2022

Elementary Teacher Perceptions of Blended Learning in the Digital Classroom

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This is to certify that the doctoral study by

Sarah Cummings

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Walden University
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Abstract

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MA, Cedar Crest College, 2007

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Project Study Submitted in Partial Fulfillment

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December 2022

Abstract

Blended learning is an instructional model in which instruction is delivered using a combination of traditional teaching methods and online learning materials such as digital textbooks, virtual textbooks, and teacher-made videos. The problem was that elementary teachers in local schools were not implementing blended learning as intended by the school's improvement plan. The purpose of this study was to examine the perspectives of elementary teachers in Grades 3-5 who have experience using blended learning. The framework for the study is the complex adaptive blended learning system (CABLS) because it helps examine the blended learning elements and the changes that result from the interactions between those elements associated with the blended learning approach to teaching and learning. The research questions ask about the perspectives of teachers regarding the transition to blended learning and the interaction among the elements of blended learning. This qualitative study used interviews to investigate the perspectives of nine elementary teachers who use blended learning and open coding to analyze the results. The analysis yielded three themes: transition to blended learning, benefits of blended learning, and challenges of blended learning. The outcome of the study is a position paper recommending professional development and technology coaching to help teachers use blended learning. Blended learning can empower teachers to have increased positive relationships with students and enhance student learning, resulting in positive social change as students positively impact society by contributing to the community with their skills and knowledge.

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The theme of transitioning to blended learning was evident in the

data. All nine participants spoke about the process of transitioning

to blended learning. In the participants' reflection on transitioning

to blended learning, they indicated that the approach, motivation,

learning applications/platforms, training, and experience were key

to their success. Additionally, participants indicated that all six

elements of the CABLS framework were relevant to a successful

The benefits of blended learning were described by all participants and

was a clear theme of the data. The participants described

individualized instruction, skill development, and a positive

learning environment as key benefits of blended learning. Overall,

participants felt that using blended learning was a positive

experience. Throughout the interviews, participants described the

benefits of blended learning. It was clear that the participants

largely felt that blended learning was a positive experience. All

nine participants spoke about individualized instruction as a benefit

of blended learning. The participants spoke about blended learning

providing the opportunity for students to develop skills such as

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Section 1: The Problem

Some schools in the United States are transitioning to blended learning, which is the combining of traditional face-to-face teaching and learning with online technologies using mobile devices to increase student achievement, personalize student learning, and prepare students for future success by encouraging the development of critical thinking skills (Apex Learning, 2016). There has been an increase in the implementation of the blended learning approach in K-12 schools in the United States (D'Agostino & Kowalski, 2018).

Blended learning has the potential to increase problem-solving, critical thinking skills, and student achievement when instruction is individualized for each student's needs (Northey et al., 2018; Smith, 2016a). Extensive professional development, support, and planning are necessary for using a blended pedagogical approach that is personalized for each student. (Bendici, 2020; Greene & Hale, 2017; Osman, 2017; Ravenscroft & Luhanga, 2018). Given the current growth of blended learning to achieve learning goals, identifying the pedagogical transformations and instructional strategies used when combining online and face-to-face instruction will provide a framework for educators teaching in blended learning environments.

In this section, I will provide a description of the problem and a rationale for the problem. In the review of the literature, I will examine current research and definitions for blended learning in elementary education. Finally, I will present the guiding research questions to address the problem and implications of the study.

The Local Problem

The problem is that elementary teachers in local schools in a Northeastern U.S. State are not implementing blended learning as intended by the improvement plan for the school. Despite multiple forms of available technology, elementary teachers in an elementary school in Northeast U.S. are not using blended learning to increase student engagement and improve higher-order thinking skills, a stated priority on the district's improvement plan, available for public access on the district's website. This problem is meaningful at the local level. At the elementary school in Northeastern U.S. State, technology is rarely used as a tool to facilitate student learning and 21st-century skills even though each student is provided with a tablet or laptop computer with internet access (elementary principal, personal communication, July, 2016). According to the director of elementary curriculum for the district, this situation could be helped with a common curriculum guide for blended learning to be used at all elementary schools as well as collaborative planning time and professional development for teachers on effectively integrating technology (director of literacy, personal communication, 2016). The existing school improvement plan lists blended learning, an instructional model in which there is a combination of face-to-face and online learning, as one of the methods for increasing student engagement and improving higher-level thinking skills in an urban school district in the northeast part of the United States.

