). Small groups of students rotate through individualized online instruction based on adaptive computer software, instruction with a teacher, and time for independent reading (Horn & Staker, 2015; IES, 2016). Students in the READ 180 program experienced an average gain of 12 percentile points in their reading achievement scores and an increase of 4 percentile points in comprehension (Horn & Staker, 2015; IES, 2016).

Although 1:1 access to technology has increased, educators in many school districts continue to rely on computer labs for incorporating technology (Christensen Institute, n.d.; Horn et al., 2011; Horn & Staker, 2015). A Lab Rotation Model of blended learning involves students rotating from the classroom to a computer lab for online learning experiences (Christensen Institute, n.d.; Horn & Staker, 2015). This model is structured basically the same as the Station Rotation Model except students leave the physical space of the classrooms for the online portion (Christensen Institute, n.d.; Horn & Staker, 2015; Powell et al., 2015; Wills, 2015). The implementation of this model requires an additional staff position to supervise students in the computer lab but decreases the number of students in the classroom who are working through other rotations with the teacher, individually or in groups (Horn & Staker, 2015). Although students are being supervised by another staff member in the lab, classroom teachers still use

data from the online portion to drive instruction across modalities (Horn & Staker, 2015; Powell et al., 2015).

The Flipped Classroom Model is designed for students to get more of the direct instruction content outside of the school day while using class time to focus on guided practice or projects facilitated by the teacher (Bergmann & Sams, 2012; Christensen Institute, n.d.; Horn & Staker, 2015). Teachers using this model flip the assignments so that content delivery occurs outside of the classroom while using valuable class time to engage students in authentic learning activities (Bergmann & Sams, 2012; Horn & Staker, 2015). Students in a flipped classroom environment participate in online learning or lectures independently and use the time in the classroom for face-to-face instruction and support (Bergmann & Sams, 2012; Horn & Staker, 2015; Powell et al., 2015; Wills, 2015). Students have access to the specific digital content necessary to address their individual learning needs as they work at their own pace to achieve mastery (Horn & Staker, 2015). The teacher takes on a coaching or facilitating role during class time (Bergmann & Sams, 2012; Horn & Staker, 2015).

The Individual Rotation Model is more personalized for students because they do not rotate through the same learning experiences through the school day (Christensen Institute, n.d.; Horn & Staker, 2015). Student learning experiences are specifically geared toward their individual needs, so they have a specific playlist of activities designed for them (Horn & Staker, 2015). Teachers or adaptive software create personalized playlists for students to rotate through during the school day (Horn & Staker, 2015; Powell et al., 2015). Each student has their own unique schedule each day based on their immediate learning needs (Horn & Staker, 2015). Students are expected to complete customized assignments within the rotation (Powell et al., 2015; Wills, 2015).

The Flex Model centers around online learning with some face-to-face activities (Christensen Institute, n.d.; Horn & Staker, 2015). Credit recovery courses and advanced placement classes are examples of programs using this model to support students who need access to specific content (Horn & Staker, 2015). Teachers using this model use online learning as the main method of instruction to address specific learning needs and face-to-face support is utilized as needed (Horn & Staker, 2015). Students follow customized, fluid schedules where they are involved with active-learning opportunities personalized to address their individual needs (Christensen Institute, n.d.; Horn & Staker, 2015). The Flex Model is more personalized than the Individual Rotation Model because all students are working on individualized course curriculum while the focus is more on technology-enabled learning experiences with the teachers there to provide support on an as-needed basis (Christensen Institute, n.d.; Horn & Staker, 2015; Powell et al., 2015; Wills, 2015). An alternative staffing combination may be necessary to implement this model due to how K-12 schools are structured (Horn & Staker, 2015).

The A La Carte Model is a course that is taken online to accompany other face-to-face learning experiences (Christensen Institute, n.d.; Horn & Staker, 2015). The teacher is normally an online instructor who is not necessarily located at the student's physical school (Horn & Staker, 2015). This model is more common in secondary schools (Horn & Staker, 2015). This model is for students who attend traditional classes in addition to virtual classes with an online teacher which is useful in situations where courses might not be available at certain schools (Christensen Institute, n.d.; Powell et al., 2015; Wills, 2015).

The Enriched Virtual Model refers to students who have some face-to-face learning experiences with a teacher, but complete the remaining coursework remotely (Christensen Institute, n.d.; Horn & Staker, 2015). Many of these models started specifically as an online

school and then educators incorporated brick-and-mortar activities to provide a blended experience for students (Horn & Staker, 2015). Generally, the students have the same teacher for the online and face-to-face portions of the course (Horn & Staker, 2015). Although some formal face-to-face learning time with their teacher is required on a regularly scheduled basis, most of their learning activities are completed online, outside the physical building (Christensen Institute, n.d.; Horn & Staker, 2015).

Blended Learning Environment

The teacher's role is to provide an environment focused on inspiring and supporting students in developing the skills and mindset for life-long learning (Couros, 2015). Incorporating online learning has improved student outcomes in K-12 learning environments (Alijani et al., 2014; Powell et al., 2015). The blend of online learning into traditional classroom practices "marks the most powerful opportunity the world has known to make student-centered learning a widespread reality" (Horn & Staker, 2015, p. 11). K-12 teachers are successfully utilizing blended learning models to provide student-centered learning environments (Arnett, 2018; Means et al., 2010; Powell et al., 2015; Suprabha & Subramonian, 2015; Wills, 2015). A blended learning methodology enables teachers to create an environment strategically structured to address individual learning needs (Bransford et al., 2000; Horn & Staker, 2015). Pedagogical practices that center on the conceptual and cultural knowledge, experiences, attitudes, and learning styles that each student brings to the educational setting are important components of student-centered learning (Bransford et al., 2000; Horn & Staker, 2015).

Personalized Learning

Effective teachers take time to identify the specific learning goals for all students to determine what they know, clear up any misconceptions, and personalize the learning for each

student (Bransford et al., 2000; Kieschnick, 2017). Personalized learning is tailoring instruction to the individual needs of the student (Horn & Staker, 2015; ISTE, 2016). The Office of Educational Technology (2017) defines personalized learning as "instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner" (p. 9). Personalizing instruction through blended learning has outpaced full online learning in K-12 schools and is having a significant impact on student growth and achievement (Basham, Hall, et al., 2016). Personalized and competency-based learning is attainable through the implementation of a blended learning methodology (Horn & Staker, 2015). Focusing on student-centered learning by respecting and understanding the prior experiences of students and utilizing those experiences to build bridges to new learning improves student learning outcomes (Bransford et al., 2000; Horn & Staker, 2015). As teachers become more cognizant of how their students learn best, they can begin to guide them in accepting more control in the learning process (Bransford et al., 2000).

Students should be able to understand what they are learning and how it can be applied in real-world experiences (Frey et al., 2013). Students who struggle with reading, writing, and mathematics may lack the ability to develop fluency, resulting in learning difficulties that prevent them from developing a deeper understanding of content across the disciplines (Bransford et al., 2000). Teachers are blending face-to-face and online strategies to individualize instruction for students at all academic levels through whole class instruction, small group instruction and independent instruction (Alijani et al., 2014; Cunningham, 2017; Horn & Staker, 2015; Powell et al., 2015; Prescott et al., 2018). Students who receive one-on-one tutoring benefit from the pace and content being individualized and experience more growth than participating in whole-group instruction alone (Horn & Staker, 2015). Teachers utilizing a

blended learning model have more instructional time to focus on student development of higher-order skills and project-based learning (Horn et al., 2011).

Allowing students to learn at their own pace while providing them with individualized support is improving learning for all students (Alijani et al., 2014). If students are forced to move on to the next concept or skill before they have a true understanding, they may not develop the foundational skills necessary to master the next area of focus (Horn & Staker, 2015; Kazakoff et al., 2018; Kieschnick, 2017). If this process continues, a gap between what students know and should know will continue to widen as they move through the education system (Couros, 2015; Horn & Staker, 2015; Kazakoff et al., 2018; Kieschnick, 2017). A blended learning methodology is designed to enable teachers to create a learning environment to address learning gaps by structuring the learning to the individual student (Horn & Staker, 2015; Kieschnick, 2017).

Differentiating instruction is difficult for a single classroom teacher to manage in a traditional classroom setting (Horn & Staker, 2015; Kazakoff et al., 2018). Teachers using a blended learning approach strategically structure their time so they can focus on students who encounter obstacles during their individual learning experiences (Horn & Staker, 2015). They support students in developing self-regulatory behaviors and provide quality support to grow and develop these skills (Basham, Hall, et al., 2016). Technology-enabled learning experiences allow students the choice to move forward as they master a concept, pause if they need additional time, or back up and review content to completely understand a concept (Bergmann & Sams, 2012; Horn & Staker, 2015). Students who are mastering the content continue to move forward in the learning process (Horn & Staker, 2015; Prescott et al., 2018). This process along

with meaningful and timely feedback supports the development of student agency (Basham, Hall, et al., 2016; Horn & Staker, 2015; Kieschnick, 2017).

Teachers incorporating a blended learning methodology simultaneously use a variety of instructional strategies to address the diverse learning needs of all students without sacrificing valuable instruction time among students (Horn & Staker, 2015; Powell et al., 2015). A single instructional strategy that magically works for all students at a specific age or grade does not exist, because not all students learn exactly the same way (Alijani et al., 2014). Teachers implementing a blended learning approach, utilize a variety of instructional strategies that improve learning outcomes for all students, regardless of backgrounds, interests or abilities (Alijani et al., 2014; Horn & Staker, 2015; OET, 2017). Research on how people learn, the expansion of technology in K-12 schools, and the need to prepare students for a global economy are factors that educators must consider for adapting instructional practices to support 21st century learners (Bransford et al., 2000; Powell et al., 2015; OET, 2017).

Strategic Use of Technology

Teachers utilizing blended learning create an environment where learning is enhanced through the application of technological tools that students are accustomed to using outside of the classroom (Horn & Staker, 2015; Kieschnick, 2017). This is where teachers use their professional expertise and experiences of what works combined with the appropriate technologies to strategically plan instruction to address the needs of all learners (Kieschnick, 2017; OET, 2017). The selection of the right digital tool or combination of tools to enhance the specific instructional strategy is essential to be effective and efficient in meeting the desired outcomes (Kieschnick, 2017). As the learning goals change, strategies and tools are adjusted to best meet the learning needs of all students (Kieschnick, 2017). Strategic planning enables

teachers to understand why strategies and tools work or fail in achieving the learning goal (Kieschnick, 2017).

Technology is a powerful tool for teachers, but those whose pedagogical practices align with student learning goals, rather than the technology itself, are seeing improvements in student learning outcomes (Alijani et al., 2014; Frey et al., 2013; Horn & Staker, 2015; Kieschnick, 2017). Teachers are using technology to create scalable learning environments to support students in taking more control of their learning (Alijani et al., 2014; OET, 2017). However, this falls outside the comfort zone for many teachers (Horn & Staker, 2015). These learning experiences support the development of student agency through engaging, meaningful, and student-driven activities (Kieschnick, 2017; Powell et al., 2015; OET, 2017). Blended learning is more than just putting a student in front of a computer screen while the teacher works with other students (Kieschnick, 2017; Powell et al., 2015). It is an instructional approach where learning occurs as all students are actively engaged with meaningful content (Alijani et al., 2014). Teachers incorporate technology into instruction by targeting the learning goals, not on entertaining students with high-tech devices (Alijani et al., 2014; Kieschnick, 2017).

"Any blended learning initiative that doesn't give the wisdom of teachers at least 51 percent market share will fall flat" (Kieschnick, 2017, p. 7). Technology is a powerful tool for improving student learning, but teachers are the most important part of a blended learning methodology (Fullan, 2016; Horn & Staker, 2015; Kieschnick, 2017). The positive relationships built between teachers and students during the learning process is more important than the student and computer connection (Couros, 2015; Kieschnick, 2017). Teachers create an environment that fosters the development of positive relationships with individual students by getting to know them and their learning needs (Horn & Staker, 2015; Prescott et al., 2018).

Building positive, caring relationships with students is critical for improving learning outcomes for individual students (Horn & Staker, 2015).

Technology-Enabled Assessments

Gathering data on how a student is progressing and utilizing that data to provide meaningful feedback is part of the teaching and learning process. Teachers assess the individual learning needs of students and incorporate technology-enabled learning opportunities to provide additional support and scaffolding for students (Frey et al., 2013; Horn & Staker, 2015; Kazakoff et al., 2018; Powell et al., 2015). Providing opportunities for feedback and revision are two critical components of assessment (Bransford et al., 2000; Hattie & Timperley, 2016; Kieschnick, 2017). Teachers must also ensure that what they are assessing is aligned with the learning goal (Bransford et al., 2000; Kieschnick, 2017). Two important types of assessments in K-12 education are formative and summative. Formative assessments are frequent, ongoing assessments administered within the classroom to provide teachers with a picture of where the student is in their learning (Bransford et al., 2000; Kieschnick, 2017; Powell et al., 2015). Teachers meet with students individually and in small groups while implementing collaborative projects and other assignments based on ongoing formative assessment data to improve instruction (Alijani et al., 2014; Lapp et al., 2014; Powell et al., 2015). Technology is used to help teachers personalize learning by matching each student with the right content when they need it (Powell et al., 2015). Summative assessments are those that measure student learning outcomes at the end of a unit or specific set of educational activities, such as teacher-made tests, unit tests, or national achievement tests (Bransford et al., 2000).

Technology-enabled assessments benefit teachers who struggle with finding time to provide meaningful and timely feedback to better meet the needs of students (Frey et al., 2013).

"Studies of adaptive expertise, learning, transfer, and early development show that feedback is extremely important" (Bransford et al., 2000, p. 140). Access to real-time data enables teachers to determine where students are in the learning process so they can plan the next steps to facilitate learning (Basham, Hall, et al., 2016; Tiell, 2017). Teachers use this data to provide meaningful feedback in a timely manner, so students can apply it to improve learning (Basham, Hall, et al., 2016).

Meaningful and timely feedback is crucial for students in developing a deeper understanding of the content, as well as to recall procedures or facts from memory (Bransford et al., 2000). Student learning is improved when teachers provide continuous feedback as a supportive aspect of the learning process (Bransford et al., 2000; Frey et al., 2013; Kieschnick, 2017). Teachers continue to learn how their students think, learn, and understand. Blended learning teachers benefit from being able to assess students through face-to-face and online learning. Students can begin to develop self-assessment skills and learn to work together with peers as part of the learning process (Bransford et al., 2000).

The problem in many classrooms is that feedback does not occur in a timely manner to guide student learning (Basham, Hall, et al., 2016; Bransford et al., 2000; Kieschnick, 2017). Common types of feedback such as grades on tests, papers, worksheets, and report cards do not necessarily provide the type of feedback students need, at the time they need it, because they have moved on to the next assignment (Basham, Hall, et al., 2016; Bransford et al., 2000). "Feedback is most valuable when students have the opportunity to use it to revise their thinking as they are working on a unit or project" (Bransford et al., 2000, p. 141). It is difficult for teachers in a traditional teaching environment to provide quality feedback in a timely manner (Bransford et al., 2000; Horn & Staker, 2015). Teachers implementing a blended learning model

are addressing this issue by utilizing technology to interact with students and provide feedback in synchronous and asynchronous environments (Horn & Staker, 2015).

Computer-Assisted Instruction (CAI) is a personalized learning program that can guide student learning based on performance (Basham, Hall, et al., 2016). However, these types of learning programs do not take into account the strengths and weaknesses of individual students (Basham, Hall, et al., 2016). The algorithms that guide the instruction in these programs lack the ability to address the social-emotional development and other related human connections that K-12 students need to develop during these years (Basham, Hall, et al., 2016). Teachers have the greatest impact on student learning (Arnet, 2016; Basham, Hall, et al., 2016; Couros, 2015; Horn & Staker, 2015; Kieschnick, 2017).

A research study in which students were randomly assigned to three different learning environments for comparing the effects of group instruction to one-on-one instruction yielded results that support the importance of individualized instruction (Bloom, 1984). According to Bloom (1984), students in the first environment were taught under conventional conditions where one teacher covered content for 30 students while periodically testing them. Students in the second environment, which was comprised of the same student-teacher ratio, received the same instruction but the focus was on mastery learning (Bloom, 1984). Teachers in this group used formative assessments, constructive feedback, and additional formative assessments to determine mastery (Bloom, 1984). The third group of students received instruction on content in a one-to-one tutoring environment which also included ongoing formative assessments and constructive feedback (Bloom, 1984). The average student in the tutoring group was about two standard deviations, or 98 percent above the average student in the conventional group (Bloom, 1984). The average student in the mastery learning group was about one standard deviation, or

84 percent above the average student in the conventional group (Bloom, 1984). The most improvement came from students in the tutoring group showing increases in time on task, student attitudes, and interests within each group (Bloom, 1984). When teachers understand the individual learning needs of students, they can provide personalized learning experiences at the right time, level, and pace to move students forward (Bloom, 1984; Horn & Staker, 2015; Kieschnick, 2017). It is not a realistic expectation for one teacher, with many students in the classroom, to accomplish this task without support (Bloom, 1984; Couros, 2015; Horn & Staker, 2015; Sheninger & Murray, 2017).

Students Engaged in Learning

The increase in student engagement has been one of the most identified benefits of implementing a blended learning approach (Horn & Staker, 2015; A. Jones, 2017; Kieschnick, 2017). Students are more engaged by participating in learning opportunities that are tailored to address their needs and interests, giving them a voice and choice in their learning (Slocum, 2016). Students are more active and independent in a blended learning environment compared to those who learn strictly in a traditional face-to-face classroom (Alijani et al., 2014; Means et al., 2010). Learners are more engaged when technology-enabled activities are incorporated into instruction (Bergmann & Sams, 2012; Couros, 2015; A. Jones, 2017; Kieschnick, 2017). These learning experiences increase rigor and relevance while enabling students to have more control over their learning (Kieschnick, 2017; Powell et al., 2015). According to Jones (2017), students in a blended learning environment spend "the majority of their time displaying high levels of attention, utilizing higher order thinking skills, and involved in individualized work and tasks utilizing independent thinking skills." (p. 110).

Teachers emphasize the importance of being able to make sense of new information and encouraging students to ask for clarification when they do not understand (Bransford et al., 2000). Teachers also focus on the types of information and educational experiences that students need to understand the content (Bransford et al., 2000). Instead of simply following the scope and sequence of a textbook guide, teachers expose students to content in real-world learning experiences focused on problem-solving (Bransford et al., 2000). "Ideas are best introduced when students see a need or a reason for their use - this helps them see relevant uses of knowledge to make sense of what they are learning" (Bransford et al., 2000, p. 139).

A blended learning environment also fosters opportunities for socialization in a physical space where they can interact and learn from each other while also receiving support from teachers (Horn & Staker, 2015). Blended learning provides opportunities for students to be able to understand how to communicate, collaborate, and solve problems when they are working independently or with other students (Tucker & Umphrey, 2013). Students are motivated and feel supported in a blended learning environment (Horn & Staker, 2015; Kieschnick, 2017; Prescott et al., 2018). Developing and maintaining positive relationships with students and engaging in meaningful interactions with students is essential for academic success (Fullan, 2016). Students want to feel successful and make progress at what they are attempting to accomplish rather than continually fail at tasks (Horn & Staker, 2015). Students also want to have fun and feel accepted by their peers (Horn & Staker, 2015). School can be a place where students feel like they are failures academically or socially (Horn & Staker, 2015). If students are not experiencing success and acceptance at school, they tend to look elsewhere to meet this need such as gangs or even dropping out of school (Horn & Staker, 2015). Blended learning

creates “a strong, supportive culture that promotes rigor and high expectations for all students, as well as providing healthy, supportive relationships and mentorship” (Horn et al., 2011, p. 7).

Educational Change

According to Fullan (2016), educational change involves a change in practice. This can be difficult for teachers if they are reluctant to change because they feel that the risks are too high (Le Fevre, 2014). Change can also result in a feeling of loss, especially for teachers who have been teaching for a number of years (Kieschnick, 2017; Le Fevre, 2014). The more someone perceives that they are losing something they believe to be important or valuable, the greater they see the risk (Le Fevre, 2014). Fullan (2016) identifies three dimensions that should be considered when implementing educational change. First, the use of new or revised materials should be considered (Fullan, 2016). This refers to instructional resources, new or revised standards, or innovative technologies (Fullan, 2016). Second, is the use of new or revised instructional approaches which denotes new pedagogical practices (Fullan, 2016). Third, is the alternation of beliefs which refers to the assumptions and theories behind new materials and approaches (Fullan, 2016). Changes must occur among each of these dimensions to successfully impact pedagogical change (Fullan, 2016).