The gap in practice is a lack of technology integration in the elementary classroom, despite literature that states this integration is a benefit to students (Linder, 2017; Ravenscroft & Luhanga, 2018). This gap continues despite the availability of one

technology device, such as Chromebook or iPad, per student. Researchers suggested that blended learning is an effective method of increasing student engagement and therefore an effective way to integrate technology (Estapa et al., 2017; Osman, 2017) as part of the school improvement plan (Urban School District in Northeastern U.S., 2017). At the elementary level, technology integration refers to using the digital components included with textbooks, subscriptions to online learning programs, and digital tools for creating documents and presentations. Technology tools such as iPads, laptops, and accounts for software are provided but teachers often do not receive training or guidance on how to use them. Without professional training and clear expectations, technology is integrated inconsistently within schools throughout the district.

There is a need to research technology integration in the form of the blended learning instructional model in elementary classrooms to prepare students to be successful in the 21st-century (Macaruso et al., 2020; Smith, 2016a). The research was necessary because 21st-century skills such as creativity, collaboration, communication, and critical thinking, are fostered by effective technology integration practices, such as blended learning (Ravenscroft & Luhanga, 2018). The most common blended learning model used in elementary classrooms is the rotation model in which students rotate between online and face-to-face learning stations (Christensen & Knezek, 2018). Altemueller and Lindquist (2017) stated that this model allows the teacher to differentiate the material being delivered digitally, students to move at their own pace, collaboration among students and with the teacher to take place on a discussion board or shared document, and students to receive instant feedback on formative assessments.

Whether a classroom has one device per student, or the students use the devices on a rotational basis, classrooms using the blended learning model integrate technology in all aspects of the school day (Linder, 2017). The devices should be used as tools for accessing digital curriculum components, gathering information from educational websites and videos, communicating with peers and teachers, creating projects to be presented to share information, and learning about digital literacy and etiquette (Polly & Rock, 2016). According to Linder (2017), students often use devices throughout the day for remediation, enrichment, formative assessment, and learning core content. Polly and Rock (2016) found that using technology at the end of lessons was associated with higher-level thinking skills such as creativity and critical thinking.

It is an unfortunate situation that increased access to technology tools in classrooms has not produced clear, definitive, and equitable results across different school settings (Graves & Bowers, 2018). Teachers are still operating in a 20th-century model even though they have access to a variety of 21st-century technology tools (Graves & Bowers, 2018). Harris et al. (2016) found that technology is often considered a replacement for paper and pencil or textbooks rather than a key component of planning and teaching. The National Center for Educational Statistics (2017) found that less than half of the teachers surveyed reported frequent computer use during instructional time despite 97% of their classrooms having one or more student computers. According to Harris et al. (2016), it is important that educators integrate technology to prepare young people to function globally because technology plays an important role in the jobs that will be available when students join the workforce.

Rationale

It is important for teachers to be able to successfully implement technology as a learning tool and to teach students to be consumers of digital content (U.S. Department of Education, 2017). One mission of the U.S. Department of Education is to produce learners who can compete globally upon entering the workforce, which includes using technology to communicate, collaborate, and gather information (U.S. Department of Education, 2017). The International Society for Technology in Education (ISTE) develops teaching and learning standards for using technology (International Society for Technology in Education, 2017). Globally, countries including Norway, Costa Rica, Turkey, Japan, and Australia have adopted or are developing ISTE Standards for technology frameworks (International Society for Technology in Education, 2017). Nationally, the Common Core State Standards (CCSS) link technology with effective teaching, calling for proficiency in basic technology skills, rigorous learning and creativity, and more emphasis on critical thinking skills, communication, and collaboration. The CCSS also require teachers to use engaging instructional strategies and technology as tools to help students develop critical skills and demonstrate their learning (Gomez-Lanier, 2018).

At the local level, there is evidence of the problem that elementary teachers are not using blended learning to increase student engagement and improve higher-order thinking skills (Urban School District in Northeastern U.S., 2017). The Strategic Framework for School Improvement stated that education will be individualized to meet student needs using several instructional strategies, including implementing technology

(Urban School District in Northeastern U.S., 2017). According to the Future Ready PA Index report for the school, there is a decrease in performance from the previous year in math and while students are meeting interim goals for improvement in Language Arts, they are not meeting state goals for improvement (Pennsylvania Department of Education, 2019). Teachers have access to tools for integrating technology but are not given the professional development or direction on how to implement them to meet student needs, this is largely at the teacher's discretion (elementary principal, personal communication, July, 2016). Technology tools such as iPads and laptops are bought by the building principal for individual classrooms or teachers, in varying quantities ranging from one per class, to class sets (Urban School District in Northeastern U.S., 2017). In a district with 21 schools, the type and quantity of technology devices available to teachers and students is greatly at the discretion of each principal and varies by classroom and building. Professional development is most often decided by central administrators and rarely by building administrators (elementary principal, personal communication, July, 2016). As a result, training is often based on whole district needs rather than individual school or teacher needs so specific technology training needs are often unmet (director of technology, personal communication, August, 2017).