Factors That Drive Educational Change

Motivation is a critical component of any successful educational change (Fullan, 2016; Sheninger & Murray, 2017). Successful change results from not being afraid to make decisions and take action when facing uncertain situations (Fullan, 2016). Actual educational change stems from teachers thinking and learning through new experiences and from pursuing meaning through reflective action based knowledge and experiences (Fullan, 2016; Sheninger & Murray, 2017). “It is at this level where change is sustained to the point that it becomes an embedded

component of school or district culture" (Sheninger & Murray, 2017, p. 43). The process of change involves different behaviors and emotions that lead to a change in pedagogical beliefs (Fullan, 2016; Sheninger & Murray, 2017). As behaviors change, individuals begin to have insight and feelings that begin to shape new beliefs (Fullan, 2016). Developing a shared vision and helping others develop efficacy contributes to a successful change process (Fullan, 2016). The process of change involves shaping and reshaping ideas to build ownership and capacity among individuals involved in the process (Fullan, 2016). Educational leaders can support the process of change by removing barriers and empowering teachers to take risks (Sheninger & Murray, 2017).

Fullan (2016) describes a policy driver as a related set of strategies that are intended to bring about positive change. Drivers for educational change should foster intrinsic motivation, support continuous improvements in teaching and learning, encourage collaboration, and impact all teachers and students (Fullan, 2016). These are essential components of large-scale educational change and are grounded in deep, shared meaning (Fullan, 2016). Successful educational change involves the professional growth of teachers, both individually and collectively, establishing a positive school climate for teaching and learning, as well as parent and community support (Fullan, 2016).

Fullan (2016) also describes wrong drivers that can sound like effective reasons to change but will not necessarily produce the same desired results. Wrong drivers are those that have a negative impact on whole-system change (Fullan, 2016). Although these are important, they should not be the primary reasons behind the drive for educational change (Fullan, 2016). Politicians and their communities expect rigorous accountability measures in education (Fullan, 2016; Griffith et al., 2013). When accountability measures are put into place, it is assumed that

teachers have the knowledge and ability to provide the instruction to support those accountability measures (Fullan, 2016). So, starting out with accountability is not the best choice to actually improve student learning outcomes (Fullan, 2016). The central focus in improving student learning outcomes should be on motivating and preparing the teachers through capacity building for results rather than external accountability alone (Fullan, 2016; Sheninger & Murray, 2017). Although accountability is important, it is not an effective driver of change (Fullan, 2016).

Large-scale educational change does not occur by focusing on individuals as drivers for change (Fullan, 2016). Successful change initiatives focused on improving all educators by raising expectations for the entire teaching profession (Fullan, 2016; Sheninger & Murray, 2017). Changing the culture and the relationships within this culture cannot be accomplished by putting the focus on individuals (Fullan, 2016). Educational leaders must begin to focus on reaching goals by creating a culture focused on embracing change by investing in building capacity and working as a group to achieve common goals (Fullan, 2016; Sheninger & Murray, 2017). Teaching improves as it becomes more of a collaborative effort (Fullan, 2016; Parsons et al., 2016). Purposeful learning as a collective group has a more significant impact on educational change (Fullan, 2016; Parsons et al., 2016). The driver for successful change centers on collaborative work rather than individual teachers and leadership quality (Fullan, 2016).

The acquisition of technology without considering how it will be utilized is the wrong driver for successful educational change (Fullan, 2016; Kieschnick, 2017; OET, 2017). Successful change happens by making "pedagogy the driver and technology the accelerator" (Fullan, 2016, p. 45). The technology itself will continue to evolve and improve. It will become more powerful, more affordable, and easier for school districts to obtain (Fullan, 2016; Horn &

Staker, 2015). The right driver for pedagogical change focuses on pedagogy and not the technology itself (Fullan, 2016; Kieschnick, 2017).

Motivation among educators can be contagious and support large-scale sustainable change (Fullan, 2016; Horn & Staker, 2015). According to Fullan (2016), creating an environment where teachers are motivated and dedicated to successful change can be accomplished by the following:

1. Define closing the gap as the overarching goal.
2. Recognize that all successful strategies are socially based and action oriented - change by doing rather than change by elaborate planning.
3. Assume that lack of capacity is the initial problem and then work on it continuously.
4. Stay the course through continuity of good direction by leveraging leadership.
5. Build internal accountability linked to external accountability.
6. Establish conditions for the evolution of positive pressure. (p. 46)

Phases of Educational Change

Pedagogical sustainability involves ongoing professional learning and the empowerment of teacher to be leaders (Sheninger & Murray, 2017). Fullan (2016) identifies three broad phases of educational change: initiation, implementation, and continuation. Basically, a program or direction of change is initiated in the first phase, attempted in the second phase, and either sustained or discarded in the last phase (Fullan, 2016). The outcomes of this process can yield positive results such as improved student learning and organizational capacity (Fullan, 2016). Numerous factors occur within each phase which can impact decisions made at other phases in the process (Fullan, 2016). He adds that other factors that can impact change include who developed and initiated the change, the time frame of the change, and understanding the meaning

of the change. The time from initiation to institutionalization is a long-term process of change taking three to five years, and up to ten years for major reform initiatives (Fullan, 2016).

The initiation phase is the process that precedes the decision to change pedagogical practices (Fullan, 2016). These decisions are constantly occurring and originate from a variety of sources (Fullan, 2016). "The main leadership dilemma at the initiation state is whether to seek majority agreement before proceeding versus being assertive at the beginning (Fullan, 2016, p. 66). Generally, educational change originates from a need to incorporate new innovative practices or to improve existing practices (Fullan, 2016). He acknowledges that there are numerous factors that can impact the initiation phase but identifies several factors that have been evidenced across many studies (Fullan, 2016).

Educational innovations are constantly emerging and changing based on the rapid growth of technological advancements (Fullan, 2016). There are many innovations capable of addressing a wide range of situations, but attention must be given to the quality of such innovations (Fullan, 2016; Horn & Staker, 2015). Program clarity and quality have improved over the years and educators are identifying more effective pedagogies (Fullan, 2016; Horn & Staker, 2015). Educational innovations are more easily accessible in larger urban school districts compared to rural or smaller schools (Fullan, 2016). Another factor that can impact educational change is that it rarely occurs without advocacy from district administrators (Fullan, 2016). District-level interest in change results in necessary resources and funding to support a specific change (Fullan, 2016).

Another factor affecting initiation is teacher advocacy (Fullan, 2016). Teachers working and collaborating with each other build professional capital (Fullan, 2016; Andrew Hargreaves & Fullan, 2013; Parsons et al., 2016). "There is a strong body of evidence indicating that teachers

are often the preferred source of ideas for other teachers" (Fullan, 2016, p. 62). However, the time and opportunity for teachers to engage in collaborative learning is limited (Fullan, 2016; Griffith et al., 2013; Parsons et al., 2016). Professional learning communities support teachers in learning and perfecting instructional practices (Fullan, 2016). An additional factor impacting education change is the involvement of external change agents such as regional, state or national roles (Fullan, 2016; Sheninger & Murray, 2017). Many change agents in these roles have the responsibility for supporting large scale change (Fullan, 2016; Sheninger & Murray, 2017). The role of the community is another factor impacting change (Fullan, 2016). Communities exhibit different cultures and characteristics which include their school district (Fullan, 2016). Community members may support some innovations while blocking others (Fullan, 2016; Sheninger & Murray, 2017). Pressure from communities can be applied to district administrators or through school boards (Fullan, 2016; Sheninger & Murray, 2017). They can oppose potential innovations or even do nothing by way of passive support (Fullan, 2016). The last factor Fullan (2016) identifies impacting educational change is government policies and funding.

According to Fullan (2016), "Implementation consists of the process of putting into practice an idea, program, or set of activities and structure new to the people attempting or expected to change" (p. 67). The implementation phase refers to the first couple of years of the initial change and consists of the initial experiences of applying new pedagogies into practice (Fullan, 2016). A big part of the problem of educational change comes from difficulties involving the planning and coordination of large scale change rather from the resistance of change (Fullan, 2016; Sheninger & Murray, 2017). Fullan (2016) suggested that curriculum materials, pedagogical practices, and pedagogical beliefs would have to change to fully

implement an innovation or reform. Changes in these areas would be critical for successful implementation (Fullan, 2016).

Fullan (2016) identified four characteristics of change: need, clarity, complexity, quality/practically. A formal identification of specific needs is strongly related to a successful implementation of educational change (Fullan, 2016). Clarity about goals and expected practices must be clear for implementation to be successful (Fullan, 2016; Sheninger & Murray, 2017). Teachers must have a clear understanding of what is expected of them for successful change (Fullan, 2016). The complexity of the change being implemented refers to the difficulty or skill set required, the extent beliefs are altered, instructional strategies, and new materials (Fullan, 2016). This creates problems for many educators, but can also result in greater change (Fullan, 2016). The quality and practicality of the educational change is important for a successful implementation (Fullan, 2016). Many decisions to adopt new initiatives have been made without the time and opportunity essential for a successful implementation (Fullan, 2016). Other factors that can impact the implementation phase are school districts, school boards, principals, the role of teachers, as well as other external factors (Fullan, 2016).

The institutionalization or continuation phase refers to the time in which the change is absorbed into routine pedagogical practices or fails (Fullan, 2016). As new initiatives are implemented and practiced over time, continuation really represents another part of the decision making process (Fullan, 2016). Many new initiatives are not sustainable because they were not implemented effectively, a lack of interest, an inability to fund, or lack of professional development and support (Fullan, 2016). Sustainability is reliant on whether the change is embedded into existing structure, generated by administrators and teachers who are capable and committed to the change, and procedures for ongoing support are in place (Fullan, 2016).

Adapting to Educational Change

According to Fullan (2016), "Educational change stands or falls on whether educators, students, and other learners find personal meaning in what they are learning and how they are learning" (p.3). Overloading teachers with multiple or conflicting reforms can overwhelm teachers and impact changes in pedagogical practice (Le Fevre, 2014). Changing educator beliefs can be difficult, but it is a necessary component of educational change (Le Fevre, 2014; Sheninger & Murray, 2017). Teacher beliefs and practices are based on experiences that form strong beliefs that can shape instructional practices although they are recognized as ineffective practices (Le Fevre, 2014). It is difficult for teachers to acknowledge that long-standing pedagogical beliefs are not as effective, so being confronted with this issue can cause a sense of vulnerability as they question beliefs and practices (Le Fevre, 2014).

Adapting to change has been a constant factor for teachers in providing effective instruction to meet the diverse needs of all students (Parsons et al., 2016). Teachers must be able to adapt to change to provide differentiated, appropriate instruction to support the learning needs of all students (Fullan, 2016; Parsons et al., 2016). Fullan (2016) identifies moral purpose and knowledge as main components of change that drives success. Teachers who are committed, satisfied, and engaged in teaching must be at the center of any educational change initiative (Fullan, 2016; Le Fevre, 2014; Sheninger & Murray, 2017). According to Fullan (2016), "the solution is developing the professional capital of teachers and their collective efficacy" (p. 97). Regardless of whether change is voluntary or a result of imposed change, the process can involve loss, anxiety, and struggle (Fullan, 2016).

Restructuring can happen time and time again but changing the culture of thinking is critical for sustaining meaningful change (Fullan, 2016; Sheninger & Murray, 2017). According

to Fullan (2016), “change will always fail until we find some way of developing infrastructures and processes that engage teachers in developing and applying new knowledge, skills, and understandings” (p. 26). Focusing on global competencies while engaging students, as well as teachers, in innovative and active learning experiences is essential (Fullan, 2016). These new pedagogies are critical for 21st century teaching and learning (Couros, 2015; Fullan, 2016; Sheninger & Murray, 2017).

Teachers must be an active part of the decision making process if educational change is to be successful (Parsons et al., 2016; Sheninger & Murray, 2017). Regardless of what instructional programs are used in classrooms, the teacher makes the biggest impact in student learning (Griffith et al., 2013; Kieschnick, 2017; Sheninger & Murray, 2017). The pressures of testing and accountability can heavily influence the instructional decisions made by teachers across all grade levels (Griffith et al., 2013). Teachers make numerous decisions during the school day that range from classroom management to instruction (Fullan, 2016; Griffith et al., 2013; Hattie & Timperley, 2016; Sheninger & Murray, 2017). Teachers instinctively make these decisions based on feedback from students combined with previous teaching experiences (Griffith et al., 2013; Hattie & Timperley, 2016). Also, teachers utilize teachable moments to adapt instruction to respond to student learning needs (Griffith et al., 2013).

A study focused on decisions made by teachers linked to student understanding examined the instructional decisions that teachers made to find out if they were student-centered or influenced by state or local standards and curriculum content (Griffith et al., 2013). Student-centered teaching stems from the belief that all students can learn, and instruction begins based on their individual foundation of knowledge regardless of their academic level (Griffith et al., 2013). Teachers differentiate instruction for students because one method of teaching does not

necessarily accommodate all learners (Griffith et al., 2013). Teachers who are more process-oriented make decisions and modify instructional practices based on student needs (Griffith et al., 2013). In contrast, those who are more content-oriented in their teaching make decisions and modify instructional practices based on the required content (Griffith et al., 2013). The struggle for many teachers who try to provide student-centered instruction is accountability pressures does not allow responsive teaching because the focus is more on curriculum standards over meeting the individual needs of students (Griffith et al., 2013). Teachers are often directed on how and what to do to meet a specific learning goal but providing opportunities for teachers to develop deep content knowledge and utilize this knowledge to make implementation decisions improves teaching and learning (Parsons et al., 2016). This takes time, effort, and ongoing support for teachers to achieve (Parsons et al., 2016).

A successful educational change initiative requires meeting teachers where they are in terms of diversity, workload, and limits (Fullan, 2016). Teachers are experiencing extensive pressures and daily demands that impact sustaining educational improvements (Fullan, 2016; Kieschnick, 2017; Sheninger & Murray, 2017). Teachers across the United States "face ethnic and language diversity, children with special needs, one-parent families, and a bewildering array of social and academic expectations for the classroom" (Fullan, 2016, p. 98). The increased focus on testing and accountability and expectations for failing schools have only produced temporary improvements, not sustainable solutions (Fullan, 2016; Horn & Staker, 2015; Kieschnick, 2017; Sheninger & Murray, 2017). Fullan (2016) found that:

> The circumstances of teaching, including the added pressure of accountability, ask a lot of teachers in terms of daily maintenance and expectations for student success for all, and

> give back little in the time needed for planning, constructive discussion, thinking, and just plain composure, to say nothing of rewards. (p. 99)

The enormous responsibilities on teachers require them to be able to adapt to conditions that are constantly changing and unpredictable circumstances while simultaneously teaching, interacting, monitoring, assessing, and attending to individual needs of students (Fullan, 2016; Sheninger & Murray, 2017).

The degree to which teachers adapt to change is strongly related to opportunities to interact and collaborate with each other for peer support (Fullan, 2016). This is important for supporting sustainable educational change (Fullan, 2016). Many teachers feel isolated from other teachers and uncertainty about how to teach specific instructional strategies (Fullan, 2016). Time and demands on teacher's work continuously increase, and this intense pressure leads to a lack of time to learn and develop pedagogical practices, overwhelms teachers, and minimizes the quality of teaching (Fullan, 2016). Teachers need professional development opportunities designed for skill development, but they also need time to explore, practice, and collaborate with peers (Fullan, 2016).

Professional Learning and Support

Teachers need a strong knowledge and understanding of pedagogical content to support effective instructional practices (Parsons et al., 2016). This includes the ability to apply effective instructional practices beyond just delivering content (Parsons et al., 2016). This type of knowledge is built over time through professional development opportunities and classroom experiences (Parsons et al., 2016). It occurs through continuous professional development opportunities which support the informed decision-making process (Parsons et al., 2016). Teachers are the most significant factors impacting student learning outcomes (Kieschnick,

2017; Le Fevre, 2014). Effective professional development supports positive outcomes in teacher beliefs and practice and includes continuous learning opportunities that go beyond a one time workshop (Le Fevre, 2014; Parsons et al., 2016). These opportunities are relevant to the needs of teachers and involve learning within a collaborative environment (Parsons et al., 2016). Professional learning experiences should also be aligned with student learning goals to support data-driven instruction (Parsons et al., 2016).

The rapid pace of technological innovation is continuously changing how people live, learn, and communicate, which has had a pedagogical impact on how teachers should be teaching (Couros, 2015; Horn & Staker, 2015; Kieschnick, 2017; Means et al., 2013). As access to technology in K-12 schools continues to increase, more teachers are expected to provide online learning opportunities during the school day (Horn & Staker, 2015; Means et al., 2013). However, teachers continue to struggle with effectively using technology (Albion et al., 2015; Basham et al., 2013). The skills that blended learning teachers need continue to be the same as those for effective traditional instruction. (Powell et al., 2014). However, learning to integrate new and improved technology-enhanced instructional practices, based on how students learn best, is crucial for supporting 21st century learners (Bransford et al., 2000; Powell et al., 2014).

Teachers are more effective when they have a true understanding of how a student learns along with why a specific instructional strategy would work best with that student (Bransford et al., 2000; Leake, 2014). This can be a daunting task to accomplish when there is one teacher responsible for meeting the needs of many students in a classroom setting. Learning new instructional strategies does not mean that teachers can easily transfer this knowledge to change pedagogical practices in the classroom (Leake, 2014).

The purpose behind professional development is to support teachers in developing the knowledge and skills necessary to improve student learning outcomes (Kieschnick, 2017; Spencer, 2014). Professional development opportunities for teachers to learn how to effectively integrate technology are often lacking (Spencer, 2014). These activities should be aligned with expectations for 21st century teaching and learning (Butler et al., 2017). Teachers need the time and opportunity to learn how to strategically use technology to support student learning goals (Albion et al., 2015; Kieschnick, 2017). Supporting teachers in building upon the foundation of effective, face-to-face instructional practices that are proven to work while using technology to enhance those practices is essential for teaching 21st century learners (Horn & Staker, 2015; Powell et al., 2014).

The Teaching and Learning International Survey (TALIS) is an international survey designed to examine the working conditions and learning environment of educators from the perspective of teachers and school administrators (National Center for Education Statistics [NCES], 2013a; Rutkowski et al., 2013). The results from this 2013 survey provide insight into how teachers and principals in seventh, eighth, and ninth grade public and private schools perceive their job satisfaction and professional development (NCES, 2013a). The survey is administered every five years, and was first administered in 2008 (NCES, 2013a). The United States participated in the 2013 TALIS, but due to the low number of U.S. participants not meeting the survey standards, the U.S. results were not included in the international averages outlined in the report (NCES, 2013a). Teacher perceptions of professional development are crucial since professional growth can result in improved learning outcomes for students (Parsons et al., 2016).

Ongoing Professional Development

Traditional professional development opportunities are normally determined by school or district administration (Parsons et al., 2016). Instructional strategies and concepts are presented to large groups of teachers who are then expected to immediately incorporate in their classrooms (Parsons et al., 2016). This type of professional development is less effective in sustaining a change in beliefs and practices (Leake, 2014; Main & Pendergast, 2015; Martin et al., 2018; Parsons et al., 2016). Many teachers attend highly motivating workshops and leave ready to implement new ideas in their classroom; however, the excitement soon fades, and they fail to sustain the changes without ongoing support (Kitchenham, 2005). Teachers can improve their skills and abilities to effectively utilize technology to improve student outcomes if they participate in ongoing and meaningful professional development opportunities (Butler et al., 2017; Spencer, 2014).

Ensuring that teachers are prepared to incorporate high quality instructional practices is essential in improving student learning outcomes (Birman et al., 2000). Student learning outcomes are improved when teachers have time to reflect and align the diverse needs of students with professional content knowledge developed through meaningful professional learning experiences (Parsons et al., 2016). One study identified that form, duration, participation, content focus, active learning, and coherence were important features that characterized effective professional development (Birman et al., 2000). Researchers surveyed a sample of over 1,000 teachers participating in professional development activities. Traditional forms of professional development have been slated for the lack of time, active learning activities, and content essential for fostering the capacity for meaningful change inn instructional practices (Birman et al., 2000).

Professional development that focused on small groups, networking, and peer mentoring were more meaningful in fostering a change in classroom practice, because they were geared toward how teachers learn best (Birman et al., 2000). They found that these types of professional development activities were more effective because they occurred over longer periods of time, were content focused, and teachers were involved in active learning activities (Birman et al., 2000). Time for teacher reflection, which is a critical component in professional growth, must be built into professional development opportunities (Krutka et al., 2016).

Participating in continuous professional development opportunities provides teachers with essential support in developing the knowledge and skills essential for effective teaching (Parsons et al., 2016). Continuous learning opportunities through professional development is essential in improving student learning outcomes (Krutka et al., 2016). Professional development must prepare teachers to sustain effective instructional practices over time (Leake, 2014; Parsons et al., 2016). When professional development is continuous, teachers have more time to absorb and revisit concepts to develop sound instructional practices (Leake, 2014; Parsons et al., 2016). Ongoing professional development and follow-up is essential in transforming pedagogical practices (Leake, 2014). The duration of professional development impacts how it affects pedagogical practices (Leake, 2014). Ongoing professional development designed to meet the needs of adult learners supports educators in using instructional practices that effectively incorporate technology (Office of Educational Technology [OET], 2018).