There is a gap in the available research conducted on blended learning. A lack of research exists on the implementation of blended learning at the elementary level (Greene & Hale, 2017). In most cases, research regarding blended learning focuses on secondary or higher education. Of the first 100 articles in a database search on blended learning, 12 articles focused on K-12 institutions and only four were studies done at the elementary

level. Research specific to Grades K-5 is needed to provide guidance on the implementation of blended learning. Greene and Hale (2017) explored the current state of blended learning in K-12 schools in the U.S. and found that there is a significant lack of data on using blended learning at the elementary level. Decisions regarding the implementation of blended learning are not being informed by data because the data does not exist (Greene & Hale, 2017).

Advancements in technology have contributed to changes in the skills and abilities considered desirable by employers, such as creativity, problem-solving, critical thinking, analysis, and collaborating (O'Neal et al., 2017). Unfortunately, there is a disconnect between the traditional education model and the technology-driven society awaiting students' post-graduation that begins in elementary schools (Gomez-Lanier, 2018; Polly & Rock, 2016). According to Polly and Rock (2016), school districts often provide students with technological devices to help students develop into creative problem solvers. Many times, new products and programs are purchased in the hopes that students will practice these critical thinking skills (Polly & Rock, 2016). There is often a lack of teacher training for using these expensive resources and training is necessary for technology devices to be used to affect academic achievement and increase motivation (Harris et al., 2016).

The researchers suggested that the blended learning model offers a modern technological solution for the academic weaknesses of students and helps them develop the 21st-century skills that they will need to be successful in the workforce (Elian & Hamaidi, 2018; Unal & Unal, 2017). Macaruso et al. (2019) conducted a 3-year

longitudinal study on the effectiveness of a blended learning reading program used with students from low social economic backgrounds from grades kindergarten to second and found that the students made significant gains in reading. Over 90% of the students who started kindergarten below level finished second grade on or above level (Macaruso et al., 2019). In addition to allowing the teacher to modify the curriculum for each student's needs (Elian & Hamaidi, 2018) using technology to apply the blended model provides an active learning environment for students that allows students to constantly link what they are learning to their life experiences (Elian & Hamaidi, 2018; Kelly & Denson, 2017). The elementary level is the ideal place for blended learning because of the rotational models being used for guided reading and guided math during which elementary students are trained to work in 20-minute learning stations (Christensen & Knezek, 2018). Using the digital components of textbooks as well as teacher-created videos, blended learning can easily be implemented during learning stations in elementary classrooms (Evans, 2018). For teachers to successfully implement the blended learning model, they must receive training for using the technological devices, transforming pedagogy and content, facilitating students who are working online, and given time to plan lessons that will be unfamiliar at first (Kelly & Denson, 2017). The purpose of this project study is to explore the beliefs and practices of elementary teachers in Grades 3-5 with experience using blended learning and the interactions among the elements of blended learning.

Definition of Terms

21st-century skills: 21st-century skills are defined as skills needed to be successful in careers during the Information Age and include enhanced collaboration,

communication, creativity, digital literacy, and critical thinking (Partnership for 21st-Century Skills, 2019; Varier et al., 2017).

Blended learning: A definition by the Clayton Christenson Institute for Disruptive Innovation (2022) states that blended learning is a formal education program in which the student learns partially online and partially in a traditional school building, has some choice regarding pace and content, and the traditional teaching and online learning are connected to provide a cohesive learning experience.

One-to-one computing: Varier et al. (2017) defined one-to-one computing as a learning environment in which students and teachers have access to a personal computing device to use as a tool for academic learning.

Rotational model: Schechter et al. (2017) defined the rotational model as a form of blended learning in which students transition between learning stations including at least one in which they learn online. The rotational model is the form of blended learning most likely to be used at the elementary level (Schechter et al., 2017).

Student engagement: Goral (2019) defined student engagement as involvement, enthusiasm, and investment in the work of learning. Student engagement is the student's cognitive and emotional energy involved in completing a learning task (Halverson & Graham, 2019). Halverson and Graham (2019) proposed a set of factors that indicate the level and quality of student engagement in blended learning contexts including attention, effort, time on task, effort, persistence with difficult tasks, cognitive and metacognitive strategy use, deep levels of absorption, student interest, and positive emotions about learning.