Ensuring the success of 21st century learners involves innovative learning opportunities carried out by teachers with a strong understanding of effective instructional practices and have the knowledge and ability to respond to individual student needs (Darling-Hammond et al., 2009). Professional development opportunities ranging from 30 to 100 hours occurring over a

six to twelve month period had a positive impact on student learning outcomes (Darling-Hammond et al., 2009). Student achievement increased by approximately 21% when teachers participated in an average of 49 hours of professional development within a year (Darling-Hammond et al., 2009). Effective professional development impacts instructional practices and student learning outcomes (Darling-Hammond et al., 2009).

Teachers involved in collaborative professional learning opportunities support changes that go beyond a single teacher's classroom practices (Darling-Hammond et al., 2009). Teachers are increasingly willing to try new methods of teaching along with sharing resources, practices, and ideas (Darling-Hammond et al., 2009). Traditional professional development has been in the form of occasional workshops that last a day or less and focus on general topics (Darling-Hammond et al., 2009). This type of professional learning does not provide the time teachers need for an in-depth study of the topic or for exploring strategies in the classroom and reflecting on instructional practices (Darling-Hammond et al., 2009). Teachers believe that effective professional development is sustained over a period of time (Darling-Hammond et al., 2009). A national school and staffing survey found that 55% of teachers participated in less than 2 days during the school year (Parsons et al., 2016).

Relevant Professional Development Opportunities

It is essential to determine the specific professional development needs of teachers to provide targeted learning experiences to improve teaching and learning (Parsons et al., 2016). Being able to meet teachers at their point of need is critical in terms of providing professional development experiences to support pedagogical change (Parsons et al., 2016). Involving teachers who are knowledgeable about specific pedagogical beliefs and practices essential for change garners additional interest and support in professional learning opportunities (Parsons et

al., 2016). Providing teachers with a choice in professional learning opportunities supports teacher agency by including them in the decision making process (Parsons et al., 2016).

Professional development and support for teachers through more flexible learning experiences based on the individual needs of teachers can support positive pedagogical change (Parsons et al., 2016). Professional development focused on specific content areas rather than general teaching practices has been effective in changing pedagogical practices (Birman et al., 2000). Teachers are more likely to change instructional practices if they were involved in active learning opportunities as part of their professional development (Birman et al., 2000). Coherent professional learning experiences that are consistent with teacher goals, have opportunities for follow-up activities, and are aligned with standards are components of effective professional development (Birman et al., 2000).

Professional development is more community-based and relevant to the instructional needs of teachers which results in a gradual and sustained change in pedagogical practices (Parsons et al., 2016). TALIS data show that 27.6 percent of U.S. teachers who participated in the survey felt that the professional development activities offered were not relevant (NCES, 2013a). Adult learners need relevant and active professional development experiences to learn new instructional approaches and technologies (Leake, 2014). Taking into consideration the background and experience level of a teacher plays an important role in providing relative professional development activities (Jones & Dexter, 2014; Siko & Hess, 2014). It is important to consider the background, experiences and prior knowledge that teachers bring to the classroom (Krajcik et al., 2014). When teachers share ownership in the decision-making process, they are more likely to accept pedagogical change (Bayar, 2014).

Coaching and Collaboration

When professional development is sustained over time, teachers have more time to absorb and revisit concepts to develop sound instructional practices (Leake, 2014; Parsons et al., 2016). Job-embedded professional development experiences can help teachers develop the skills necessary to provide meaningful opportunities for students (Butler et al., 2017; Spencer, 2014). Adult learners also need ongoing support with specific feedback to improve teaching (Spencer, 2014). Educative models of professional development that are continuous over time and consist of job-embedded learning experiences provide authentic learning opportunities for teachers (Parsons et al., 2016; Sugar & van Tryon, 2014). Teachers are participating in active learning opportunities while incorporating strategies learned during professional development in their classroom (Parsons et al., 2016). Continuous self-reflection, collaboration with peers, and coaching support the development of effective instructional practices over time (Bayar, 2014; Parsons et al., 2016). Investing time and opportunity for ongoing professional development builds the ability for teachers to develop knowledge and skills essential for meeting the needs of all students (Parsons et al., 2016).

Teachers from the same content area or grade level participating together in professional development activities were more likely to sustain pedagogical change (Birman et al., 2000). This is due to teachers being able to share similar content, resources, and instructional practices designed for a specific group of learners as part of a shared professional culture (Birman et al., 2000). Mentors and teacher leaders within these collective groups provided additional support to others within their group (Birman et al., 2000). This includes activities such as being engaged in more meaningful conversations with peers, observing other teachers teaching in their classrooms, peer coaching, and other similar types of professional learning (Birman et al., 2000).

Participating in individualized coaching with a more knowledgeable peer can ensure teachers develop a deeper understanding of how to address student needs with effective instructional practices (Parsons et al., 2016).

A positive school culture with opportunities for teachers to collaborate and explore new and innovative ideas creates an environment where teachers feel less isolated (Parsons et al., 2016). This can be difficult to achieve without educational leaders establishing sufficient time and opportunities for teachers to share content knowledge due to a lack of time and opportunity to collaborate with each other (Andy Hargreaves & Fullan, 2000; Parsons et al., 2016). Although many teachers are willing to try professional learning opportunities to improve instruction, they are not likely to share or seek out support from colleagues (Andrew Hargreaves & Fullan, 2013; Parsons et al., 2016). Generally, teachers are more isolated within their classrooms and are more likely to close the door and do what they want (Parsons et al., 2016).

Teachers who have time and opportunity to participate in professional development experiences where they can collaborate, discuss the diverse learning needs of students, explore new pedagogical practices and implementation strategies are able to apply best practices to improve student learning outcomes (Parsons et al., 2016). Providing teachers with job-embedded professional development is important in supporting a change in practice (Parsons et al., 2016). Working with coaches or peer models enables teachers to receive important feedback as they learn new instructional strategies to meet student learning needs (Parsons et al., 2016).

Professional Learning Communities

Engaging in continuous informal learning opportunities within professional learning networks can results in change beliefs, practices, and behaviors to improve student learning outcomes (Krutka et al., 2016). Professional learning communities or networks provide

personalized and continuous support for teachers (Krutka et al., 2016). Many teachers turn to professional learning networks to focused on their specific interest and needs to enhance traditional professional development (Krutka et al., 2016). Informal activities such as engaging in conversations, observing other teacher teach, attending conferences, and participating in online discussions are extending professional learning opportunities for teachers (Krutka et al., 2016). Professional learning networks enhance and extend content from traditional professional development activities (Krutka et al., 2016).

"Educators should be collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students" (OET, 2017, p. 3). Collaboration and interaction between teachers during professional development provides an array of educational perspectives along with classroom experiences to support a common understanding of the instructional focus (Leake, 2014). Teachers report that the exchange of ideas and learning from the trial and errors of others were beneficial in professional growth (Wicks et al., 2015). Faculty learning communities are where teachers can learn from and support each other through sharing ideas and discussing pedagogical practices (Cunningham, 2017; Wicks et al., 2015). As teachers meet on a regular basis and collaborate, have conversations, and share best practices regarding teaching in a blended learning environment, they are building the skills and mindset essential for preparing students for success (Cunningham, 2017; Sorbie, 2015; Thies, 2017).

Professional learning communities are effective ways for teachers to help each other learn how to use innovative technologies in the classroom (Prouty, 2014; Sorbie, 2015). Teachers need support in implementing a blended learning approach and the curation of educational resources (Somera, 2018). Transformative and sustainable change occurs if professional development is ongoing, job-embedded, allows time for reflections, and is aligned with

curriculum goals (Sheffield, 2018). Professional learning communities are designed to provide personalize interactions between educators focused on meaningful resources, digital tools, and professional growth (Sheffield, 2018). This type of professional support is essential for supporting the development of technological skills blended with effective instructional practices (Prouty, 2014).

Professional learning communities also enable teachers to build and manage knowledge, create shared practices to improve learning, and sustain critical instructional strategies that support school culture (Fullan, 2016). Teachers develop ownership through collaborating and discussing with other educators between formal professional development experiences (Parsons et al., 2016). An example of this would be teachers meeting with other teachers within professional learning communities and incorporating knowledge gained from these meetings into their classroom. This promotes a safe learning environment for teachers to develop effective instructional practices (Parsons et al., 2016). Teachers participating in professional learning communities gain critical active learning opportunities and social support to improve instructional practice (Birman et al., 2000; Desimone, 2009; Andrew Hargreaves & Fullan, 2013; Parsons et al., 2016).

Social Networking

An increasing amount of time is being spent on social networks compared to other websites (Hunter & Hall, 2018). Social networking sites were not originally designed as a professional learning resources for teachers but are becoming increasingly more popular as spaces for collaborative learning (Krutka et al., 2016; Manca & Ranieri, 2015). The expansion of educational content being developed and shared on social networks is changing instructional practices and school cultures (Hunter & Hall, 2018; Manca & Ranieri, 2015). Educators are

capitalizing on using social media as a tool for sharing resources and connecting with other educators (Hunter & Hall, 2018). Teachers using social media and networking for professional learning have access to global resources at their fingertips (Hunter & Hall, 2018). Professional learning through social networking is becoming increasingly common among educators (Hunter & Hall, 2018). Research indicates that teachers use social media for professional development, collaborating with peers, and curating resources (Hunter & Hall, 2018). Teachers use social networking sites to obtain information about lesson plans, forms and templates and professional development activities (Hunter & Hall, 2018).

Just as online learning expands learning beyond the classroom walls, social networking enables teachers to learn innovative practices through online communities of practice for educators (Manca & Ranieri, 2015). This is one of the most effective professional learning opportunities for educators to improve skills related to integrating technology (Manca & Ranieri, 2015). Collaboration regardless of being in-person or online leads to a change in pedagogical beliefs and practices (Manca & Ranieri, 2015). Professional online communities of practice support professional growth through virtual learning spaces for sharing best practices and curating resources (Manca & Ranieri, 2015). This is having a greater impact on pedagogical practices over traditional professional development opportunities for many educators (Manca & Ranieri, 2015). Expanding an educator's social network supports professional relationships where teachers benefit from increased information (Manca & Ranieri, 2015). A study on educators using Facebook groups for professional development points out that unlike traditional professional development planned and implemented by district administrators, the teachers within the group control the content and the learning process (Manca & Ranieri, 2015). The discussions and resources shared within the Facebook group were relevant and meaningful to the

teachers within the group resulting in improving instructional practices over time (Manca & Ranieri, 2015).

Social networking provides teachers with a wide variety of connections, resources, and best practices that would not necessarily be available without technology (Krutka et al., 2016). Teachers using social media for professional support reported that they felt less isolated because they were connecting and collaborating with educators from around the world (Krutka et al., 2016). Teachers can collaborate, exchange best practices and knowledge, and improve pedagogical practices from other professionals outside of those only available through in-person settings (Krutka et al., 2016). Online professional learning networks provide a means for teachers to engage in activities at a time and place that is convenient for them (Krutka et al., 2016). Teachers can acquire resources, digital tools, advice, feedback and input from other professionals (Krutka et al., 2016). Many adult learners benefit from self-directed learning, but external input from others can provide knowledge for further growth (Krutka et al., 2016). The self-directed design of professional learning networks supports professional growth, confidence, and ownership in learning and adapting to educational change (Krutka et al., 2016).

Development of Blended Learning Competencies

A focus on the critical role of in-person teaching along with effective instructional practices is essential to support teachers as they transition to a blended learning approach (Powell et al., 2014). The International Association for K-12 Online Learning (iNACOL) and The Learning Accelerator organized a national committee of blended learning experts to identify key characteristics of successful blended learning teachers (Powell et al., 2014). This research resulted in the iNACOL Blended Learning Teacher Competency Framework (Powell et al.,

2014). They describe this framework as an evolving tool for educators to use as a guide for implementing effective blended learning practices (Powell et al., 2014).

Researchers identified twelve specific competencies for blended learning teachers and organized them into four domains: mindsets, qualities, adaptive skills, and technical skills (Powell et al., 2014). First, mindsets refer to the pedagogical beliefs that guide thinking, behaviors, and actions (Powell et al., 2014). Having a new vision for teaching and learning and an orientation toward change and improvement is essential for teachers implementing a blended learning approach (Powell et al., 2014). This involves being able to shift from a teacher-led instructional approach to a student-centered approach for learning for the purpose of addressing individual student needs and increasing student engagement (Powell et al., 2014). Embracing change as a professional responsibility to provide personalized and innovative learning environments for students is necessary for 21st century learners (Powell et al., 2014). Understanding, adopting, and committing to mindsets that support educational change are essential for teaching in a blended learning environment (Powell et al., 2014).

Second, qualities refer to personal characteristics and behaviors such as grit, flexibility, and transparency that are developed through coaching and reinforcement over time and are essential for successful educational change (Powell et al., 2014). It is important for blended learning teachers to exhibit persistence, confidence, and optimism to implement and maintain innovative change in classroom practices (Powell et al., 2014). It is important for blended learning teachers to be transparent in their journey by sharing their experiences in what works, what does not work, and the challenges and frustrations they face along the way (Powell et al., 2014). Sharing and learning through collaboration with peers is important to accomplish successful change (Powell et al., 2014).

Third, adaptive skills refer to general skills for all educators along with a focus on reflection, continuous improvement and innovation, and communication (Powell et al., 2014). Adaptive skills are part of ongoing professional growth and learning developed through modeling, coaching, and reflective practice (Powell et al., 2014). The ability to self-reflect on what is or is not working and apply changes to improve is critical for professional growth (Powell et al., 2014). Collaborating with peers and participating in ongoing professional learning opportunities focused on the strategic use of technology is important for successfully implementing and sustaining a blended learning environment (Powell et al., 2014). Communicating and connecting students with effective resources outside of the normal classroom is an essential skill for teachers to support student-centered learning (Powell et al., 2014).

Fourth, technical skills are the skills and knowledge required to perform specific jobs which are developed through instruction, training, and practice (Powell et al., 2014). One of the most critical skills essential for all teachers, is to be able to understand and use assessment data to identify strengths, weakness, and gaps in learning (Powell et al., 2014). Learning innovative ways to continuously assess student progress and adapt instructional practices based on student needs is critical for improving student learning outcomes (Powell et al., 2014). Understanding and utilizing effective pedagogical practices and technology-enabled learning experiences is necessary for blended learning teachers to support student-centered learning (Powell et al., 2014). Teachers implementing blended learning must have a knowledge and understanding of how to manage the face-to-face and online environments within their classroom (Powell et al., 2014). Being able to access and understanding how to use instructional tools, especially digital content, is essential for blended learning teachers (Powell et al., 2014).

Teachers need a combination of technological pedagogical knowledge and content knowledge to support effective instructional practices (Koh, 2018). It goes beyond just being skilled and comfortable with using technology. Technological Pedagogical Content Knowledge (TPACK) has been utilized to support teachers in implementing student-centered learning opportunities (Koh, 2018). Despite increased professional development in TPACK over the last several years, many teachers are using technology more for presenting content (Koh, 2018). Many teachers are improving in their technological proficiency skills, but still lack the confidence necessary to integrate technology in a way that best supports student-centered learning (Koh, 2018). TPACK professional learning opportunities that focus on more specific approaches are having a more positive impact on student-centered teaching and learning (Koh, 2018). A barrier to educational change can be that the professional knowledge and capacity of teachers is manifested within their current knowledge and understanding of pedagogical practices (Koh, 2018). Exposure to new and innovative practices is necessary to improve student learning outcomes because pedagogical change is influenced by a teacher's knowledge, beliefs, and experiences (Koh, 2018). Some teachers have built their knowledge, beliefs, and practices over years of experiences, and can have a difficult time changing from routine pedagogical practices (Fullan, 2016; Koh, 2018).

Time for Practice and Reflection

As innovative technology that impacts education continues to evolve, it is difficult for teachers to keep up with the rapid changes and advancements (Seward & Nguyen, 2019). Teachers must acknowledge the need for embracing technological change in education by developing digital skills to support 21st century learners (Seward & Nguyen, 2019). Time and opportunity to develop these skills leads to building a greater capacity for teachers to make

informed decisions on address the needs of students to improve learning outcomes (Parsons et al., 2016). Rushing teachers through professional learning impacts their ability to make strategic instructional decisions (Andrew Hargreaves & Fullan, 2013; Parsons et al., 2016). The traditional one time workshops do not allow time for the deep reflection and practice that is necessary to adapt new instructional practices (Fullan, 2016; Andrew Hargreaves & Fullan, 2013; Parsons et al., 2016).

Teachers need time and opportunity for meaningful learning to occur (Parsons et al., 2016). Data from the TALIS report indicated that time for professional development is a critical issue for teachers (NCES, 2013a). Educational leaders must focus on providing professional development opportunities to meet the specific needs of the teachers, much like that occurs in the business world (Butler et al., 2017). According to the TALIS report, 45.6 percent of U.S. teachers report that professional development activities conflict with their work schedule (NCES, 2013b). Like other working professionals, many teachers have family responsibilities outside of the workday. The report also shows that 38.7 percent of U.S. teachers perceived this as a big factor in having time to participate in professional development activities (NCES, 2013b).

Teachers need time and support to develop the knowledge and skills necessary for creating technology-enhanced learning opportunities where students experience success in school at their own pace and academic level (Horn et al., 2011). Providing teachers with options for online professional development can encourage them to participate any time, any place, and at a pace that is convenient for them (Hilliard, 2015). Providing professional development in an online environment enables teachers to communicate, share ideas, and support each other while transitioning to a blended learning environment (Sheffield, 2018). It also gives teachers

firsthand experiences with how to provide the same type of learning environment for their students (Prouty, 2014).

Professional development focused on a teacher's specific subject area and the way students learn best is crucial in incorporating effective instructional practices that address the needs of 21st century learners (Leake, 2014; Main & Pendergast, 2015). Teachers need time to learn new strategies, understand the reasoning behind them, apply them in their classrooms, and to connect and collaborate with peers (Horn & Staker, 2015; Leake, 2014). This continuous process results in professional growth which can sustain pedagogical practices to improve teaching and learning (Horn & Staker, 2015; Leake, 2014). Change is a process that takes time, so educational leaders should not expect teachers to automatically be able to transition to a student-centered environment without time to practice and collaborate with other educators on best practices (Butler et al., 2017; Spencer, 2014).

Summary

Chapter 2 is a review of the literature on the impact of utilizing blended learning as an instructional methodology for supporting 21st century learners. This research can potentially support teachers as they strive to improve equity and accessibility for all learners. Teachers incorporating blended learning are adapting pedagogical practices to strategically design meaningful technology-enabled learning opportunities. K-12 classroom teachers using a blended learning approach are seeing improvements in student learning, but more research is needed in this area, especially in the elementary grade levels.

Chapter 3. Methodology

The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. The rapid pace of technological change is impacting how people live, work, communicate and learn (Horn & Staker, 2015; Means et al., 2013). Although the increase in technology in K-12 schools has impacted the dynamics of educating 21st century learners, many teachers are not prepared to adapt pedagogical practices to effectively incorporate technology to personalize learning (Greer et al., 2014; Harasim, 2017; Horn, 2010; Means et al., 2010, 2013). Blended learning is an instructional methodology that has quickly become popular with K-12 teachers as an effective approach for creating a student-centered learning environment (Means et al., 2010; Powell et al., 2015; Suprabha & Subramonian, 2015; Wills, 2015). Learning to balance effective face-to-face pedagogical practices with meaningful technology-enabled learning experiences is beneficial for both teachers and students (Kieschnick, 2017; OET, 2017).

Qualitative Design

Phenomenology is a qualitative theoretical framework appropriate for studying the essence of the lived experiences of teachers as they improve pedagogical practices to support 21st century learners (Patton, 2015). He describes a phenomenological study as one that is "carefully, and thoroughly capturing and describing how people experience some phenomenon - how they perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others" (Patton, 2015, p. 115). A phenomenological study enabled the researcher to gather rich data from participants who were experiencing the same phenomenon to gain a deeper understanding of how they perceived the phenomenon (Patton, 2015).

This design enabled the researcher to examine teacher experiences focused on providing a student-centered learning environment using a blended learning instructional methodology. Examining the actual experiences of teachers throughout the entire process from professional development to classroom application allowed the researcher to gain a deeper understanding of how teachers adapt instructional practices to personalize learning. Data from in depth interviews detailing the experiences of these teachers, from the beginning of their blended learning professional development program until the time of their interview, provided valuable information to support teachers in improving equity and accessibility for all learners.

Research Questions

The central question for this study is: What impact does a blended learning methodology have on how teachers adapt instructional practices to address the individual learning needs of students? The researcher explored the perceptions of teachers in adapting instructional practices using a blended learning methodology to address the individual learning needs of students, by posing the following research questions:

1. What are teacher perceptions of blended learning as an instructional methodology?
2. How do teachers perceive that a blended learning methodology impacts student learning?
3. What are teacher perceptions of blended learning professional development on instructional practices?

Role of Researcher

As an educator for more than twenty-eight years, this researcher has experienced many changes in education. The researcher has developed a deep-seated understanding of how technological changes have impacted education through 20 years as a classroom teacher and 8 years in a district-level position with the school system where this study took place. The

researcher remained objective throughout the research study so that an authentic understanding of participant experiences was obtained. This was critical to ensure that the findings from this study could potentially inform pedagogical practices. The researcher conducted the study in an ethical and responsible manner, while protecting the rights of participants to produce a credible, dependable, and transferable study.

Prior to collecting data, the researcher sought approval for this study from the Institutional Review Board at East Tennessee State University. Written consent was obtained from the Assistant Superintendent of Curriculum and Instruction with the school district where this study took place. There were no risks noted for any of the participants who chose to be part of this study, and their participation was strictly voluntary. All participants received a complete written description of the purpose of this study along with how data would be collected and stored. The researcher obtained written informed consent from each participant prior to collecting data. The researcher ensured that the data was stored securely and kept confidential. The researcher confirmed that all participants understood that they could withdraw from this study at any time. Pseudonyms were utilized to ensure that participant names were kept confidential.

Participants

Purposeful sampling was selected for this study to explore teacher perceptions of using blended learning as an instructional methodology to address the learning needs of all students. According to Patton (2015), smaller sample sizes used in qualitative research are purposefully chosen by researchers to conduct an in-depth exploration of a specific phenomenon. "The logic and power of qualitative purposeful sampling derives from the emphasis on in-depth understanding of specific cases: *information-rich cases*" (Patton, 2015, p. 53). Information-rich

cases are used by researchers to explore and learn about important issues pertaining to the phenomenon being studied (Patton, 2015). A purposeful sample of 15 educators participated in this study. Twelve participants were classroom teachers who were actively participating in a blended learning professional development program within their public school district. There were four participants from each of the following grade bands who volunteered for this study: elementary, middle, and high school. One school administrator from each of these grade bands participated in this study. These three school administrators came from a school where at least one of the twelve teachers participating in the study taught.

The teachers selected for this study have been involved in ongoing professional learning opportunities and collaboration for multiple years within the same public school system. As access to technology increased through this district's 1:1 initiative, this program was developed to support teachers in using blended learning as an instructional approach to improve learning outcomes for all students. The school district's program was designed to accept 15 classroom teachers. Teachers who were interested in becoming part of this professional development program underwent a rigorous application process. Any classroom teacher, kindergarten through grade twelve, had to meet the following criteria to apply for the program: (a) be a certified teacher within the district, (b) teach in a core content area, and (c) have at least five years teaching experience. Applicants were scored based on responses to open-ended questions along with other components obtained as part of the school district's application process. A team of district administrators scored the applications without seeing any identifying information for the teacher applicants. These scores were combined with scores from the principal recommendation form to complete the application and evaluation process. This process was implemented by the school district to select the top 15 applicants to participate in the district-based program.

As part of the school district's program, teachers continuously attended regularly scheduled professional learning meetings led by the school district's five blended learning coaches. This group of teachers and coaches also attended the Tennessee Educational Technology Conference (TETC) for two consecutive years as part of their blended learning professional development program. The scheduled meeting dates for the program following the conference consisted of the group members sharing their learning with the rest of the group. Teachers partnered to present instructional strategies they learned at the conference, how they applied them with students, and the impact the strategies had on teaching and learning. They spent time sharing, collaborating, and developing best practices for effectively incorporating technology into instruction.

Data Collection Methods

The primary source of data collection for this study was individual interviews with participants based on the research questions guiding this study. "Interviews yield direct quotations from people about their experiences, opinions, feelings, and knowledge" (Patton, 2015, p. 14). The researcher used an interview guide with open-ended questions during the interview process (Patton, 2015). Each interview was scheduled at a time and location that was convenient for the participant and lasted from 45 minutes to an hour. All interviews followed the interview guide and were audio recorded to reduce concerns of bias and ensure consistency and accuracy in collecting the data. Written consent to digitally record the interview through audio was obtained prior to the interview.

Data was also collected from school administrators of teachers participating in this study to further support the credibility of this study. The researcher followed the interview guide with open-ended questions to gather data based on an administrator's perspective. Each interview

was scheduled at a time and location that was convenient for the participant and lasted for 45 minutes to one hour. All interviews were digitally recorded to reduce concerns of bias and ensure consistency and accuracy in collecting the data. Written consent to digitally record the interview through audio was obtained prior to the interview.

Data Analysis Methods

"Triangulation of data sources within and across different qualitative methods means comparing and cross-checking the consistency of information derived at different times and by different means from interviews, observations, and documents" (Patton, 2015, p. 662). The researcher used triangulation methods to validate the data collected from the interviews. This ensured the subjectivity of the researcher along with validating participant responses. Data analysis began with the interview data that was collected from participants during the interview process. Inductive analysis of the interview data allowed the researcher to discover patterns and themes from the interview data collected in this study (Patton, 2015).

The consistency of patterns that emerged from the different data sources and reasonable explanations to explain the differences when they occur contributed to the credibility of the findings in this study (Patton, 2015). Member checking was utilized to ensure the accuracy and credibility of the data. After the researcher transcribed the interview data, member checking was utilized to confirm the information obtained during the interview process. The researcher analyzed the data through the initial coding process looking for any commonalities of the lived experiences of participants. Initial codes were grouped to identify common themes from the data (McMillan & Schumacher, 2010).

Summary

The researcher utilized purposeful sampling to select participants for the purpose of examining the lived experiences of teachers utilizing a blended learning methodology to address the diverse learning needs of 21st century learners. The fifteen participants selected for this study included twelve teachers involved in a blended learning cohort who were learning and working together to improve teaching and learning through the effective use of technology. Three participants were school administrators at schools of participating teachers. Examining the perceptions of teachers who are adapting pedagogical practices to best address and meet the needs of all learners can potentially benefit both teachers and students.

Chapter 4. Findings

The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. This research focused on teachers who were participating in an ongoing professional development program within their school district, focused on providing a student-centered blended learning environment. Adapting instructional practices to effectively use technology to enhance learning is a strategic process. The researcher sought to gain a better understanding of how teachers perceived utilizing a blended learning methodology impacted pedagogical beliefs, practices, and student learning.

Data was collected from a total of fifteen interviews with teachers and school administrators. Individual interviews were conducted with 12 teachers participating in the ongoing professional development program focused on providing a student-centered blended learning environment. The participants answered open-ended questions based on a semi-structured interview protocol. Teacher participants responded to the interview questions by describing their experiences in adapting instructional practices to effectively utilize technology using a blended learning methodology. They shared their specific professional development experiences and described the impact it had on their ability to utilize blended learning to address the needs of all students within their classroom. They discussed specific instructional strategies along with the impact those strategies had on student learning. They shared classroom implementation and management strategies for implementing, maintaining, and sustaining a student-centered blended learning environment. They described the process of how they found themselves adapting their pedagogical beliefs and instructional practices as they participated in

this ongoing professional development program. Responses from school administrators were utilized to support the credibility of this research.

Three research questions were developed by the researcher to guide this study. The goal in question development was to gain a better understanding of how teachers adapt instructional practices using a blended learning methodology to address the individual learning needs of students. The open-ended interview questions were designed to obtain more in depth information about the experiences of teachers to answer the following research questions:

1. What are teacher perceptions of blended learning as an instruction methodology?
2. How do teachers perceive that a blended learning methodology impacts student learning?
3. What are teacher perceptions of blended learning professional development on instructional practices?

Participants

The researcher requested and received permission to conduct this research study within the school district. Purposeful sampling was utilized to gain insight into the perceptions of teachers participating in an ongoing professional development program with their school district which was focused on providing a student-centered blended learning environment. Teachers were invited to participate in this study based on the criterion of being an active participant in this multi-year program. Administrators were invited to participate in this study based on the criterion of being a school administrator at the school of these participating teachers. All participants were invited to participate in this research study via an email from the researcher. Each participant received a digital copy of the Informed Consent Form within the email which allowed time to review the purpose of the study along with what they would be doing if they

chose to participate. Each interview was scheduled and conducted in a place that was comfortable for participants and allowed for anonymity of participants to be maintained.

As shown in Table 1, the educators who participated in this study have been teaching anywhere from five to more than twenty years and represent several grade spans and core curriculum areas. This sample included 5 educators with between 5 and 10 years of teaching experience, one educator with between 11 and 15 years of teaching experience, 5 educators with between 16 and 20 years of teaching experience, and 4 educators who have been in education for more than 20 years. There were four participants from each of the following grade bands who volunteered for this study: elementary, middle, and high school. One school administrator from each of these grade bands participated in this study. These teachers represented several core instructional areas across multiple grade levels including reading, math, social studies, science, and English Language Arts.

Table 1.

Participant Characteristics

Characteristic	Elementary (n = 5)	Middle (n = 5)	High School (n = 5)
Teaching Experience			
5 to 10 years	1	4	-
11 to 15 years	-	-	1
16 to 20 years	4	1	-
20+ Years	-	-	4
Content Area			
ELA	1	1	2
Math	-	-	2
Math & Science	-	3	-
Self-contained (all)	3	-	-
Administrator	1	1	1

Note. Elementary = 1^{st} – 5^{th} grade; Middle = 6^{th} – 8^{th}; grade; High School = 9^{th} – 12^{th} grade.

As a component for agreeing to participate in this study, no identifying information will be shared regarding individual participants. There were fourteen females and one male employed by the same school district who participated in this research study. As a level of protection for all identities, pseudonyms were used throughout the data presented in the findings. The pseudonyms for teacher participants are identified as Teacher 1 through Teacher 12. The pseudonyms for school administrator participants are identified as Administrator 1, Administrator 2, and Administrator 3.

Results

Interviews were conducted to analyze the perceptions of teachers and to identify common themes among this group of educators. The researcher transcribed each interview and utilized member checking prior to beginning the coding process. The credibility of this research was supported via triangulation of teacher interview responses, administrator interview responses, and member checking. The following section is a summary of the data collected through interviews and analyzed to identify commonalities in educator perceptions. Results are organized by the research questions that guided this study.

Research Question 1

Table 2 identifies the common perceptions of teachers that emerged from interview data that pertained to blended learning as an instructional methodology. Educators had strong perceptions regarding understanding blended learning as an instructional methodology, implementing and managing a blended learning environment, the strategic use of technology to enhance learning, differentiating instruction with technology-enabled learning, and using data-driven instruction and immediate feedback from ongoing assessments.

Table 2.

Teacher Perceptions of Blended Learning as an Instructional Methodology

	Grade Level Range				Years of Teaching Experience			
	E	M	HS	A	5-10	11-15	16-20	20+
Teacher Perceptions	(n=4)	(n=4)	(n=4)	(n=3)	(n=5)	(n=1)	(n=5)	(n=4)
Understanding Blended Learning as an Instructional Methodology	4	4	4	3	X	X	X	X
Implementing and Managing a Blended Learning Environment	4	4	4	3	X	X	X	X
Strategic Use of Technology to Enhance Learning	4	4	4	3	X	X	X	X
Differentiating Instruction with Technology-enabled Learning	4	4	4	3	X	X	X	X
Data-driven Instruction and Immediate Feedback Based on Ongoing Assessments	4	4	4	3	X	X	X	X

Note. E=Elementary (1-5), M=Middle (6-8), HS=High School (9-12), A=School Administrator

Understanding and Knowledge of Blended Learning

When participants were asked to describe blended learning as an instructional methodology, all 15 participants shared a common understanding of the instructional approach. Teacher 1 stated:

> Blended learning is an instructional methodology where I can get more done and reach kids in a lot of different ways. Blended learning has allowed me to deliver instruction in different ways. The technology has allowed me to make what I have been doing better. My direct instruction practices have changed to better meet the needs of my students. I am doing direct instruction in smaller chunks and trying to gear it toward what students

need to get the skill. I am still teaching the same stuff I always did, but I just teach it in smaller chunks now.

Teacher 2 stated:

> Blended learning is pulling in a mix of traditional pencil, paper and technology into instruction. You have a variety of tools and strategies that you can use in a way that meets all of those different types of learning needs. It benefits students as well as teachers. One of the big things with blending learning is allowing students the choice on how they present their learning and how they learn. I have incorporated choice boards in my classroom, and it has been a great way to give my students choices.

Teacher 3 stated:

> Blended learning is taking different strategies, different teaching styles, different learning styles and putting them all together in a way that supports all of my kids. Using blended learning sets the foundation for being flexible and learning what works best from year to year for your kids.

Teacher 4 stated:

> It's just trying to find ways to integrate technology within my classroom that actually helps the kids learn the material better. You are not really having to change everything; you are just kind of using technology as a tool. It was a way to differentiate and just different ways of presenting the material.

Teacher 5 stated:

> I think blended learning is when you take all of the classic stuff and merge it with technology. The fact that you take everything that you have already done and been teaching, all of those instructional methods that you normally use that work, and you just

spice it up. You add the technology which to me enables them to be actively involved opposed to just sitting there listening to you. So, I think for me as a teacher, it's made it a lot more exciting. Making them responsible in terms of what they're learning, how they are learning it, being creative, and just putting some more responsibility on them as opposed to putting the responsibility all on me. It's just a different way of looking at things.

Teacher 6 stated:

> Well, to me it's really just being able to find that balance between utilizing the technology that we have available in today's society, and things with a sort of old school method that is hopefully more effective.

Teacher 7 stated:

> Blended learning to me is finding a way to effectively incorporate technology so students are learning at their best level. Incorporating blended learning enabled me to make learning fun. I find that by using blended learning, I am doing something that the kids enjoy. This is great because I want to make learning fun for them. When learning is fun, my students are more into what I am teaching them. I just think that it is great whenever you can touch on something that they are interested in and it sparks their interest. My students were able to better understand skills and concepts since I started incorporating blended learning practices. I think they are able to learn better because it is more hands-on learning and meaningful to them.

Teacher 8 stated:

> I consider blended learning to be part whole group or even small group instruction with me directly, but then also pulling in technology. Students are learning independently and

with me in different ways and using technology as a tool to learn. I can differentiate when I have them in groups.

Teacher 9 stated:

> Blended learning is exactly what it sounds like, which is a blend of instruction using technology to match those old school methods, blending them together to maximize student achievement. Prior to transitioning to blended learning, I would try to avoid using technology because I did not want students sitting at a desk and staring at a computer screen for long periods of time. I have learned, that is not what blended learning truly is about. Now, I use technology to make learning more collaborative for students and I give them things where they are working together and creating.

Teacher 10 stated:

> Blended learning is something that a lot of teachers are doing anyway, they just don't realize it. My understanding of blended learning is using multiple resources so that every kid, regardless of their level, strengths, or weaknesses, have the opportunity to succeed in meeting that objective. So, it is combining classroom instruction and different digital platforms to reach all of my students. Blended learning is an approach where students can demonstrate understanding in ways that they learn best. They need to be able to use technology to communicate and show what they know in the digital world we live in today.

Teacher 11 stated:

> Blended learning is a way that kids can utilize technology for learning in a meaningful way rather than just as a game. There's nothing wrong with the fun aspects of technology, but there's so much more to it. Although I am not a science teacher, I can't

even begin to understand the tech that you can use to improve science and how the simulations and the models work, but I know it's there. It is an approach that will help prepare students for the skills that lie ahead in the world outside of the classroom.

Teacher 12 stated:

> Blended learning is taking old school stuff that you've always done, and then blending in the technology with it. It's not like reinventing the wheel, it's just adding to it. It doesn't mean you have to get rid of everything that you've always done. It just means you're using the technology to enhance it. I think the major difference is that I integrate a lot more technology and less paper assignments. They are getting high quality instruction from me and through technology. I know they're doing something that's keeping their minds active.

Administrator 1 stated:

> I believe that blended learning is taking digital tools and using them with what we know as good teaching. Just adding the technology to have in your tool belt to teach what we know works and to teach in a way that we know it works.

Administrator 2 stated:

> Well, blended learning for our kids of course is to use several different methods of technology for instruction, not just as a game. Having 1:1 Chromebooks has been great for teaching and learning, but blended learning is not solely about technology. Blended learning is embracing all types of learning.

Administrator 3 stated:

> It's a method for providing instruction to students using technology. My blended learning teachers start by focusing on their standards and then create or find technology to help students learn the skills.

Managing a Blended Learning Environment

All 15 participants utilized a form of the station rotation model of blended learning in their classroom. Managing a blended learning environment involved components from the different blended learning models to best fit the needs of their students. This involved opportunities for addressing all levels of need in the classroom. This theme refers to the knowledge, abilities, and understanding that participants, based on their experiences, deemed necessary to effectively implement and sustain a blended learning methodology. This theme emerged from the following codes: flipped learning, station rotation, classroom application, classroom management, pacing, and relinquishing control.

Teacher 1 stated:

> I use a station rotation model of blended learning on most days of the week even though stations are not typical in middle school. I split my students into two groups, and stations are implemented in a very strategic way based on their assessments. My lower students come to me first for direct instruction, while my higher students go to a station first. I use the feedback to make sure I get to my struggling kids first. It does not make sense to send them to a station to practice, if they don't get it. They need more face-to-face time with me. Students are generally watching some sort of interactive video lesson and doing independent practice during stations. They have assignments on Khan Academy, Edpuzzle, or a PlayPosit. Sometimes they work on an IXL assignment or use Flipgrid.

Then halfway through class, the groups will switch. The higher group has had some exposure in stations to what we are focusing on, so I am able to move through instruction faster with them. The lower group will get practice at stations that will reinforce what we did during a small group instruction. All students see me face-to-face every day for instruction and help and use digital tools in stations.

Teacher 2 stated:

I use kind of a mixed version of blended learning. I don't do one standard thing every single day. I use stations some, but for the most part I use a lot of whole class instruction with a lot of individualized learning and independent practice using the technology.

Teacher 3 stated:

I use a station rotation model of blended learning in my classroom. It seemed to just sort of flow smoothly because I was already doing stations and small groups. I was able to incorporate more activities using technology to reach all learning levels. Since I team teach with another teacher, we kind of do our own model. Students see an adult every day for math, and then they go to a journaling station, a game station, a kinesthetic station, and a Chromebook station. Students are using Chromebooks instructionally and not for playing games when they finish an assignment. Everything is strategically planned and organized. I use a station rotation model for my reading block as well. Students see an adult each day and then they do a Chromebook station along with literature stations. I spend the first several weeks of school training the students on the procedures, how to rotate, and what to do at the stations. They caught on quickly and knew what was expected of them. We have charts to show students where to go and what to do, so it builds student responsibility.

Teacher 4 stated:

> I use technology a lot for flipped learning. I did a lot of the Screencastify videos. I'll record myself doing lessons and have the kids watch it and do the notes that way. I use it some with station rotations where there is a technology component of it. So that's part of their rotations.

Teacher 5 stated:

> I use the station rotation model in my blended learning classroom. Blended learning has enabled my students to do more discovery-based learning. I tend to go mostly towards that discovery concept in teaching, and just combine all the technology and everything that goes with it to do that. I like the fact that you can be so interactive in the station rotation model. I try to incorporate learning experiences focused on discovery and creatively with the students. It is about truly getting kids to come up with their own solutions, their own ideas. Blended learning has enabled me to provide learning experiences that increase my students desire to learn. It's just kind of more fun based, but they're learning so much about it as they're doing it, and they just don't realize it sometimes.

Teacher 6 stated:

> I use a variety of different activities and programs in my blended learning classroom. I like to do projects that give students the opportunity to create things. They have time to research and find information out for themselves. This enables me to prepare them for real-world experiences and make learning more personal.

Teacher 7 stated:

> I use the station rotation model of blended learning to teach reading. I do ten minutes of whole group instruction, and then I start rotations. The rotation groups are based on their Lexile level or how they did on a specific skill we are working on. I do three rotations for 20 minutes each. During one of the rotations, students come to me for small group instruction based on the skill. The small groups change according to how they perform on the online assessments I give. A second rotation is where students are working on some type of independent reading either alone or with a partner. The third rotation is using technology programs where I give them practice and reinforcement on specific skills that we are working on in their small groups.

Teacher 8 stated:

> I put assignments in Google Classroom, so the kids have access to what they need. I use technology to enhance learning for students. I use Khan Academy sometimes for direct instruction and small groups, especially for students that are struggling. It allows them to have reinforcement, so if they are having trouble, I can assign them a Khan Academy video or other online activity to give them extra instruction. They benefit from hearing it in different ways. I have also used Screencastify to make my own videos for my students. These are also good when there is a substitute, because I record myself teaching the lesson. This helps especially when teaching math, because the kids still have me teaching them even if I am not there. They can also play it back and watch it as many times as they need until they understand it.