Significance of the Study

By examining the practices of teachers with experience implementing blended learning, the study will contribute to filling the gap in practice. This investigation of teacher beliefs and practices on successfully implementing blended learning may be used to develop a plan to train teachers locally to use the model in their classrooms, which would benefit teachers and all students by providing teachers with instructional strategies to incorporate blended learning lessons. Students would benefit from the increase in student engagement and the additional opportunities to develop higher-order thinking skills. When technology is used in the structure or delivery of the lesson plan and as part of the assessment process, students are more engaged and students are able to use higher-order thinking skills to creatively show what they have learned (Polly & Rock, 2016). Halverson and Graham (2019) found that educators believe blended learning will more fully engage students in their learning.

Findings from this study may also be used to support professional development at the local level. By implementing instructional practices using technology, student achievement may improve (Osman, 2017), perhaps leading to positive social change. Student achievement can be improved through student engagement, personalized learning, collaboration in a class community, cooperative learning, flexible learning, and real-world problem-solving skills when technology is integrated effectively (Osman, 2017). Society benefits when students become effective problem solvers, critical thinkers, communicators, and creators; all of which are skills that may improve when students learn collaboratively with the blended learning model.

The findings from the study may be important to local teachers because they might provide information to help teachers use the technology tools at their disposal in a manner that will increase student achievement and provide students with 21st century skills. It is important to administrators because they want teachers to learn how to use technology to increase student achievement (elementary principal, personal communication, July, 2016). This study is important to the school board because the board members approve technology purchases on behalf of the taxpayers, and they want the devices to be used to improve student achievement (Urban School District in Northeastern U.S., 2017). It may be important to parents because they most likely want their children to receive a well-rounded education and be prepared for the job skills future employers will desire. The study is important to students because they are digital natives and analog skills will not adequately prepare them for the future (O'Neal et al., 2017).

This investigation may provide a deeper understanding of how teachers at schools are using blended learning by examining the beliefs and practices of elementary teachers with interviews about their experiences. The study may provide important guidance for teachers at the local level who do not use blended learning to use the available technology more effectively, to increase student engagement, and improve higher-order thinking skills. There is no standardized instructional practice for integrating technological tools in place at the local setting (Urban School District in Northeastern U.S., 2017).

Research Questions

The research questions are designed to identify ways in which blended learning is successfully implemented by some schools, to provide guidance to the local setting. By studying teacher perceptions regarding the implementation of blended learning and its effect on instruction and the learning of all students, including English language learners (ELLs) and special education students in the classroom, it will be possible to identify the best course of action to address the local problem. In alignment with the research problem and purpose of the study, and the conceptual framework, I developed the following research questions:

RQ1 What are third through fifth-grade elementary teacher experiences implementing and using the blended learning teaching approach?

RQ2 What are third through fifth-grade elementary teacher beliefs and practices regarding the interaction of the elements of blended learning (the teacher, the learner, the content, the technology, learning support, and the institution)?

Review of the Literature

This review is presented in two parts. First, the conceptual framework is outlined. Then the review of current literature is provided. The primary sections in this review are blended learning models, benefits of blended learning, transitioning from traditional to blended learning, challenges of blended learning instruction, and interaction among blended learning models. The databases I used to search for literature include Education Research Complete, ProQuest, and ERIC. I searched for articles on the implementation of blended learning programs in K-12 classrooms with a focus on the elementary level.

Elementary teachers work with a wide range of students including gifted students, special

education students, and English language learners, so it is important to include all

populations in the research. I used the following keywords to search the databases:

blended learning, rotational model, flipped instruction, online learning, personalized

learning, elementary, elementary student populations*,* and *21ˢᵗ-century learning.*

Conceptual Framework

The framework for this study is complex adaptive blended learning system

(CABLS). Research supporting the proposal of new theories or the development of

existing theories on blended learning is lacking. A conceptual framework provides a

structure to support and inform research (Merriam, 2016). Developing a conceptual

framework for blended learning research will help to inform educational practitioner

implementation of blended learning. Research on blended learning, grounded in theory, is

needed to guide practice (Gulosino & Miron, 2017).

The CABLS framework is appropriate for this study because the transition from

traditional teaching to a blended learning environment requires teachers to change their

perceptions and behaviors. The process of learning has been labeled a complex and

dynamic system (Racone & Quale, 2017). The combination of digital learning and

traditional teaching has made learning a more complex process than ever before, due to

the introduction of new teaching and learning elements and the changes that result from

the interactions between these new elements (Wang et al., 2015). To define the elements

and interactions of blended learning, Wang et al. (2015) proposed a multidimensional

framework describing six elements of blended learning named the complex adaptive blended learning system (CABLS).

The six elements included in the CABLS framework are learner, teacher, content, technology, learning support, and institution. The learner undergoes a transformation from passive to active learning as they interact with the other systems (Wang et al., 2015). As the teacher adapts to the blended learning environment, she evolves from lecturer to facilitator (Wang et al., 2015). Blended learning provides content that is rich and engaging as it is constantly interacting with the learner, the teacher, and the technology (Wang et al., 2015). Empirical studies have shown that advances in technology provide a rejuvenating push to blended learning while meeting the needs of the teacher and the learner (Wang et al., 2015). Learning support mechanisms develop to meet the needs of the learner, either in the form of academic support or technological support (Wang et al., 2015). The institution is included because it exemplifies the need for support across the institution, not at the course level. Such support can include strategies, plans, and policies (Wang et al., 2015). Although the research will focus on the learner, the teacher, the content, and the technology because they are more closely related to blended learning, data regarding the other two elements will also be collected and considered.

The complex system of blended learning combines the elements and interactions among them. Wang et al. (2015) used the proposed CABLS framework to make several statements to help establish a deeper understanding of blended learning. The framework states that blended learning is complex, adaptive, dynamic, self-organizing, and co-

evolving (Wang et al.). The CABLS framework provides a holistic and systematic view of blended learning while defining the ways in which the elements interact with each other. The framework provides a foundation for the research questions, data collection, and data analysis to be conducted in this study.

Interaction Among Blended Learning Elements

According to the CABLS (Wang et al., 2015) used as the conceptual framework for this study, there are six elements of blended learning: the teacher, the learner, the content, the technology, the learning support, and the institution. The research indicates several interactions among the elements in the blended learning model of instruction. The interaction between the teacher and learner shifts with blended learning. Rather than the teacher providing learning materials for students, students use technology to search for reliable sources, critically read the material, and evaluate the content to decide if it is relevant or important. As students are empowered to find information from credible sources online, the role of the teacher shifts from the provider of information to a facilitator of learning (Linder, 2017). Less class time is used for teachers to lecture and manage behavior, which allows teachers to repeat lessons for students struggling with the material so other students can move on (Kelly & Denson, 2017). There is also an increased interaction between the teacher element and learner element. In the blended learning rotation model, learners spend time in groups allowing time for them to collaborate, provide peer-support when one or more students are struggling, and build friendships (McCollum et al., 2017). Students in blended learning classrooms have more opportunities to work with and talk to other students, rather than sitting as passive

listeners (Kelly & Denson, 2017). Whether they are new to or experienced with blended learning, teachers interact with each other to get ideas, reflect, and codesign lessons (Kelly & Denson, 2017).

There are many examples of interactions between the other elements of blended learning. One type of blended learning content is learning videos. Learners can watch, pause, take notes, and review the videos at their own pace. Video lessons are available any time the learner needs to view them, such as before a test or when absent from class (Kelly & Denson, 2017). Teachers interact with the content by creating and assigning videos and other content, managing content on class websites, and sharing content with each other (Jacobs, 2018). The institution and content interact when school districts choose curriculum materials, determine rotation schedules, and teachers' planning time for creating lessons (Jacobs, 2018). In determining the type of lessons to use and the format with which the learners will view them, the teacher and the intuition must consider the technology and the learning support (Jacobs, 2018). When teachers, learners, and institutions shift to blended learning, the physical space is often altered to accommodate the new learning styles being used. Wheeler Kearns Architects designed two schools for blended learning that included more space for collaboration, a more open concept, and areas for pop-up lessons as the need arose (Kearns, 2017). Another type of blended learning content is the use of children's stories using mobile devices. Cavus and Ibrahim (2017) found that ESL students were more likely to show improvement when the curriculum included this type of content.

Review of the Broader Problem

Blended learning is an instructional practice that integrates technology tools effectively (Altemueller & Lindquist, 2017). Over the past 20 years, blended learning, also known as hybrid learning, has gained popularity as a method of personalizing instruction in higher learning and K-12 learning institutions. An instructional strategy that combines effective methods of traditional face-to-face instruction such as class discussions and cooperative groups with effective online instruction strategies such as collaboration and project-based learning (Altemueller & Lindquist, 2017). It is a strategy that engages students, promotes a learner-centered classroom, and can transform passive, direct instruction into a stimulating and dynamic learning process (Altemueller & Lindquist, 2017).

The origins of blended learning can be traced back 20 years to the first generation of web-based learning in 1998 (Pappas, 2015). To define the different forms of online instruction for consistency in survey reporting, Allen and Seaman (2003) developed standard definitions for online learning in colleges and universities. The term blended learning was first developed by Allen and Seaman to describe a course providing 30-79% of content online that includes face-to-face interaction. Blended learning was further defined for K-12 learning environments as a system in which some student learning occurs away from home in a brick-and-mortar location, some learning occurs online with the student having some control over time, place, path, and pace, and there is an integration between the two learning paths (Christensen & Knezek, 2018).