Teacher 9 stated:

> Although I do not always go by a specific model of blended learning in my classroom, I use station rotations and try to incorporate technology into most of my lessons. It could be during a warm-up activity or in the form of a HyperDoc that the class might go through together. One of the instructional strategies I use in my stations is interactive videos. I have a note-taking station where students watch either a video of me teaching or one from another source I have selected for that specific lesson. Students are expected to take notes in this station using pencil and paper or an online notebook using Google tools. It is usually a video of me that I assign through Edpuzzle. This is an interactive video platform where they have to answer questions throughout the video along the way. The next station they go to would be activities that focus on individual practice. My students must pass the assessment to go to the next standard. If they fail the assessment, then I pull them into a small group. We figure out where their misconceptions are, and we will go back to their notes and then try it again together. We will just keep going through the process until we narrow down the problem.

Teacher 10 stated:

> I want to provide my students with deeper and more meaningful learning experiences by incorporating a blended learning methodology. Most of my direct instruction is to the whole group, but I am working on getting more comfortable with utilizing station rotations. I usually give my students a guide to use for analyzing the novels we cover in our class. It is basically a list of learning expectations and instructions, but how students show me their learning is up to them. Some of my students are more artistic, so they like to draw or work on creative projects. They can choose that approach to show me they

understand the assignment from the novel study guide. I also like to give them a choice in whether they want to demonstrate their learning using pencil and paper or digital tools. Some like to use Google Slides or even something that they are more familiar with that I don't know about. As long as what they produce can show me that they comprehend and understand what they are learning, I am open to how they want to express it.

Teacher 11 stated:

> My students have access to all of their assignments and materials through Google Classroom regardless of whether it is an online or printed assignment. I still usually post it so they can see it just in case they lose it or just to have it as a source.

Teacher 12 stated:

> I use a station rotation model of blended learning. We do a station rotation with math and reading. My students rotate through stations focused on poetry, comprehension, vocabulary, work, and listening during their reading block. Routines must be established and taught, because if you don't, you are going to have chaos. I integrate a lot more technology and in more meaningful ways now that I am using blended learning. I have 1:1 Chromebooks, so some of the station rotation activities involve students using their devices independently and during small groups. All of the digital resources I use with students are hosted in ClassLink, which is a single-sign on, and rostering platform provided by the district. Students come to me for small group work as part of their station rotation time.

Administrator 1 stated:

> I see my blended learning teachers using Chromebooks as a tool in our school. Some are using Google Slides to make a slideshow about whatever it is that they are learning, and

some are using Quizlet to study vocabulary. It is evident when I walk into a blended learning classroom of one of my teachers, it is obvious that their end goal was to teach the skill that they were working on and just sliding in technology as a tool to help.

Administrator 2 stated:

> My blended learning teachers use effective instructional strategies, but also augment that instruction with technology. It is so important for kids in the 21st century, because we don't even know what their jobs are going to be.

Administrator 3 stated:

> I have two blended learning teachers that team teach together. They do blended learning rotations together for reading and math. They will do a direct instruction group with the teacher which involves teaching the skill or concept, while the other students are working within stations. Students are doing various activities in stations, some of which involve using their Chromebooks.

Strategic Use of Technology

All 15 participants indicated that blended learning is an instructional methodology that involves the strategic use of technology to enhance learning.

Teacher 1 stated:

> Technology has always been important for me to try to use with my kids, but it is becoming even more important for me to use it with them in the world today. It is critical for them to be able to go back and forth using paper pencil stuff and technology stuff. Technology just keeps changing everything. They need to learn how to use it the right way everyday no matter what they are doing. My students like using technology, so I was able to get more out of them when I began implementing blended learning in my

classroom. Having 1:1 Chromebooks has been a positive experience in my classroom. Like all kids, they are not always 100% on task all of the time, but I have seen an improvement since I began implementing blended learning. Technology is not the only thing they are using, but it is a huge factor in their learning experiences. I still feel like it is important for students to be able to work out math problems on paper to show they understand the process of what they are learning.

Teacher 2 stated:

> It was important for me to transition to a blended learning methodology, because my students liked using technology. It was important for me to find a way to positively use that in the classroom. Most of my students have a cell phone, but they are not supposed to use them during class. Now that we are 1:1 Chromebooks, we don't necessarily need them during class. However, I do have several that will use their cell phones if their Chromebook is messed up, or if they've forgotten it.

Teacher 3 stated:

> Transitioning to blended learning changed my perspective. It opened my mind to different things and really changed how I think about and use technology. It is not all about technology. I realized the importance of incorporating technology, but I did not have any experience with using it effectively with little learners prior to using blended learning. Now, I team teach with another teacher and we utilize 1:1 Chromebooks during station rotations to enhance reading and math. I didn't start with the technology, I just filled in with technology when it makes sense and we have a way to add to what we are learning.

Teacher 4 stated:

> I teach math, so I still want my kids to do a lot of stuff the old school way by paper and pencil so they can work things out. Although this is important, I incorporate technology to address different needs and make learning more meaningful.

Teacher 5 stated:

> I just feel like I, as a teacher, and the students are better off by using it. I feel like it makes them more creative and it motivates them more to want to learn. Anytime you can do that, it's better for everybody. My students are involved in using technology to demonstrate their understanding of the concept or skill being covered. They might create a different problem for every different type of trig ratio and then go create a Flipgrid video to explain it. This has made a big difference for my students, because in math, when you get them to explain the concepts, they are 10 times more likely to remember it than if they just sit there and work them out.

Teacher 5 added:

> Some other things that I've noticed making a difference with kids is when I will post something on a Padlet and then have students find someone else's work in the classroom to critique and determine if it's correct. So, it's forcing them to look at other people's work, which I really feel is a huge help. They have to show understanding to be able to look at somebody else's work and determine if it's correct. Me being able to use technology through a blended learning approach is unbelievable for being able to do that kind of stuff in a cool way, not just by trading papers and writing comments. They can also see more examples at their own pace rather than if we were trading papers all over the place. I really believe that kids are going to rebel if teachers don't start using the

technology because they like it. It's better, more interesting, and they're going to get frustrated when everything is done by paper and pencil and they never get to use technology. This is especially true since technology has changed the way we do stuff every day.

Teacher 6 stated:

> Kids have some understanding of technology, but they are learning more about what they can do with it.

Teacher 7 stated:

> I taught my students a lesson on figurative language where I pulled in YouTube videos that had pop culture references to songs. They had to pick out the figurative language in the songs. They loved this activity because it personally related to the music they listen to and incorporated technology. Next, I used Book Creator to have the kids make books using figurative language along with a Flipgrid video. They were building essential 21st century skills, learning about figurative language, and taking responsibility for their learning all while having fun.

Teacher 8 stated:

> I let kids use Flipgrid to create videos where they explain how to do something, or they can create Google Slides to show me they understand the concept. We usually do a math word problem every day, where the students work on their own. Then, they come into small groups and discuss their answers together. They can create a video on Flipgrid to explain their work. The kids love to be on camera, so it is a good way to engage them in the learning process. Pear Deck is another online tool I use a lot now in my classroom. The thing I like about Pear Deck is if you use it for instruction in a whole group or a

small group, it is interactive. It keeps kids on task, and they like it. They tend to pay a lot more attention when the presentation is right in front of them on their own Chromebook. It helps to keep them more engaged and more on task. They're more excited, so I am more excited.

Teacher 9 stated:

Since I have started blended learning, I have found that my direct instruction has really amped up using things like Pear Deck and even Kahoot. I changed how I was using the little bit of technology I did use before transitioning to blended learning. One difference this year for me with Kahoot is how I am using it now. I used to just use Kahoot to review. Kahoot was probably the only technology I used before blended learning. Now, instead of using it at the beginning or at the very end, I use it throughout a lesson. So, what math used to look like is the kids would come in, there would be a warmup question on the board. They would work that question on their whiteboard while I would go around and check everybody. We would go over all the warmup questions as a class. I would use what I saw watching the kids on the whiteboard to drive the instruction for the day. Then I would give them a chunk of instruction. I chunked up the lesson into five to six minute segments. Then, they would go back to their whiteboards and practice between each chunk, so they were not crazy overwhelmed. Students earned tally marks as they correctly worked and explained their math problems. So, as they get so many tally marks, they would get to go do their individual assignment for the day. Now that I am implementing blended learning, this looks different in my classroom. I give them a warmup question as question number one on the Kahoot and then we would leave that screen for discussion or a different activity based on that specific instant feedback from

the Kahoot question. I can adapt and provide the instruction my students need based off of this immediate feedback. I can address that chunk right then and there. This is more efficient than before when they would write it on their whiteboards, and I would walk around and check each single whiteboard and make notes on my clipboard that I carried around. With Kahoot there is no waiting time and I know in seconds what my students know or don't know. The data is fast, it's right there on the screen, and they're more motivated to be involved. That is one way I have used blended learning that has really enhanced my math instruction.

Teacher 9 added:

I have really focused on questioning more since I have been using the blended learning concept to enhance learning. I felt like questioning was always something that I marked myself low on when I would do self-assessment for evaluations. You plan out all these great questions, but it's very difficult for me to focus on what I am teaching and get through this list of things that I'm supposed to get through. So, having preplanned questions and integrating them into my lesson through Kahoot or Nearpod gives me access to those questions at my fingertips. Using this technology helps me hit all the levels of questioning. These tools tell me right then and there, what they get and what they don't get. For example, I love using drawing questions because sometimes the kids will draw something, and you cannot tell what it is. I will ask them to explain so I can understand more of how they're perceiving it. I also want the other kids to hear that as well, so I really try to get a much deeper understanding of what they know.

Teacher 10 stated:

> I use a digital resource called CommonLit with my students. It has paired text articles that go with novels and questions that are TNReady type questions. I use Quizlet Live for team competition activities to review or expand learning. I also use Pear Deck because they love responding to questions right then and seeing it on the board without knowing that anybody's going to know who answered what. My students are more engaged and don't even realize they are sitting there listening to me for 20 minutes. One of the most important things that I've learned through the cohort is that the technology is just a resource. The technology isn't the headliner, the kids are the headliner.

Teacher 11 stated:

> I still do a lot of the tried and true things that I have always done. Pulling in the technology to enhance has enabled students to use technology more for communication and self-expression in writing. Prior to implementing blended learning, I required students to turn in a handwritten draft of a paper assignment and then later the assignment would be typed for final submission. Now, I give students a choice, because some students are more comfortable writing out a draft and some are more comfortable typing it out. Students use Google Docs for their final paper submissions.

Teacher 12 stated:

> Sometimes I incorporate Edpuzzle into blended learning instruction. I assign interactive videos to address specific learning needs. I can assign a student a specific video and integrate questions throughout the video using Edpuzzle to check for understanding. This has enabled me to meet with small groups without having students just sitting there. They are actively involved in what I have given them because they love to use

technology. They also liked to use Flipgrid to demonstrate what they know. Today, we went over the different parts of the author's purpose, and then I let them pick their own book. I told them to pick a book they had already read. Then, they had to give me a brief summary of the book and tell me what the author's purpose was for writing the book. The students used Flipgrid to create videos to complete the assignment, but they could have used another online tool or traditional paper and pencil type project. It was their choice as long as they could show me the author's purpose from the book they chose.

Administrator 1 stated:

I mean taking technology and using it in an instructional capacity and not using it as the end game. I experienced a teacher using a program throughout her direct instruction that allowed students to answer questions on the go and the response to be displayed on the board. It puts everything out there in an anonymous way, so that they can kind of know where they stand, and they can learn from their peers at the same time.

Administrator 2 stated:

My blended learning teachers seem more excited about teaching now. They are coming in excited and sharing what they are learning with their peers. The content they've been able to embed in Google Classroom has also been wonderful. Just to pull up things like Khan Academy videos that help kids, or even just something as simple as posting their notes for kids that are absent. I mean what a difference it makes for a kid to be able to just get on the Google Classroom and have everything they need for class right there. There are even teachers recording their lectures, putting the videos on Google Classroom where kids can go back and look again, or have access to them if they are absent. So, it's been great!

Administrator 3 stated:

> One day I walked in the classroom while they were teaching reading. The kids were all actively involved, but they were not all doing the same thing. She had a group at her reading table working with her and her kids were working in centers around the room. Some students were creating slides, and some were actually reading into their Chromebook and making recordings. Teachers are using the technology to reinforce and extend learning for students.

Differentiating Instruction

All 15 participants indicated that blended learning provides teachers with better opportunities to address the individual needs of their students.

Teacher 1 stated:

> Differentiating instruction has been an ongoing challenge. I still struggle with how to best do this for my students. I only have a specific amount of time with each class, so although I feel like I am reaching more kids, I am still trying to figure out how to best meet all my student's needs.

Teacher 2 stated:

> Blended learning has been great for tailoring instruction for students who are working at a lower level. I use the No Red Ink program to tailor skills that I know that they are struggling with. The good thing is that the rest of the class doesn't have to know that this one student has a couple of extra skill sets that they're working on versus what everyone else does. So being able to use technology to assess where they are and being able to put them on a program where they are able to work to get the skills at their own pace has been great.

Teacher 3 stated:

> I use data from online assessments to provide specific educational opportunities for my students during their station rotation time. They have to do the stations, but they have some choices within some of the stations, and that is where I am able to use technology to level assignments. We try to use programs like Reading A to Z to match reading assignments to their reading level. That differentiates a lot because they can read the online books on their level, and they have assessments on there.

Teacher 4 stated:

> I utilize blended learning to differentiate instruction for my students. This is something that I am still struggling with, but technology does help. It is a challenge when you have 30 kids in the class, and you try to individualize learning for each one. My students may be working on the same assignment, but I offer choices within the assignment that they can choose from as well as allow them to work at their own pace. So, it is not differentiated in the actual assignment, but in how they choose to work on it.

Teacher 5 stated:

> I use Quizzes and Quizlet as formative assessment tools to see where my students are regarding a concept or skill. Not only does it allow you to determine where they are, but if a kid makes below a 50 then you have an additional assignment that goes to them. If they make above an 80 you can have an additional assignment, which might be more of a challenge exercise.

Teacher 6 stated:

> Blended learning has enabled me to focus more on individual learning needs. Some of the programs I can set for different mastery levels. So that helps differentiate, especially

when working with special education students and ESL students. Occasionally, I will give them different programs as learning options. So, if they prefer one interface over another, or if they prefer paper and pencil, I try to accommodate their learning styles. I try to give them different options to choose from as part of the learning assignment.

Teacher 7 stated:

> When I work with a higher group, I try to create enriching activities for them instead of just giving them more work to do. Technology has really enabled me to manage that. I didn't want to just give them more work to do, I wanted to stress application, critical thinking, and problem solving skills.

Teacher 8 stated:

> I use Reading A-Z with my students as one way to differentiate instruction. For example, when we were studying biographies, I was able to go in and assign each of my students the same biography at their own specific reading level. I can also assign other reading passages at my student's specific reading level.

Teacher 9 stated:

> Incorporating a blended learning methodology has enabled me to identify and address individual student needs more effectively. I do find across the board that technology makes it easier to differentiate for your kids. I have kids that get ahead several lessons, I will either give them an enrichment activity or they will lead small groups. So, I'll have a student help another student on number two and three, see what she's doing wrong and they really, really enjoy that. When I am using something like Pear Deck during instruction, I use a lot of writing and drawing type of questions. I can display the responses without student names and scroll through the answers so everyone can see

them and discuss them. Sometimes my students learned more from each other than they did from just listening to me. This kind of strategy has really helped my lower level kids to see how other kids are thinking. I began to see an instant improvement in all answers as we continue working through the skill or concept. Blended technology into this strategy has made it more effective with students than with paper and pencil. It has really helped my kids who are unsure about their answers because they do not want to share out loud or they think their friends might see them get it wrong. So, they are more engaged in what I am teaching. I could not differentiate this effectively without technology.

Teacher 10 stated:

> My kids always have a list of IXL lessons on the board that they're working on either for review or to cover a set standard or an objective that we've just gone over in class or other options across multiple platforms that they can be working on to review or extend their learning. These digital tools let the students reach mastery at their own pace. It just keeps adjusting to what the student needs until they are capable of showing mastery for that skill.

Teacher 11 stated:

> I am able to address the needs of more students within my classroom since I started blended learning. Now, I can have a small group working on something while everybody else is working on something different on the computer.

Teacher 12 stated:

> Reading A-Z is one of the online tools that I use to address specific reading levels for students during their station rotation time. I also use Flipgrid as part of my blended learning approach for running records. When I have them read to me, I am sitting here

writing and marking stuff. They sometimes then get nervous or distracted by what I am doing. But, when I let them read it on Flipgrid, I can still go back and see how they did. Plus, it frees up a lot of my class time because I'm not sitting back here for an hour doing running records with them, when they can do it pretty much all at once. Then, I can go back and review their videos later. Plus, I have them as part of their record to show strength and areas of concern to parents. Nine times out of 10, they do better if they're reading on a Flipgrid than if they're sitting here reading it to me.

Administrator 1 stated:

I see my teachers differentiating instruction when they are pushing assignments out through Google Classroom. One of my teachers gave an assignment in Google Classroom to all students, but not all students had the same specific tasks or expectations within that assignment. The way that they are using Google Classroom is using the different levels of Blooms to meet kids where they are on the specific skill. I have seen students playing a more active role in their learning by choosing how they show their learning. Some kids may be making a slideshow about something, maybe just typing up something. They may be finding or even creating memes or something that might demonstrate a concept. While other kids are more at a basic level if that's what they need to be.

Administrator 2 stated:

I have seen a big impact on ESL students in blended learning classrooms. Our initial lessons are taught in English, but the blended learning teachers are pulling in wonderful Khan Academy videos for math instruction that teach the same concept in Spanish. They are embedding those videos as resources, along with assignments for those ESL students

who need additional support. Blended learning has made it easier and more private to be able to differentiate instruction for students. They are pushing things out through Google Classroom in a way that students do not know who has what assignment. It's made a difference with our special education kids. They are more involved in hands-on learning, so it is engaging and fun. They are able to use technology in a way that matches their learning style.

Administrator 3 stated:

> One teacher used a program called Reading A-Z to provide reading passages on their level. This teacher was not just addressing the needs of lower level students, she was hitting every single level by the way she organized her stations. They are not giving up any of their face to face direct instructional time with these kids, but they are differentiating for every student every day.

Ongoing Formative Assessments for Data-driven Instruction and Timely Feedback

All 15 participants indicated that they utilized technology to provide ongoing formative assessments. Students were able to receive feedback instantly in most cases which resulted in improved student learning outcomes.

Teacher 1 stated:

> I like using the online assessments to see where my students are. I don't have to wait until the end of a unit. The online programs I use are self-grading and it gives them or me automatic feedback right then and there. I can look at that or they can look at that feedback and it will immediately have an impact on what they are doing that day. I love it because online they don't have to wait on me to sit there and grade it. It is instantaneous for them. I can also use Google Forms to make my own online quizzes and

make it self-checking as well. I can set the grading up ahead of time, so it saves time, and I can see where they are to give them more help or move them on to the next step. Assessment is easier since I have been doing blended learning. I use a mix of online tests and paper-pencil tests in class. I will usually use some type of online quiz or something that will tell me where my students are on a specific skill. I use Edulastic to help me build online tests that are standards-based for that unit. I use this data to break my students into groups. Their groups depend on how they are performing on what we are working on at the time. It is important to know your students and where they are.

Teacher 2 stated:

> I utilize a lot of programs. There is one called No Red Ink. It's a language arts program that deals with grammar. I use the CommonLit program with their reading material. I use the new Newsela Pro to assign articles for them to read that are on their own individual reading level. So, using these kinds of programs let me individualize for their reading.

Teacher 3 stated:

> I use Chromebooks to incorporate fun assessments like Kahoot in the classroom. I also use an online assessment with all the kids every six weeks and that is great for getting immediate feedback to see where each kid is and for progress monitoring. We do it more often throughout the six week period for those students who are struggling in specific areas. That instant feedback helps target their instruction. It's right there and then it even has the data that identifies some of their strengths and some of the things they need to work on, so that's been nice having that.

Teacher 4 stated:

> I create a lot of the resources myself or I find something that's already created and tweak it to what I want to use. I use Google for Education tools such as Google Docs and Google Slides for some assignments. I push the assignments out through Google Classroom so while students are working, I can go in and make comments on their slides or document as they work. I try to give a lot of feedback to my students as they are working on assignments. This feedback is instantaneous and helps guide their learning and prevent untimely misconceptions. I think this is one of the greatest tools within my blended learning classroom.

Teacher 5 stated:

> My students have greatly benefited from the immediate feedback I can give them in a blended learning classroom. Providing immediate feedback for students who need that rote practice learning a skill is priceless. I also use Flipgrid, which allows students to not only have immediate feedback from me, but they can reply to each other. They can analyze someone else's work and determine whether they agree with it. I would be lying if I said it was easier, because it's not. If I said it was less time consuming, it's not. You are definitely increasing the amount of time that you spend assessing. However, doing this has been better for students, because I get a better understanding of what they know.

Teacher 6 stated:

> Most of the programs I use give students instant feedback, which is wonderful. My students benefit from this feedback by knowing immediately if they were on the right track. This is important for me to use to see if there are any gaps in the learning that I need to go back and address before moving forward.