Blended Learning Models

Blended learning can be implemented in different ways depending on several factors including the technology available, the ability level of the students, physical features of the learning environment, instructional preferences, and scheduling constraints. The Christensen Institute for Disruptive Innovation (Christensen & Knezek, 2018; Clayton Christenson Institute for Disruptive Innovation, 2022) identified six models of blended learning.

The first is the face-to-face. In this model, the online learning component supplements, remediates, or enhances student learning, happens within the school, and is assigned by the teacher (Christensen & Knezek, 2018; Clayton Christenson Institute for Disruptive Innovation, 2022). The second model is the rotation model. Here, students rotate between traditional instruction and online learning. The rotation model is used most in elementary schools using blended learning because elementary teachers traditionally use centers or learning stations. Adding a station with online learning is a natural fit for blended learning and works with both 1:1 devices or limited devices as not all students would be online at the same time (Horn & Fisher, 2017).

Horn and Fisher (2017) made several revisions to the models including the creation of four subdivisions for the rotation model. First, in the station-rotation model, stations are based on the learning modalities, occur within the classroom on a fixed schedule, and online learning is one of the stations. In the lab-rotation model, online learning occurs in a lab on a fixed rotation schedule. With the flipped-classroom model, online learning occurs remotely outside of the school day. The individual-rotation model

is similar to station-rotation but customized for the individual student (D'Addato &

Miller, 2016).

Other blended learning models identified by Christensen and Knezek (2018)

include the flex model, online lab model, self-blend model, and the online model. With

the flex model, most of the instruction is provided online and the teacher is available for

remediation in small groups or individualized tutoring. In an online lab model, all content

is delivered online within the school setting. With the self-blend model, the students

receive a blend of mostly traditional learning with student-selected online courses

supplementing. In the online model, all content is delivered online with students working

remotely.

In addition to the six models identified by Christensen and Knezek (2018),

Lahullier (2018) stated that blended learning can be implemented using a synchronous or

asynchronous model. In the synchronous model, students would work on the same

assignments at the same time. The asynchronous model is more popular because it allows

students to move at their own pace (Lahullier, 2018). Definitions of blended learning

models will continue to develop as teachers make changes in implementation to meet the

needs of their students.

Benefits of Blended Learning in Elementary Populations

Blended learning can provide a shift from traditional instructional methods such

as lectures and copying notes to an instructional method in which students learn by

asking questions, investigating, collaborating, and experimenting (Evans, 2018). This

variation in the instructional method is often necessary to keep students engaged in

learning by more actively participating. Lahullier (2018) found that blended learning promotes active and independent learning. In a study comparing student achievement, academic engagement, and satisfaction levels of flipped, blended, and face-to-face learning environments, Talan and Gulsecen (2019) found that the flipped and blended environments were shown to have significantly higher levels of achievement and engagement levels than the face-to-face group. Kostaris et al. (2017) conducted a study investigating the influence of technology and computer-supported collaboration on learning behaviors and student engagement and found that student participation in digital learning activities has a positive influence on academic achievement and students' levels of engagement. In rural districts where high populations of disadvantaged students, lack of technology, high teacher turnover, and a lack of resources can challenge student achievement, personalized learning via blended learning can help bridge the gap caused by these obstacles (Kennedy, 2019).

Meeting the Needs of English Language Learners (ELLs)

Blended learning can also be beneficial for all students, including English language learners (ELLs), special education students, and gifted students. Cavus and Ibrahim (2017) published the results of an experimental study indicating that the English learning skills of young students improved significantly after using a mobile learning application in a blended learning setting. The application focused on vocabulary acquisition, listening, comprehension, and used a speech recognition engine. Blended lessons allow students self-pace their learning, re-watch previous lessons for review, and test out of lessons to move quicker (Altemueller & Lindquist, 2017). Tucker (2016)

found that blended learning strategies offer effective ways for teachers to meet the individual needs of ELLs by shifting to online instruction using a station rotation model allowing students to move at their own pace. Technology offers new approaches and tools to clarify math concepts for ELLs. Digital math literacy programs and gamified instruction delivered using a blended learning model can increase test scores as well as enthusiasm for learning for students who are learning English (Technology + Math = SUCCESS, 2017). Kazakoff et al. (2018) conducted a large-scale, quasi-experimental study to evaluate the effectiveness of a blended learning approach to reading instruction for ELLs in comparison to non-ELLs and found that a blended learning approach contributed to significant gains in reading in a large sample of ELLs.

Blended Learning and Special Education Students

Using semi-structured interviews of elementary special education teachers with experience teaching autistic students, the study's results indicated an overall positive attitude towards technology with benefits including students being focused on tasks, completing assignments, and a positive impact on student learning (Bell et al., 2016). There are indications that the experience with blended learning for special education students is positive due to the higher expectations, focus on skill development, and the ability of blended learning programs to meet the needs of the common core for students with intellectual disabilities (Bell et al., 2016). For special education students with Individualized Education Plans (IEPs), there is concern about meeting the accommodations required by their IEPS with online learning. The accommodations and

modifications required for traditional school programs are often not needed in the

blended learning classroom (Bell et al., 2016).

Blended Learning and Gifted Students

Potts (2019) interviewed gifted students who received part of their instruction via

online platforms. In terms of curriculum and pedagogy, gifted students reported little

difference between traditional learning and virtual learning suggesting that the type of

learning environment is not as important to gifted learners as the quality of the content

(Potts, 2019). Potts (2019) suggested that blended learning provides the opportunity to

meet the needs of gifted students by providing individualized instruction with online

courses.

Development of 21st-Century Skills

A paradigm shift in the way we teach students is necessary in order to prepare

them to be successful in 21st -century jobs (Osman, 2017). One possible reason for this is

that students today think and process information differently than generations before

them, partially due to the technology they have always had access to (Estapa et al., 2017;

Osman, 2017). According to Osman (2017), the Industrial Age education model used in

many school systems is obsolete and it negatively impacts generations of learners born in

the digital age who process information differently than past generations of learners.

School systems must be redesigned to meet the needs of the students operating in the

global, info-centric, technology-infused reality of the 21st-century (Evans, 2018). Osman

(2017) also stated that blended learning is a way to meet the needs of digital learners who

are part of a school system that was designed to meet the needs of an industrial economy

in the last century. Fabian et al. (2018) found that blended learning has the potential to bridge classroom learning to real-world learning. Real-world learning is important for students of the information age who may be more motivated to learn when the connection to the real-world exists (Varier et al., 2017). Kuimova et al. (2018) contended that blended learning can help students develop responsibility, self-motivation, time management skills, and skills needed for digital literacy.

 Blended learning can improve student learning through the development of 21st - century skills. The development of these skills is important for all students (Evans, 2018). According to Childress (2016) students from financially disadvantaged families need to develop 21st-century skills more than any other subgroup to be successful after graduation. Childress (2016) aligned the evolution of technology with the industrial revolution, major economic shifts, and changes to the standard of living. Childress (2016) also referenced the labor statistics website for the fasting growing and new jobs, proposing that students move beyond simple computer applications to using technology for problem-solving, diverse group projects, and real-life applications. Literature is cited to support the findings, but a research study is not included. According to Linder (2017) and Evans (2018), blended learning is successful at helping students develop 21st-century skills partially due to the shift from a passive-learning, teacher-centered model to a model focused on active-learning that is student-centered. Digital literacy, communication, creativity, critical thinking, logical thinking, problem-solving skills are some of the skills that blended learning can help develop (Evans, 2018). Lim and Jalil (2020) found that self-regulated learning and peer learning are 21st-century educational competencies

fostered by blended learning. Self-regulated learning is described as a process guided by motivation and activities designed to support the pursuit of personal learning goals (Lim & Jalil, 2020). Self-regulated learners actively construct their own learning process and adjust as necessary to achieve learning goals, skills that are both necessary for and advanced through blended learning (Lim & Jalil, 2020). Peer learning is a pedagogical strategy for 21st-century learners that is defined as peers actively helping and supporting one another in a 2-way, reciprocal process to acquire knowledge (Lim & Jalil, 2020). Lim and Jalil (2020) found a positive and significant relationship between the ability to learn with peers and academic achievement and that peer learning and academic achievement had cumulative reciprocal effects in blended learning environments.

Blended learning can help students think critically (Osman, 2017). Technology allows content to be enriched with multimedia visuals, prompt feedback, and active participation, leading to a deeper level of knowledge and greater application of critical thinking skills (Osman, 2017). Kim and Melikan (2017) stated that self-driven time management skills and technology literacy are two of the most important skills for the next generation of workers to possess and that blended learning helps students to develop these skills.