Teacher 7 stated:

> I utilized online tools such as Quizlet and Quizzes for assessment. I really liked Quizzes because it gives their accuracy. It is a quick way to assess students because the feedback is right there when you need it.

Teacher 8 stated:

> I now have more data for our standardized report cards and to show parents a better picture of where their child is academically. Grading is faster because some of the technology is set to automatically grade their work and give them feedback right then. That has been less papers for me to take home each night. I use Reading A-Z sometimes for formative assessments. They are reading it themselves orally and it makes a recording. I don't have time to listen to every child read every day, but they all have time to read every day using this technology. I can listen and use the feedback to reach kids on their reading level. I can also share the recordings with their parents because they like to hear it too. For my kids that are struggling, it's a way for me to really hear, listen, and identify where we can be working. So, I think it's a way that you can really spend one-on-one time without spending one-on-one time.

Teacher 9 stated:

> I use Mastery Connect as part of my blended learning approach to collect quick assessment data on the progress of my students. I use it as their exit ticket, so I will just go through and look and see if that column is lit up red and yellow. Then, tomorrow before I go onto the next lesson, we will take 15 or 20 minutes to review those questions and see why they missed it.

Teacher 10 stated:

> The technology's great, but just having that instantaneous feedback for me has been the most rewarding part of my blended learning classroom. I do not have to wait until the end of a lesson and do an exit ticket, that I am going to read late and then come back and address the next day. I can redirect thinking instantly, so they don't walk away with misconceptions about whatever it is I am teaching.

Teacher 11 stated:

> Students turn their final papers in using Google Docs which is where I do all of my grading and feedback. I can go into their document while they are working on it or once they have submitted it and make comments to guide them in the process. It is beneficial to students because feedback from me during the process is more meaningful. Students can read what I am writing and also respond back to me from within their document. Another benefit to this is that they can actually read what I am writing because the feedback is typed. A lot of kids cannot read cursive these days, so when you start making comments on essays, some struggle with this so they will not read it. When I am typing my feedback, I find that I am actually writing more comments, but my grading time has been cut in half. The revision tool is great to go back and review the writing steps students use to really see their growth in writing skills. Peer editing and feedback has been more effective in my blended learning classroom. Students will then go in and use a printed rubric to edit a peer's essay. I now use Google Forms for any of my multiple choice assessments. It provides quick feedback for students so I can provide any reteaching or enrichment activities quickly. It has really been an efficient and more

effective way to assess students in my classroom. I really love the lock screen feature, so students can't leave the screen during a text. It has been a game changer.

Teacher 12 stated:

> Blended learning enables me to address student learning needs by using data driven assessments to identify their needs. I group them according to their AimsWeb scores. One thing I really like about pretty much every program I use with them is the automatic immediate feedback. Using Pear Deck enables me to ask questions and project student answers on the board for everyone to see and discuss. I hide student names from the students, but I can see who answered what. Then, I use it to target areas of need for specific students. We can analyze right and wrong answers and nobody is embarrassed. The automatic feedback is a very big plus of how to use the technological component in blended learning.

Administrator 1 stated:

> Teachers are providing students feedback in a more timely and meaningful way since they started incorporating blended learning. I have seen improvements in student learning based on this feedback. Teachers are setting up the online activities to provide immediate feedback to students and this is great! First, the teacher knows how well a student or the whole class understands or does not understand a concept. The teacher knows that they are going to have to reteach that skill or that students are ready to move on.

Administrator 2 stated:

> Another positive impact of blended learning has been a shift to online formative assessments. Teachers know right then, within seconds, if students got the skill or not.

> Students do not have to leave that class with a misconception on how to do something and practice it wrong or something. It's also been easier for teachers because they save time hand grading and are giving more meaningful feedback.

Administrator 3 stated:

> My blended learning teachers are using formative assessments more often with digital resources during stations to provide instant feedback. They can use all different types of formats to put a question, a problem, or something to think about within their instruction. Kids can input whatever they think, and it pops right up on the teacher's screen. Everybody sees what everybody's saying, but the kids don't know who said what. Only the teacher does. How could you get that in a meaningful and timely manner using pencil and paper? It is awesome, because I see students excited about learning and teachers excited about teaching.

Research Question 2

Each participant was asked questions related to how they perceive blended learning impacts their students. Table 3 identifies the common perceptions of teachers that emerged from interview data that pertained to how they perceived blended learning impacted their students. Educators had strong perceptions that implementing a blended learning methodology increased student engagement and motivation, supported the development of 21st century skills and competencies, and improved learning outcomes for all students regardless of their academic level.

Table 3.

Teacher Perceptions of the Impact of Blended Learning on Student Learning

	Grade Level Range				Years of Teaching Experience			
	E	M	HS	A	5-10	11-15	16-20	20+
Teacher Perceptions	(n=4)	(n=4)	(n=4)	(n=3)	(n=5)	(n=1)	(n=5)	(n=4)
Increased Student Engagement and Motivation	4	4	4	3	X	X	X	X
Development of 21st Century Skills and Competencies	1	3		1	X			
Improved Learning Outcomes for Students at All Academic Levels	2	2	1	2	X		X	X

Note. E=Elementary (1-5), M=Middle (6-8), HS=High School (9-12), A=School Administrator

Student Engagement and Motivation

When participants were asked how they perceived blended learning impacted student learning, they had strong perceptions that students were more engaged in learning. They shared that students were more motivated and took more initiative and responsibility for their learning. Teacher 1 stated:

> Prior to incorporating blended learning, I felt that my students were not motivated to learn. Now, they don't seem to have that glazed look anymore which is what made me change what I was doing. Just seeing that my students, who are not normally motivated to learn, are actually participating when I give them online stuff has been amazing. I don't think it is just the technology itself that motivated them, because they are actually looking at the feedback and trying to understand why they missed something. It was the interactive learning and engagement that appeared to have motivated them. I see them trying harder.

Teacher 2 stated:

> They are more engaged, and they want to be there. They want to participate. I see my students reaching higher and digging deeper.

Teacher 3 stated:

> Students seem to have a better attitude toward learning. Even the ones that have behavior issues seem more involved now. They love to pull out the Chromebooks. They love using the Chromebooks because they are so exposed to technology in their daily life. They like it better than just listening to us.

Teacher 4 stated:

> Students like to choose what they're doing, so they get to choose how they present what they are learning. So, I think anytime that we can give them freedom or a choice, they seem to do a lot better. It makes them take more ownership in what they're actually doing. Students are using technology to take more ownership on how they are presenting the material or showing me what they know.

Teacher 5 stated:

> I would say as far as students go that the thing that, to me, blended learning and technology has increased more is motivation. They are more motivated, they're more interested in it. They like the ability of being able to see things online and as far as having students be able to say that they see it now, has made such a difference. Things like GeoGebra, and Desmos, where they are physically and visually seeing something as opposed to just drawing it on a two dimensional board have improved understanding. They're seeing three dimensional figures so that they can determine the volume and the surface area. Being able to take an applet and have the student work through the applet

and try to develop that formula for themselves, because it's interesting. It's 100 times better than I could do it on the board. It's more exciting for them so they're more likely to get into it than if you just stand up and talk about it.

Teacher 6 stated:

Well the motivation has been interesting really because some of them get really excited about certain programs that we'll use. Honestly, I think the instant feedback for them has been the biggest eye opener, because they really have been able to figure out things better. I saw an increase in self-confidence among my students and a willingness to ask for help when they needed it.

Teacher 7 stated:

I feel more rewarded because the kids are happier. They are not bored in class. I remember when I would try to be really excited about something I was doing in class, but I was the only one excited. They would just be sitting there staring at me. It is just more rewarding because they are as excited as I am about what I am teaching.

Teacher 8 stated:

They love it, because anything with technology most students love. My students are more engaged in learning especially when creating videos is involved. There is such a phase now for young people to become YouTube stars, so kids are soaking this in. So, if you have them create a video like using Flipgrid, they'll talk to you all day. They'll explain everything they did because they like being on camera. Whereas, if you ask them to get in front of the class, some will, but a lot won't. It also allows for your student that's shy to be able to speak out, and a lot of times they're a lot more animated when they're

just over to the side creating their video. Talking one-on-one can sometimes be difficult for them.

Teacher 9 stated:

> Students are more excited and more passionate about learning. I think just amping up the engagement, which is always something I'm trying to do is difficult with middle schoolers. I had the misconception before starting blended learning that the kids knew technology really well, and that they knew what to do with this piece of equipment, probably more so than I did. That's true in a way, but it's also incredibly false in that they don't know how to use it to further their education. I think just showing them all the possibilities and how much fun learning can be, you're meeting them where they are because they do live in a technological world. I just started using Flashcard Factory last week and I mean they are literally like, I don't let one class come in until the other class is all gone and my sixth graders are screaming at my fifth graders to get out because they're so anxious to get in here and start Flashcard Factory. Whereas, if I just had a stack of flashcards sitting on their desk, they don't care about those, but they love Flashcard Factory even though it's the same concept.

Teacher 10 stated:

> They are more engaged and not just because of the technology, but because of the feedback that they get to give through the lesson. Not just because they are getting to use this Chromebook during class, and this is awesome. It is because they're getting it. Especially for the kids who are not willing to raise their hand. You've got kids that'll raise their hand to answer every single question because they like to hear their voice, or they want to be the funny guy that gives this answer that everyone's going to laugh at.

> Students that were previously less confident participating in class discussions are more willing to make an effort now, because there is anonymity in answering questions.

Teacher 11 stated:

> If I can keep using technology with them, I can keep them engaged. They will know that I am at least moving forward rather than having over 20 years of teaching and doing it without the technology. Students have to buy into you. I have seen amazing things happen in my classroom since I began blended learning.

Administrator 1 stated:

> They get excited about using some of the digital tools and some of the different things. The bended learning teachers are using technology as a tool to teach specific strategies, and the students are more excited about learning. It's way more exciting to work on vocabulary using Quizlet than it is to pull out the old Webster's dictionary and write definitions or sentences using the word. It's not just vocabulary, it's everything. Students are more eager to learn when teachers incorporate technology, regardless of the subject area. It's a lot more fun like when they're doing stuff that they're collaborating with their friends. Students are doing reports, slideshows, and putting in graphics when they are using technology. It definitely makes a difference in student motivation to learn.

Administrator 2 stated:

> Oh, student engagement!

Administrator 3 stated:

> Our students experienced an increase in student engagement. As far as kids being motivated to learn, I see that daily when I walk through their classrooms. These kids are using technology at home and everywhere. They have their phones with them all the

time, and we can't keep them motivated with a worksheet when they have that much stimulus elsewhere.

Student Learning Outcomes

Participants indicated that they experienced an increase in student learning outcomes for all students regardless of their academic levels.

Teacher 1 added:

> I saw the most impact from students I consider to be extremes. The lower kids who would not try before because they thought they were not going to be able to do it, are now seeing that with some effort they can. My higher kids are better at taking notes now unlike before when they acted like they knew it and didn't have to take notes. They realize they need to understand the entire process to take it to the next level.

Teacher 2 stated:

> She said that some of her students who would normally be content with just turning in an assignment on time are now putting more effort into their work. Now, they want to add more to it so that they can make it better.

Teacher 5 stated:

> I don't know if it was a particular class I had or if it was the actual flipped learning, but their test scores were 8% to 9% higher in going to a level four. I tend to look at how many of my students are at the level that they're supposed to be in terms of getting them to a level four and being on a level. When I literally last year, looked at Flipped learning and looked at the amount of increase in my scores from level three to level four, I did see a difference. I don't know if you could target that to just Flipped learning, or the technology altogether. I just feel overall when it comes to motivation and the kids' desire

to want to learn, that you see a higher level of that. I think that there's no way that they can do anything but increase their scores, because they're just more involved in it.

Teacher 7 stated:

> I saw improved learning outcomes with my students. They are able to get the skill better. They are able to learn it better because it is almost like hands-on learning. Like whenever you're learning how to sew if you're not actually doing it, you're not going to really learn how.

Teacher 8 stated:

> Incorporating blended learning has helped support my students that were really struggling in math. When we started doing math problems on Flipgrid, they had to communicate with their group and discuss how they got their answer, so this has helped students become better at understanding the concept. My students are not only starting to make more sense by hearing their peers explain math problems, but they are able to better understand and apply it for themselves.

Teacher 9 added:

> When I first transitioned to blended learning, I was nervous about keeping the kids on task with the technology. I was a little worried that their scores would not be as good. Even though they were now doing all these great things, I did not want technology to distract them. Last year, I had the highest growth and achievement scores I've ever had in my career, and I mean by a long shot, not even by just a little. The teacher I team teach with also experienced a huge improvement in learning outcomes. That class had the highest score she ever had in her career, so I definitely think it played a big part because we both saw that success when we started implementing blended learning.

> Adding the technology was honestly the only change I made in my instruction last year. I was pretty much doing everything else the same way as I had always done.

Teacher 10 stated:

> Students need typing skills in order to use some of the technology involved in meeting some academic standards. No matter what academic level students are at, it will take them an hour to type something because they hunt and peck. When they have a little bit of time leftover during class, I have them practice keyboarding. This has been beneficial in my classroom. It is a foundational skill for everything that I do and everything that they're going to need to do moving forward. So, I have seen some improvements in that area as well.

Teacher 11 stated:

> My students are more engaged in learning which led to improved learning outcomes. Anytime you can improve engagement, you're going to improve achievement. It improves my communication with my students because I am using tech.

Administrator 2 stated:

> We just got our EOC grades back in Algebra 2, and it is a difficult test. Their grades this time were just unreal. I could not believe the difference that we had, and it has to be incorporating blended learning, it has to be that. The teachers that are in Algebra 2 are using that approach, and I just feel like that has to be the reason for such a big improvement.

Administrator 3 stated:

> Based on our assessment data, student scores are showing good improvement in blended learning classrooms. Teachers are using MasteryConnect for benchmark assessments and

it also has common assessments. We have three benchmarks: fall, winter, spring. We have two common assessments between those benchmarks.

Student Collaboration

Participants indicated that students were more engaged in learning activities that involved collaborating, communicating and working together to demonstrate understanding.

Teacher 1 stated:

> I saw an improvement in collaboration among my students when I started incorporating blended learning. My kids are engaged in talking to each other when they are working in small groups or with a partner. They were not just talking to be socializing, they were talking about the work they were doing. Students were also stepping up to help other students. They also like to help each other and seem to do it in a nice way.

Teacher 3 stated:

> They love doing small groups and learning stations. They actually get disappointed on a day where we have to switch and do a whole group lesson or something different. They like working with a partner and having activities to choose on their own in the station.

Teacher 8 stated:

> A lot of students are really supporting each other in class more when they need help with something. Some of the kids are more techie than the others, so I feel like it gives them some confidence and another way to shine that they would not have in a traditional classroom.

Research Question 3

Each participant was asked questions related to how they perceive professional development in the area of blended learning impacted instructional practices. Table 4 below

identifies the common perceptions of teachers that emerged from interview data that pertained to how they perceived professional development focused on blended learning impacted instructional practices. Educators had strong perspectives regarding connecting and collaborating with peers, coaching and modeling of effective practices, participating in content and grade specific professional development opportunities, developing a mindset for pedagogical change, and changes in pedagogical practices.

Table 4.

Teacher Perceptions of PD on Blended Learning Instructional Practices

	Grade Level Range				Years of Teaching Experience			
	E	M	HS	A	5-10	11-15	16-20	20+
Teacher Perceptions	(n=4)	(n=4)	(n=4)	(n=3)	(n=5)	(n=1)	(n=5)	(n=4)
Connecting and Collaborating with Peers	3	4	4	2	X	X	X	X
Coaching and Modeling of Effective Practices	2	2	2	3	X		X	X
Content and Grade Specific Professional Development Opportunities	4	1	1		X		X	X
Developing a Mindset for Pedagogical Change	1	3	3	1	X	X		X
Change in Pedagogical Practices	4	4	4	3	X	X	X	X
Pedagogical Change Occurs Over Time	3	2	1	1	X		X	X
Challenges	2	3	3	2	X	X	X	X

Note. E=Elementary (1-5), M=Middle (6-8), HS=High School (9-12), A=School Administrator

Ongoing Opportunities for Connecting, Collaborating, and Learning

Most participants indicated that professional development opportunities which provided time and opportunity for teachers to connect, collaborate, and learn from each other had the most impact on educational beliefs and practices.

Teacher 1 stated:

> Connecting with other teachers within the blended learning professional development program had the most impact on my teaching. What helped me during the program was to go into other classrooms and watch teachers teach. I would love to be able to do more of that. There are a few teachers that were in my cohort that loved to go sit in their class and watch them teach. I learn best when I get ideas and watch other teachers. It is great to spring ideas off of each other. Most of the changes I make in my classroom come from direct conversations with other teachers and learning how they did something. I need to see what it looks like in someone else's classroom. Collaboration with other teachers changes how I teach.

Teacher 2 stated:

> Attending the TETC conference with my cohorts, along with other educators across the state, had a big impact on my teaching. I learned so much from other classroom teachers who were presenting at the conference. They were sharing tools and stuff that had worked for them and even some that didn't. Their ideas were ones I could use with my own students. I left each presentation excited about all of the information I was getting. I have stayed connected with many of those I met at the conference through social media. I follow and correspond with a lot of those that presented at the conference. I am always looking for new stuff. I'm always ready to learn. I am also following other educators that

I learned about at the conference such as the author of Ditch the Textbook website. I am also listening to many of them who have podcasts.

Teacher 3 stated:

My experiences and support with other teachers made the greatest impact on my teaching. I think having small groups within the cohort to talk and share ideas was helpful. Working with other teachers that are in similar grade levels and subject areas has supported me in using blended learning. The blended learning coach checked in with me on a regular basis to see if I needed any additional support. The encouragement I received from my other cohort members, my coaches, and my administrators, along with knowing you are learning together helped me become a better teacher. Teachers need time and someone to help them really learn how to implement blended learning. I learn best from going into other teacher's classrooms and seeing it in action. During the blended learning professional development program, I learned so much from just sitting in their classrooms and watching them teach.

Teacher 4 stated:

I think for me when we went to the TETC conference. It opened my eyes to all the stuff that different people were doing. I had no idea that much was out there and being in that environment where you are surrounded by all these people using the technology is exciting.

Teacher 5 stated:

My connection with the other teachers within the program was beneficial to my professional growth. They discussed their experiences and shared instructional practices with each other that worked in the classroom. We are working together as a team, and

we are not just one teacher out there on an island. We made it easier for each other by pulling our resources together, and it was actually fun. Having conversations with other teachers in the same grade level and subject area was most beneficial to changing the way she was teaching.

Teacher 6 stated:

> Attending a multi-year professional development program with the same people was beneficial to me. I think a larger professional development group causes teachers to get lost in the crowd. Being a part of a smaller group and getting to know and connect with other teachers is what made a big difference in her teaching. When you are sharing with other people one on one or in a small group, you are more engaged.

Teacher 7 stated:

> Being able to spend time during professional development with other teachers that were teaching the same general grade levels as me, made a big difference. I like when you are taught things that you can really use in the classroom. I like being able to get on the computer and actually go through myself and work on it so I can learn it. If you go to professional development and take notes on resources that they just tell you about, those notes just end up filed in my drawer. If I am actually working on it, seeing how it works, in kind of a hands-on way, then that works better for me. When you are engaged and you are having fun learning, you are going to be more willing to try it with students rather than put the notes in your file drawer.

Teacher 8 stated:

> I think the more we can work with other teachers, especially those in similar grade levels, the more we can learn new things that will work with our students. Using a tool like

> Flipgrid looks different in a second grade classroom compared to a twelfth grade classroom. Obviously, you would be using it in different ways, but I think the more we can have PD in the same grade levels or grade spans the better. Even like just primary teachers learning together would result in more teachers developing specific instructional practices for their classroom. I have made connections with teachers that I would have normally never met if I had not been part of this ongoing blended learning cohort group. I feel like I could call on any of these teachers at any time for additional support.

Teacher 8 added:

> Being able to go and visit someone else's classroom is helpful. I was able to see different instructional practices that I could bring back and incorporate with my students. Some people just learn the best from collaborating with others. I learn best from other teachers that are using what they are talking about in their classroom, so working with the other teachers in my PD group was the most helpful. Connecting with other educators at the state technology conference was one of the highlights of the professional development program. Listening to other educators from across the state on how they use technology in instruction helped make blended learning work in my classroom.

Teacher 9 stated:

> Being able to have time to collaborate and learn from other teachers has been huge as far as professional development goes. I think having colleagues, especially finding someone that's in the same subject or the same grade level as you and bouncing ideas off of each other is the most helpful. I feel like we receive information so much better from other teachers more so than someone who's not in the classroom every day. I learned best when a teacher with experience in successfully incorporating a specific digital tool to

enhance instruction shared their experiences. Working with the other teachers within the professional development program helped me as I started using blended learning in my classroom.

Teacher 9 added:

> I increased the use of social media for professional development when I began this program. I started following all these excellent teacher bloggers, and you can learn a lot from them. I bet I do at least one activity a week that I have gotten from Instagram, where I am following other teachers to what they're doing in their classroom. I feel like that's so much more 2020 and beyond than the traditional PD, because it is a way to reach so many more teachers.

Teacher 10 stated:

> The experience in the blended learning program was based on teachers helping teachers. Being able to go visit other teachers who are part of my group or previous groups from the program had a huge impact on me. When I became interested in using Flipgrid, I went to observe in a classroom of a teacher who had been successfully using it with students. It is teachers learning from teachers rather than us going to these summer professional developments and hearing from this person that goes all over the country. Many of these presentations had people who shared wonderful ideas, but teachers need more opportunity to connect with someone that they talk to everyday. Connecting and learning from your peers is invaluable. Participating in this professional development program enabled me to not only connect with people in my school but across the district. Now, I am networking with teachers that I have literally been in the same district with for years, but never had the time to connect with. I feel continuously supported in adapting

instructional practices as I implement blended learning in my classroom. It's always nice to have somebody in the trenches with you.

Teacher 10 added:

> Participating in the ongoing professional development program gave me options to use in ways that best support my students. Many of these options I learned from my cohorts, as well as other teachers across the state, when I attended the state technology conference. This had a positive impact on my instructional practices. TETC was great because there were so many things I could immediately come back and implement in my room. I learned about free tools such as Pear Deck, Quizlet, Quizizz, and Gimkit that I could come back and easily try with students.

Teacher 11 stated:

> I learned so much by collaborating with other teachers. It helped me keep current with what and how students need to be learning. I get the most out of being in a room with another teacher talking strategies out with me and just troubleshooting with me right there while incorporating it with my students.

Teacher 12 stated:

> Participating in professional development activities alongside other teachers in the same grade level was the best part for me. I like grade specific PD, because I can use it with my kids at my grade level. This program was a professional learning environment where teachers worked together to create and share resources.

Administrator 1 stated:

> I've noticed that the teachers are kind of taking a little bit more ownership in getting other teachers on board. The teachers in my school that have been taking part in the blended

learning professional development program have been coming back and sharing what they are learning and doing in their classrooms. I saw teachers being excited about teaching and trying to get other teachers excited by sharing new strategies. I mean all of a sudden, teachers are sending out emails that they're doing some professional development on their own after school. They have been meeting on their own after school to teach others who were interested in blended learning strategies. It has been a change of mindset, and teachers are basically helping other teachers outside of a formal professional development activity. Our blended learning teachers are making a positive influence on other teachers in our building. Several are beginning to use some of the same strategies that the blended learning teachers are sharing with them. I think as more people get on board with something, those outliers are all of the sudden feeling like outliers.

Administrator 2 stated:

> I have a couple of departments that have shared Google Drives and they are constantly working together on resources. They even share these resources with other teachers that teach the same thing across the county. These are things that could not easily be done without technology.

Administrator 3 stated:

> My blended learning teachers participate in helping other teachers within our school in learning how to effectively use technology.

Changes in Pedagogical Practice

Participants indicated they that they experienced a genuine change in their pedagogical beliefs and practices based on their involvements throughout the blended learning professional development program.

Teacher 1 stated:

> The blended learning program came along at just the right time for me, so I was glad that I was accepted to be a part of it. I basically saw complete disengagement with my students when it came to taking notes and learning. I was not motivated, and I was like, something's got to change because this isn't going to get any better. I knew that their attitudes were not going to change unless I made a change. I had to find a way to make them want to learn. I was frustrated, they were frustrated, and I knew I had to do something. It was time for a drastic change. I had to be to a point to understand that what I was doing was not the most effective way to reach my kids. I am their teacher, so it was me who needed to facilitate the change. It is my job to find a way to reach them. I came to the point, where I just felt that I could not keep doing what I was doing for another year. I was losing my fire as a teacher. I was losing my drive, my passion for what I'm doing. It was just a complete frustration for me of realizing I was done with this. I am finally seeing real change happen in my classroom with my students. I never thought I would be here, being able to say I have completely 180 changed my classroom practices. I did not think that on day one of my professional development program that I would be able to say that today, but I actually have stuck with it.

Teacher 1 added:

> I was able to successfully adapt instruction by doing what I could one step at a time. This change did not happen overnight. Although it has been a gradual and ongoing process, I feel like everything I have been doing is finally coming together. I feel like I'm more effective at using technology now. The professional development and support I received as part of the blended learning professional development program resulted in the biggest change in my teaching career. I like what I'm doing, and it's motivated me to be a better teacher. Even though time for everything is still a struggle, I do feel like time management has improved. It is an ongoing process of change. I am still learning how to manage my class time so I can get everything I am expected to teach covered while still trying to meet the individual needs of my students. Participating in ongoing professional development has really supported me in moving to blended learning. I am still adjusting instructional practices to support how my kids learn best. The blended learning program enabled me to do this in phases while receiving support from other teachers within the program. By the second year of the program, I was feeling more confident as a blended learning teacher. I don't really know how I would go back to how I was teaching before.

Teacher 2 stated:

> I think it's made me a stronger teacher. Doing the blended learning program has probably been one of the most rewarding things career wise that I've ever done. I grew more professionally through this program than I have in anything else I have done. It's made me think and dig deeper. My participation in the blended learning program has made a permanent change in my teaching philosophy. Modeling had the most impact on me

during this professional development program. I think the number one scary step is how to get started. I was at the point where I was frustrated with knowing that there were things that could be done in the classroom to make learning more interesting. Comments from my own children about their disinterest in school had an impact on my willingness to change how I was teaching. Having teachers be able to come into my classroom, sit down with me, and show me how to get this setup was the key.

Teacher 3 stated:

> Being part of an ongoing professional development program has helped me implement blended learning. At first, I wanted to try to do too much and then it got overwhelming, but with the support of the other teachers in the group, I was able to pick a couple of things to really become an expert in by going back and using it in my classroom. Learning things in my professional development program and then applying it in my classroom was great, because the others in the group were doing the same thing in their classrooms. We would come back and talk about our experiences in our groups during professional development. That first year of the program was important to me in changing how I manage and teach in my classroom. I think it took that whole first year, plus some of that second year to feel comfortable in myself. It is still kind of a work in progress. Things are always changing. I have a new group of students for which I have to get to know and discover their interests. I think just as long as we try to be positive and just know that we're continually learning and growing we are doing what is best for kids.

Teacher 4 stated:

> During the ongoing professional development program, I had the opportunity to use what I was learning in my classroom. The way I learned to incorporate technology was by playing with it and just being comfortable to make mistakes. I think I feel better about what I do in the classroom now. I feel like using the technology in blended learning makes me a better teacher. So now I am always out there looking for different things to do with the kids.

Teacher 5 stated:

> At first, I was overwhelmed, but I think that was me learning how to do the different technology skills. Once I got better, it took less time and I was quicker at putting out a document, or a HyperDoc or something. It does become easier, but it's still time consuming. Prior to going through the multi-year blended learning professional development program, I had gotten to the point where I was unhappy with teaching. I don't want to say that I wouldn't still be teaching, but I felt I was going through the motions. It made a huge difference as a teacher. The hardest part is just taking that first step and moving out of your comfort zone. I developed the skills and confidence I needed to change to a blended learning approach from the professional development program. I was able to focus on a few things at a time and learned to incorporate those digital tools into instruction at the same time. Working with teachers that are good in the same subject area who also know how to incorporate technology was key for me. It took a minimum of a year to get where I felt comfortable enough to use blended learning on a regular basis.

Teacher 5 added:

> In the beginning I tried too much too fast. I'm going to learn from my own mistakes, because I jumped in and tried everything all the time. Like when I look back at some of the HyperDocs that I made, I could not believe I was having students doing a Flipgrid, a Padlet, and a HyperDoc all in one day. You have to be willing to make mistakes and not expect it to work out perfectly every time. It has been a turning point in my teaching career. I already had the instructional strategies down pat. I knew different methods of teaching my standards, but what I was lacking in was the technology. I needed to learn more about all of the different things I could use in technology. So, for me, I couldn't blend them and put them together until first I learned the technology. Then, I could combine them with my instructional strategies. You can't blend something until you know what it is, you're blending. The blended learning professional development program enabled me to develop essential technology skills, so that I could then blend them together and figure out what works best for the kids.

Teacher 6 stated:

> Well, honestly for me I think it was nice going to conferences and things and seeing presentations with the different tools and everything. When teachers try new things in the classroom it is easy to feel overwhelmed. However, in the blended learning program, it's nice to be able to sit back and just pick one thing out of what you have been shown, try it out, and be supported in our group. I love being able to get together and share the different things that are going on in our classroom during the blended learning program with the other teachers. It gives you more tools to add to your repertoire so you can go back and try them in your classroom. It was important for me to develop technological

skills to improve my teaching. People are just going to have to learn how to use technology. Teachers must expose students to different technologies to broaden their ability to work with different interfaces and different programming.

Teacher 7 stated:

> It's very exciting because we would learn some different resources that we could use, and then I would come back and try it. I was already using effective instructional practices but realized I could better by using technology to improve learning. It was overwhelming at first just knowing where to start. Having deep discussions within the cohort group and realizing it's what we already do helped me visualize the big picture. You're just adding a piece of technology to your instruction to help engage the students. You pick your standard first, and then add the technology as a tool to enhance it.

Teacher 8 stated:

> Ongoing professional development provided the ability to gradually learn new things and apply them in blended learning. Starting with just a couple of digital tools I could learn and blend into what I was already doing made a huge difference. It can be overwhelming to learn all the technology that is out there to use in the classroom, especially with everything else you have to do as a teacher. It is important to receive training with digital tools in a timeframe where you began to really feel comfortable using them. Once I felt comfortable with using the tools, I was willing to branch out with other tools. I am basically blending online activities with traditional activities that I have always done with young learners. I had to start slow and it has not been easy, but it is really paying off for my kids. Start slowly and be willing to try something new for at least thirty days. I think two years is great for the blended learning program, but I wish it was longer.

Teacher 8 added:

> The professional development program gave me the opportunity to try new things and learn what works by trial and error. I knew that I needed more instruction to improve teaching with the technology, so that I was utilizing it correctly. It is still something that I am continuing to learn on an ongoing basis. The blended learning professional development program helped me focus on incorporating digital tools with good practices I was already implementing in my classroom. This resulted in a positive change in how I was teaching. I have been able to enhance learning in my classroom learning how to incorporate digital tools to make what I have been doing better. This has not been an easy road, and I have had to do a lot of learning and growing during the professional development program. I think the more you learn about it, the more it pays off down the road.

Teacher 9 stated:

> I've always felt like a lifelong learner, but this has just kind of pushed that belief in me even further to keep learning and keep growing and keep learning new things. When I was in college, I did not know how to use some of the technology, because I was never exposed to it during my K-12 education. As a teacher, it's really our responsibility to teach them how to use it, how to use it effectively, and how to use it appropriately. This was why I wanted to participate in the blended learning professional development program. I was always anti-tech because I had only taught math and I just didn't see how I could use it in math. I was like kids need to do math with pencil paper. I still feel strongly about that but there's so many areas you can pull in technology to enhance the instruction. The misconception comes when teachers think it has to be all tech or

nothing. I just added the technology to enhance what I was already doing in the classroom.

Teacher 9 added:

> I did not know much about blended learning before I started this professional learning program, so my perception has changed a lot over the last two years. I feel like I have been successful in using technology to enhance learning because of the professional development I received as part of this program. I do feel that I would not be where I'm at with technology if it weren't for this blended learning academy. A sit-and-get PD is not sufficient. The change came from learning new things, repeatedly trying new strategies in the classroom, and bouncing ideas off of others within my group. Risk taking is just part of learning. You have to understand that this might be a total flop and if it is, that is part of learning and is totally fine. I think that it is more work on the front end and I think that's probably why a lot of teachers are scared of it and are apprehensive of using it just because of the planning and the organization it takes to make things run smoothly. But, when you're actually in the trenches doing the work, it actually makes your life 10 times easier.

Teacher 9 added:

> If there's one thing we can agree on, you are here for the benefit of the kids and you want to do what's best for them. If you're student-centered, you're going to do what's best for your kids, and integrating technology is best for your kids. The professional development program helped me align instructional practices with what I knew students needed in the classroom. The change came from learning new things, repeatedly trying new strategies in the classroom, and bouncing ideas off of others within my group. You

begin to change how you teach things. PD feels more effective now, and I feel the support now. This professional development was targeted to my specific needs, so it was more meaningful. I love PD but no one has time to go to every workshop, and you don't need to hear everything that every presenter has to say because it doesn't all relate to you. Not only were my students more engaged, but I was more engaged as a teacher. After reflecting on how to best prepare students for the future, I knew if I was going to teach kids the skills to survive in this day and age, they're going to have to use technology. Technology was something that I was not good at, but I knew that I could use a whole lot more of it in my teaching. Most jobs in the workforce today require technology skills. McDonald's even does orders through a kiosk now.

Teacher 10 stated:

> The blended learning professional development was more meaningful to me, because it was not a one-time PD and the content along with the tools were accessible right then and there. This professional development program worked for me because I always like things that we do that I can immediately come back and use in my classroom. Learning about resources or textbooks that we may or may not have access to is a waste of time. For example, I had to attend a training on a specific program that the district had purchased, but we did not actually have access to get into it at the time of the training. Professional development experiences in this program have been less formal. Everybody did not have to do the exact same thing. The PD has been less formal, but more relevant. When teachers share their ideas and creations it saves time and builds a professional community of growth and support. This type of professional development support is important to get teachers to buy-in to any kind of change. Incorporating technology into

instruction is super important for these kids. Being involved in this blended learning academy, I've learned a lot of new resources for using technology the right way. I can't think of anything that I teach them that is going to be any more valuable along with preparing them for the world ahead of them.

Teacher 11 stated:

There are all kinds of PD that work, but the best PD is the one that is actually centered for where people are.

Teacher 12 stated:

This professional development program gave me an opportunity to learn the way I learn best. I learn best by doing. I do not learn well in professional learning activities where someone is basically telling you where and when to click. I have to be actually sitting down and exploring the tool myself. Being actively engaged in the content, going slow, and focusing on learning one thing at a time was the key to changing the way I was teaching. I could not do everything at once otherwise my kids will be overwhelmed, and I'll be overwhelmed. I started by using Flipgrid after learning about how it can be incorporated into instruction during a professional development activity. Once I felt comfortable with that, I moved on to Pear Deck. I didn't try to teach everything I was learning at once. I thought I was pretty tech savvy until I started the blended learning program and realized I didn't know anything. The program is designed to be for two years, but I would really like to keep going for longer. I really enjoy our blended learning meetings and different things like that.

Administrator 1 stated:

> I think what has had the most impact on our blended learning teachers is that it's not just a one and done workshop. They are going to each other's schools and are really digging in to see it in practice. It's all well and good for someone to stand in front of people and tell them how it should be done, but it is more relevant when teachers actually see it in practice. Successful professional development is definitely taking a turn for this type of approach. The blended learning professional development has given teachers the opportunity to participate in differentiated PD. They are learning and exploring at their own level and pace in order to adapt their teaching to what students need. We have all had different experiences and grew up in different times, different schools, and different generations. So, we cannot expect all teachers to be the same just like we can't expect our students to be the same. The teachers are going to their professional development meetings while discussing and developing best practices by talking things out with the others in the group. We've all been in those professional development settings where it's like one and done. This ongoing PD is allowing the teachers to learn, try things out, and come back together and discuss what worked and what didn't. This is how they are developing best practices to meet the needs of their students. These teachers have become more comfortable using technology now.

Administrator 2 stated:

> Well, my blended learning teachers are always coming back excited and offering to help our entire faculty by sharing what they are learning. Teachers are meeting together after school on their own and sitting in other teacher's classrooms on their planning time. My teachers like getting inservice from people that are actually doing it all the time in the

classroom. They like learning new things, going back to their classrooms and trying it out, and then coming back together again to see how they could make it better. Hands-on personalized learning has benefited my teachers tremendously.

Administrator 3 stated:

> My blended learning teachers love their professional development program because it is somewhat differentiated PD for them. They are starting at the level they are currently at and learning how to effectively integrate technology at their own pace with support along the way from the other teachers in their group. They are learning to incorporate technology without giving up traditional approaches that have always worked with their students. This is important because if we don't keep the human factor in teaching our students by becoming solely computer-based teachers, then we are doing a disservice to our students. Then we are losing that A-F-F-E-C-T, and that ethic level of care that kids need from us to grow emotionally, socially, and academically.

Challenges

Participants indicated that although they experienced successful changes in instructional practices to meet the needs of students, time and opportunity for effective professional development continue to be a challenge for teachers.

Teacher 1 stated:

> During the program I was trying out stuff that we were learning in the program in my classroom. I learned a lot during this time through trial and error. I had a vision of what blended learning should look like in my classroom, but I struggled with how to make it work. It was difficult and very overwhelming for me to find online programs, learn how to use them, get students using them all while trying to plan and teach my content every

week. But with blended learning, I needed a variety of digital resources to use with my students in order to blend the learning. It took a long time to put together digital resources that I felt comfortable using with my kids.

Teacher 1 added:

I didn't really realize how much of an undertaking planning would be. It takes a lot of time to plan meaningful ways to use the technology. I feel like I don't have any extra time to do more than I am doing now. We don't have a lot of time to grade students' work during the day, so I have to do that after school hours. I feel like I have more work on me, but I know that down the road I will have digital resources to choose from that I don't have to hunt down again. I am still working on getting where I feel comfortable drilling down more to differentiate and still accomplish what I need to get done. Right now, splitting them into two groups is all I feel comfortable with, but I am still working to figure out the best way to differentiate. I am trying to figure that out and still keep up with my pacing guide to make sure I cover what I am supposed to.

Teacher 2 stated:

Technology does make things easier, but at the same time, I found that I was spending more time on planning. I wanted to find more things that the students would be interested in. And it's a constant battle sometimes to find new gimmicks and new tricks to get their attention because after a while even the most entertaining thing becomes every day to them.

Teacher 6 stated:

> The biggest hurdle has probably been just students being prepared for class. Students are expected to come to class with their Chromebooks charged and ready to work. However, showing up with paper and pencil has been an issue for years.

Teacher 8 stated:

> I think it's like with any instructional approach, there's always time. Time is always going to be a factor along with the level of your students. You have some students that are just trying to use the technology, and some even need help just to log into their Chromebook. They still have to look at it written on a card for them. It takes time to just be aware of everything that's out there. Also, the cost can be an issue. There are a lot of great things that are free, which are wonderful, but there a lot of things that are not.

Teacher 9 stated:

> The thing I have struggled with the most would definitely be just the planning. Planning to use something that you haven't used before is very difficult to plan, which is one reason I've been grateful for the blended learning cohort. We can practice and play around with those things during our professional development time. Another challenge I experienced was trying to balance staying aligned with the district's pacing guide while allowing students to work at their own pace to meet individual student needs. This pushed me outside of my comfort zone, because I really like control and I really like a pacing guide. I do feel like you can give them freedom but also keep them on pace to a certain extent. This is still an ongoing challenge, but I utilize professional development and connecting with other educators to work on ways to improve.

Teacher 10 stated:

> I have struggled with how to balance self-pacing and fulfilling responsibilities. I am a realist in that I want them to reach mastery and do their best, but I also feel like it is my job to teach them about deadlines and fulfilling responsibilities. It is hard to balance both sometimes. Sometimes they're not going to make the best choices for themselves because they're kids. They are still kids, so they need some guidance in adhering to guidelines and responsibilities. I'm still figuring out how to determine what's going to help each kid, because I know that student choice is a lot of it.

Teacher 11 stated:

> My biggest challenge has been keeping students in class with a charged Chromebook.

Teacher 12 stated:

> Sometimes my lesson planning takes a little longer, but it makes my grading time shorter.

Administrator 1 stated:

> There's always a lot of frustrations with technology, but our blended learning teachers do not let that get in the way. The biggest challenge I saw among my blended learning teachers was added stressors of more expectations for testing. Some don't feel they have time to incorporate what they have learned in their blended learning program, because of preparing kids for testing. Time is hard to come by for teachers. There's a big difference between 90 and 45 minutes of planning time, and teachers in some grades only have like 30 minutes. Here at our school, teachers get 45 minutes of common planning time by grade level daily. But we all know how quickly 45 minutes can get away from us. I think time is the hottest commodity that we all want more of each day. I mean the reality of being an educator includes things like IEP meetings, 504 meetings, grade level

meetings and so on. There is something all the time, so time is hard to come by. With more digital tools and more expectations, it seems that teachers need more time to plan for that and more time to collaborate with their peers.

Administrator 3 stated:

Time is something you cannot get enough of to do what needs to be done. You can't train my whole school in a blended learning program at one time. Finding time for professional development is definitely a huge issue.

Chapter 5. Discussion, Conclusion, and Recommendations

The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. The central question for this study was: What impact does a blended learning methodology have on how teachers adapt instructional practices to address the individual learning needs of students? First, the researcher explored the perceptions of teachers on blended learning as an instructional methodology. Second the researcher explored how teachers perceived that implementing a blended learning methodology impacted student learning. Third, the researcher explored the professional learning experiences of participants to gain insight into what types of professional development best supported teachers is using a blended learning methodology.

Blended learning is an instructional methodology where teachers combine effective instructional practices that have been proven to work with students with the meaningful and purposeful use of technology to enhance learning (Horn & Staker, 2015; Kieschnick, 2017). The strategic use of technology to enhance instruction is the central focus of a blended learning methodology (Frey et al., 2013; Horn & Staker, 2015; Kieschnick, 2017; Powell et al., 2015). Teachers utilizing a blended learning approach start by focusing on the learning goal, selecting the appropriate instructional strategy to support goal obtainment, and then selecting a digital tool to enhance the learning for students (Horn & Staker, 2015; Kieschnick, 2017). The following section consists of a summary of findings and conclusions along with recommendations for practice and future research.

Summary of Findings

The analysis of data collected from interviews led to collective themes regarding teacher perceptions of blended learning as an instructional methodology for addressing the needs of

diverse learners. The following common themes emerged from the data: knowledge and understanding of effective instructional practices, enhancing instruction with the strategic use of technology, personalizing learning, technology-enabled assessments to support instruction, engaging and empowering learners, and relevant professional learning & support.

Knowledge and Understanding of Effective Instructional Practices

This theme refers to the knowledge, abilities, and understanding of participants, based on their experiences with implementing and sustaining a blended learning methodology. Participants shared a common understanding that blended learning was an instructional methodology that involved the combination of effective instructional practices with the strategic use of technology to improve teaching and learning. These educators felt strongly about having a solid understanding of effective instructional practices prior to incorporating technology. They shared the belief that technology was a tool to enhance research-based instructional strategies and to teach students in the way that they learned best. Participants shared that quality instructional strategies were essential for improving student learning outcomes, regardless of the incorporation of technology. They shared that they began to identify ways of using technology to improve effective practices they were already incorporating, which led to the next theme that emerged from this study. This theme emerged from the following codes: defining blended learning, classroom management, models of blended learning, and research-based instructional strategies.

Enhancing Instruction with the Strategic Use of Technology

This theme refers to teachers developing the knowledge and ability to purposefully integrate technology in a strategic way to meet specific learning goals. Most participants shared their experiences using an interactive video strategy to improve direct instruction. They created

videos of themselves teaching skills and concepts in small increments so students could watch at any time or place as many times as necessary to meet learning goals. Participants also shared that students were using technology to demonstrate and explain their understanding of specific concepts and skills. All participants shared they experienced success when they pulled in technology in meaningful and purposeful ways to support what they were already doing in their classroom. This theme emerged from the following codes: access to technology, 21st century skills, improved learning outcomes, strategic use of technology, students like using technology, and using a variety of digital resources.

Personalizing Learning to Accommodate All Learners

This theme refers to teachers developing the knowledge and ability to use technology to enhance the impact of effective instructional practices for addressing the learning needs of all students. Participants utilizing blended learning improved their ability to differentiate instruction for all students within their classroom. They shared that technology was an essential tool that gave them the opportunity to address multiple learning needs and modalities within their classroom without sacrificing valuable instruction time for other students. Participants strongly felt that this approach provided them with the time and opportunity to better meet the needs of all academic levels within their classroom. This theme emerged from the following codes: differentiating instruction, learning modalities, and student-centered instruction.

Ongoing Formative Assessments

This theme refers to utilizing technology to support data-driven learning experiences designed to meet student learning goals. Participants shared their experiences in utilizing technology to support ongoing formative assessments to target instruction for all students. A blended learning approach enabled them to simultaneously teach, access, and modify instruction

based on what their students needed. They all indicated that utilizing a blended learning approach enabled them to better meet the needs of individual students through technology-enabled learning experiences, online assessments, and specific immediate feedback for both teachers and students. This theme emerged from the following codes: data-driven instruction, timely and meaningful feedback, online assessments, and goal-oriented focus.

Engaging and Empowering Learners

This theme refers to how a blended learning approach enabled teachers to provide a learning environment where students were excited about learning. Participants noticed a significant change in student attitudes toward learning. Their students liked using technology to share their learning and took more responsibility for their own learning. Participants shared that student learning outcomes improved when they gave students more choices in the learning process. Participants implementing a blended learning approach experienced improved learning outcomes as students became more actively involved and engaged in learning. This theme emerged from the following codes: student engagement, student motivation, student anonymity, improved learning outcomes, and students like using technology.

Relevant Professional Development and Continuous Support

This theme refers to the professional learning experiences and support that participants believed were necessary to successfully implement and sustain a blended learning methodology. Participants in this study shared that being part of a two year professional development program focused on blended learning had a significant impact on their pedagogical beliefs and practices. They indicated that they wished the program would continue past the two years in an official capacity. Participants that had completed their district's two-year program were continuing to network and seek professional learning opportunities related to blended learning practices. All

15 participants experienced a change in pedagogical beliefs and practices over time. They attributed being part of small group of teachers working toward common goals, communicating, collaborating, and supporting each other in achieving professional growth was invaluable. Participants cited observing other teachers in their classrooms, receiving coaching from peers and blended learning coaches, and having administrator support for these activities made them feel continuously supported in their efforts to improve teaching and learning. Many shared that these experiences were even more impactful when they were centered around a specific content area or grade level because it was more relevant and meaningful to meet the needs of their students. This theme emerged from the following codes: adapting to change, change in pedagogical practices, ongoing professional development, teacher-facilitated professional development, personalized professional development,

Research Question 1

What are teacher perceptions of blended learning as an instructional methodology?

Teachers perceive that blended learning is an instructional methodology that involves the combination of effective instructional practices with the strategic use of technology to improve teaching and learning. All participants shared a common understanding of what a blended learning methodology is and how it looks in the classroom. Twelve participants shared experiences utilizing a form of the station rotation model of blended learning. Teachers perceived that incorporating blended learning enabled them to have the time and opportunity to differentiate instruction while ensuring that all students were actively involved in quality learning experiences at their own level.

Teachers perceived that enhancing instruction with technology was a critical component of blended learning. All 15 educators perceived that the use of technology should be strategic,

meaningful, and purposefully used to enhance instruction. Eleven of the 15 participants shared that they experienced improved learning outcomes for students. Educators also had strong perceptions that transitioning to a blended learning approach did not involve replacing good teaching with a device or digital program. Educators perceived that the big difference in instruction was not if they used technology, but how they used technology. After transitioning to blended learning, teachers shared that they continued to use the same instructional practices that they had successfully used in the past, but purposefully selected and used technology to enhance those strategies.

Teachers perceived that blended learning was an instructional methodology that increased their ability to differentiate instruction for all students. All 15 educators had strong perceptions that a blended learning environment was conducive to addressing the individual needs of their students. They all also identified online formative assessments as an essential component of blended learning. All 15 participants perceived that using technology-enabled assessments enabled them to receive and provide meaningful and timely feedback to students. Teachers perceived that the immediate feedback provided through these ongoing formative assessments were critical in providing the specific targeted instruction needed to improve learning outcomes for all students.

Teachers perceived that blended learning was an instructional methodology that involved utilizing technology to support data-driven learning experiences that were specifically designed to address student learning goals. Eleven of the 15 participants shared that they used data-driven instruction to address the individual needs of their students. Teachers shared that data-driven learning experiences were planned and implemented to address individual student needs.

Teachers perceived that ongoing technology-enabled assessments provided data necessary to scaffold learning based on student learning goals.

Teachers perceived that incorporating a blended learning methodology utilized a variety of resources to adapt instructional practices to how students learn best. Teachers perceived that blended learning enabled them to provide a more student-centered learning environment. Teachers shared that allowing students to utilize technology in creative ways to demonstrate their understanding had a significant impact instruction. Teachers perceived that blended learning enabled them to focus on using a variety of digital resources to accommodate the diverse learning styles of all students.

Research Question 2

How do teachers perceive that a blended learning methodology impacts student learning?

Teachers perceived that incorporating a blended learning methodology resulted in an increase in student engagement. All 15 participants shared experiences related to students being more motivated and engaged in the learning. Students were more excited about learning and actively involved in the learning process, because teachers were incorporating learning experiences based on how the student learns best. Teachers perceived that students who were more hesitant to answer questions and speak out during whole class instruction became more confident and willing to participate based on student anonymity.

Teachers perceived that incorporating a blended learning methodology resulted in students taking more responsibility for their learning. Thirteen out of 15 participants shared that they saw an increase in student responsibility. They contributed this to providing students with choices as part of the learning process enabled them to demonstrate their understanding in

multiple ways. Teachers shared that their students enjoyed using technology and selected it as a tool to demonstrate their learning on many occasions when given a choice.

Teachers perceived that incorporating a blended learning methodology resulted in an increase in the development of essential 21st Century skills and competencies. Ten out of the 15 participants indicated that blended learning enabled students to develop critical 21st century skills necessary to be successful in a world becoming more reliant on technology. Teachers perceived that although the use of technology came more naturally for students, they still needed to develop the skills to utilize it to its fullest potential.

Research Question 3

What are teacher perceptions of blended learning professional development on instructional practices?

Teachers perceived that participating in professional learning opportunities consisting of coaching and modeling of effective practice, collaborating and connecting with other educators, and personalized professional development increased their success in adapting to pedagogical change. Twelve of the 15 participants identified that coaching and modeling of effective practices resulted in a direct change in pedagogical practices. Teachers shared that job-embedded support and observing other teachers teach were two essential components of effective professional development. Teachers shared that having blended learning coaches come into their classrooms on a regular basis made them feel supported and impacted their ability to better meet the needs of their students. Teachers also shared experiences of going into other teacher's classrooms and watching them teach. Teachers perceived that this had the most impact on learning to use technology effectively with their own students.

All 15 participants identified that collaborating and connecting with other educators resulted in a direct change in pedagogical practices. Teachers shared that participating with the same group of people for the two year program had a significant impact on their instructional practices. They shared that ongoing professional development in a multi-year professional development program with the same cohort group of teachers gave them an opportunity to learn and explore new things while receiving essential peer support within the program. Teachers indicated that sharing best practices and resources with other teachers had a huge impact on their ability to implement and sustain a blended learning methodology. Teachers perceived that one of the biggest impacts on their professional growth was the opportunity to attend the Tennessee Educational Technology Conference (TETC) each year they were in the blended learning professional development program. Teachers shared that connecting with other classroom teachers across the state regarding best practices on incorporating technology made a tremendous impact on their professional growth. They began collaborating and connecting with other educators beyond their cohort group and began networking with other teachers through social media.

Thirteen of the 15 participants identified that participating in personalized professional development opportunities resulted in a direct change in pedagogical practices. Teachers perceived that content focused professional learning activities with other teachers who taught the same grade or subject area was more relevant and beneficial in supporting a change in practice. Teachers shared that they were able to work in small groups with teachers in similar grade levels and content areas, but it would have been more beneficial if the entire cohort had been developed around the same grade level or at least grade level ranges. Teachers also shared that being actively engaged in professional learning opportunities enabled them to develop essential skills

for managing and sustaining a blended learning environment. They shared that incorporating technology is important for 21st century learners and perceived that having this time and opportunity to learn and explore was essential is support their development of these skills.

All 15 participants perceived that they felt more support and were capable of embracing pedagogical change through their ongoing professional development program. Teachers perceived that they were able to change pedagogical practices because the professional development activities were relevant to what was occurring in their classrooms. They also shared that this change was not something that happened quickly. Teachers perceived that adequate time and follow-up support that was part of the professional development is essential to implementing and sustaining a blended learning instructional methodology.

Teachers shared that they grew from the time and follow-up support provided through their multi-year blended learning program. However, they indicated that additional time and support would have been even better. Many expressed feeling overwhelmed at keeping up with daily teaching expectations and responsibilities along with attending and trying to plan new innovative ideas in the classroom. Teachers perceived that time and opportunity to plan and curate resources is essential, but difficult to accommodate without sacrificing valuable class time or family time.

Recommendations for Practice

Findings from this research study could benefit K-12 educators in the development and implementation of professional development programs that are more effective in supporting teachers in adapting pedagogical practices to meet the needs of 21st century learners. The success of any instructional approach begins with the teacher, so it is critical to provide relevant and effective professional development options to meet the needs of teachers. As more K-12

educators utilize blended learning as in instructional methodology to meet the needs of 21st century learners, the following are recommendations for practice:

1. Professional development to support a blended learning methodology should include adequate time and opportunities for reflection and practice.
2. Establish ongoing professional development focused on blended learning pedagogy, especially in the area of managing and sustaining a student-centered learning environment.
3. Professional development should include opportunities for collaborating and planning, observing other teachers modeling effective practices in the classroom, and job-embedded coaching support.
4. Professional development to support blended learning should include opportunities to focus on specific grade levels or content areas.
5. Professional development should support adult learners by meeting them at their point of need and providing targeted support in specific areas.
6. Professional development should include opportunities for using online assessments to provide immediate feedback to students and provide data-driven targeted instruction to address the learning needs of all students.

Recommendations for Future Research

This research study was conducted prior to the drastic change of educational practices that were forced upon educators without warning as a result of the global COVID-19 pandemic. This has undoubtedly created the largest disruption of education on a global scale ever experienced. The urgency for educational change shifted from using technology to enhance learning in traditional brick and mortar classrooms to using technology as the only way to

communicate and educate students. K-12 educators struggled with this immediate transition from a face-to-face classroom setting to a virtual setting. Although it has forced the educational system to rapidly adopt new innovative ways of teaching, a clearly defined digital divide resurfaced. The sudden closure of schools and shift to at home learning left many students at a disadvantage if they did not have access to technology at home. A sense of uncertainty regarding what K-12 education will look like moving forward lingers in thoughts and conversations across the globe.

The response by educators across the country to adapt to the extreme and unprecedented circumstances resulted in educational change. The following recommendations for future research are based on the findings of this study while keeping the impact of the global pandemic in mind:

1. Conducting research on best practices for keeping the human factor as a critical component of virtual learning environments.
2. Conducting research on effective professional development practices to support teachers in transitioning between face-to-face, hybrid, and virtual learning environments as needed to avoid a disruption in student learning.
3. Conducting research to determine the impact of more non-traditional models of blended learning such as the A La Cart Model or Enriched Virtual Model.

Conclusion

As education across the nation has been significantly impacted by a global pandemic, K-12 educators are facing a critical need for an immediate and drastic change in educational practices. Now, technology is not only essential in enhancing instruction, but in many circumstances, it has become the only means of actually providing instruction. Adapting

instructional practices to fit the needs of learners has taken on a new meaning now. Blended learning is an instructional methodology that enables teachers to blend research-based effective instructional practices in a traditional face-to-face classroom with meaningful online experiences to enhance learning. The purpose of this qualitative study was to understand teacher perceptions of blended learning as an instructional methodology for addressing the needs of diverse learners. This research examined the perceptions of fifteen experienced educators. Twelve of the fifteen educators were teachers who had been participating in ongoing professional development focused on blended learning. Three of the educators were school administrators at schools from which participant in this study were teaching.

The results of this study identified six common themes that K-12 educators should consider when implementing a blended learning methodology to address the learning needs of 21st century learners. First, teachers must have a strong knowledge of effective instructional practices. Teachers should have a solid understanding of instructional practices that are research-based and proven to work with students over time. Second, teachers must have the skills, confidence and ability to enhance instruction with the strategic use of technology. Third, teachers must develop the skills, confidence, and ability to manage a blended learning environment, so they have the time and opportunity to personalize learning for students. Fourth, this should be accomplished through technology-enabled assessments that support instruction. Fifth, teachers will combine effective instructional practices with innovative technology to create a student-centered learning environment to support student engaged and empower learners. Sixth, teachers should be provided with ongoing professional development that is relevant and effective in supporting pedagogical beliefs and practices. The findings of this study revealed that by combining effective instructional practices with the strategic use of technology and providing

the essential professional development and support that teachers need, enabled them to better address the needs of all learners. Although these conclusions apply to a group of educators from the same school district, the results are supported by a wide body of research on blended learning.

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APPENDICES

Appendix A: Recruitment Email to Potential Participants

Dear Prospective Participants,

My name is Nikki Hensley and I am a student in the doctoral program for Educational Leadership and Policy Analysis at East Tennessee State University. I am conducting a study to understand teacher perceptions of using blended learning as an instructional methodology for addressing the needs of diverse learners. The nature of this research is to determine how teachers, who are using a blended learning model, perceive it impacts instructional practices and student learning.

In order to conduct my research, I am seeking teachers who have been participating in the district's blended learning professional development program to volunteer for this study. Your privacy is my first priority, so no personally identifying information will be included in this study. I am also seeking principals of teachers who are participating in this program to volunteer for this study. These interviews will be designed to seek the perceptions of teachers and administrators of the impact using a blended learning methodology has on teaching and learning.

If you choose to participate in this study, it will involve approximately 60 minutes of your time for a face-to-face interview with me. I can come to your school, before or after school hours at a time that is convenient for you. We can also meet in a different location that is convenient for you. The interview will be audio recorded to ensure accuracy in collecting the data. I will be the only person who has access to this recording, and no identifying information will be included in the interview. After I transcribe the interview, you will receive a written copy of the transcript to review for accuracy. If you deem it necessary, you may request a follow-up conversation to clarify any statements or sentiments within the transcript.

This research study has been reviewed and approved by the East Tennessee State University Institution Review Board. I hope that the findings from this study can provide insight on how to best support teachers in adapting instructional practices to support 21st century learning.
All information obtained through this study will remain confidential and this process is completely voluntary. If you have any questions regarding this process, please do not hesitate to contact me.

Respectfully,

Nikki Hensley

Appendix B: Interview Protocol

1. What are your perceptions of blended learning as an instructional methodology?

   Depending on Response

   a. How do you define blended learning?
   b. How has implementing a blended learning approach impacted the use of technology in your classroom?
   c. What model of blended learning are you using? Explain why you decided to implement this model.
   d. Describe a typical day or week in your classroom now that you have implemented a blended learning instructional approach.
   e. How do you perceive that using a blended learning instructional approach impacts your ability as a teacher to address the learning needs of all students in your classroom?
   f. What are some of the successes you have experienced implementing a blended learning approach? What strategies did you utilize to achieve this?
   g. What are some of the challenges or frustrations you experienced implementing a blended learning approach? How did you address these challenges?
   h. How has implementing blended learning impacted your pedagogical beliefs and practices?

2. How do you perceive that a blended learning methodology impacts student learning?

   Depending on Responses

   a. What impact has using a blended learning instructional approach had on student achievement in your classroom? Provide examples.

b. How do you use formative assessment and feedback to address the learning needs of all students in your classroom?
c. Describe your experience designing lessons to address the multiple learning needs of your students.
d. What are some of the learning opportunities you provide during instruction? How have they impacted student learning?
e. Describe student engagement, motivation, and attitudes towards learning since you have implemented blended learning? Provide examples from your experiences.
f. Do you believe that implementing a blended learning approach has been beneficial to student learning in your classroom? Provide examples.
g. How has student learning changed in your classroom since you have transitioned to a blended learning approach? Provide specific examples from your experience.

3. What are your perceptions of professional learning experiences related to using a blended learning methodology to personalize learning?

   Depending on Responses

   a. Why did you decide to participate in a multi-year blended learning professional development program?
   b. What professional learning opportunities did you experience participating in this blended learning professional development program?
   c. How did your professional learning experiences impact your teaching?

d. Prior to participating in blended learning professional learning activities, what was your perception of using technology with students in the grade level that you teach?

e. What support do you feel you need to develop the skills necessary to provide meaningful technology-enabled experiences for students?

f. Describe your feelings about time dedicated to professional learning experiences?

g. What professional learning experiences do you feel will assist you in sustaining instructional practices to personalize learning for your students?

h. What professional learning opportunity do you feel had the greatest impact on using a blended learning approach to adapt instructional practices to address the learning needs of all students in your classroom? Explain why and provide examples from your experience.

i. Describe your feelings about your job since you have participating in a multi-year blended learning professional development program? How does this compare to before beginning this program?

j. What knowledge, skills, and resources do you feel teachers need to transition to a blended learning instructional approach?

VITA

NIKKI HENSLEY

Education:	Ed.D. Educational Leadership, East Tennessee State University, Johnson City, Tennessee, 2020
	Ed.S. Curriculum & Instruction Lincoln Memorial University, Harrogate, Tennessee, 1996
	M.S. Education, University of Tennessee, Knoxville, Tennessee, 1994
	B.A. Education, University of Tennessee, Knoxville, Tennessee, 1992
Professional Experience:	Educational Technology, Sevier County School System, Sevierville, Tennessee, 2012-2020
	Teacher, Sevierville Primary School; Sevierville, Tennessee, 1994-2012