Improving Student Achievement

According to Osman (2017), student achievement is improved through personalized learning, in part due to the enriched relationships that result when technology is integrated effectively, and students become the center of the learning process. Osman (2017) states that when technology is used in a student-centered learning

environment, higher-level thinking skills such as digital communication, collaboration, and critical thinking are developed. Creativity is also fostered when innovative technology tools and teaching practices are used (Henriksen et al., 2016). In a compilation of reviews of current research and summary of practical implications, Henriksen et al. (2016) examined creativity and technology as elements of 21st-century education. They also defined creativity, describe a model of creativity, and contend that explicit instruction in creativity must be included in teacher education programs and as a part of educational policy for successful infusion of technology and creativity to occur.

There are many ways that blended learning improves student achievement. Smith (2016b) described the success of a school district in western Pennsylvania in raising reading scores from 69% to 90%. The improvement is credited to the adoption of a blended learning model for reading instruction in which students have access to rigorous text digitally. The benefits of the implementation of blended learning include increases in critical text analysis, student engagement, classroom discussions, and higher-order thinking skills (Smith, 2016b). Kim and Melikan (2017) studied the test scores of blended learning students and conventional learning students in the same high school using the same standardized tests and found that the blended learning students outperformed their peers in every assessment.

A report summarizing research on the influence of student achievement of K-12 online and blended learning programs found that the programs varied in how they offered differentiated learning options but the blended learning programs offered opportunities to inform face-to-face instruction to increase student achievement (Brodersen & Melluzzo,

2017). Dole et al. (2016) conducted a case study using focus groups, observations, and interviews. The setting of the study was a rural school using blended learning to meet the needs of gifted students. Dole et al. described the demographics of the students as well as the structure of the blended lessons used. Dole et al. (2016) described the data collection methods and limitations of the study. Among the results, Dole et al. (2016) found that blended learning provides students with multiple layers of support, increases motivation, allows for differentiated and personalized teaching and learning, and allows students to be more productive.

In a study examining blended learning in an urban Title I elementary school, the results suggested that blended learning benefits literacy skills for all students, especially when it is implemented in early grades (Prescott et al., 2018). Blended learning enables high-quality interactions between teachers and students and among students (Ravenscroft & Luhanga, 2018). According to Bechter and Swierczek (2017), teachers are able to differentiate and personalize learning in order to increase achievement by using tools such as customized video lessons, project-based learning, formative and summative assessments, collaborative inquiry projects, and digital storytelling. Differentiation, student choice, and control, emphasis on critical thinking, increased problem-solving, and action learning are considered benefits of blended learning that increase student achievement (Bechter & Swierczek, 2017).

Improving Instructional Practices

Blended learning can be used to improve existing educational practices. Blended learning allows teaching and learning to be as student centered as possible (Adinda &

Marquet, 2018; Bradley, 2017) and helps all students, including those considered at risk,

to reach their potential (Ullman, 2017). Intervention at the elementary level is especially

important because this is where the building blocks for complex math courses and

reading to learn in later grades are established. To fill in the gaps, leaders in elementary

education are implementing digital curricula in the form of blended learning (Shechtman

et al., 2019). According to Tucker (2017) using mobile devices for teaching math in a

rotational model is an effective way to implement blended learning. The digital version of

guided math stations leads to increased access to real-world math problems and the

ability to provide intervention and enrichment. Similarly, Camilleri and Camilleri (2017)

conducted a critical analysis of the use of gaming as a blended learning platform and

found that digital learning games help students to think critically as they make evaluative

decisions to proceed within the game. In a study of 28 pre-K students in which one group

used iPads to practice literacy and math skills and one group did not, Reeves et al. (2017)

found that the iPad group showed a significant increase in literacy and math skills.

Blended learning pushes teachers into a facilitator role, providing additional class time to

communicate, remediate, and manage classes effectively (Elian & Hamaidi, 2018).

It is easier to individualize instruction with blended learning. Blended learning

provides increased flexibility and personalization due to diversified learning pathways

and provides increased opportunities for differentiating instruction (Halverson &

Graham, 2019). Reeves et al. (2017) stated that blended learning can be used to

customize student learning and address the inequities in education. In an action research

study using surveys, observations, and classroom assessments to measure the impact of

flipped instruction, D'Addato and Miller (2016) found that students were more responsible for their learning and became active participants rather than receivers of information. Lee and Hannafin (2016) stated that blended learning is student centered and identifies students as the owners of their learning. Instruction can be delivered at the students' level so that students are working on different levels while working with similar content, skills, and ideas (Altemueller & Lindquist, 2017). Bradley (2017) described a playlist of lessons and activities designed for each individual student to complete at his or her own pace. Blended learning can allow teachers to individualize learning to the extent that the current school structure needs to be revised. Blended learning allows schools to deliver flexible and individualized education and implement innovative pedagogies (Lee & Hannafin, 2016). According to Horn and Fisher (2017), bell schedules, course schedules, pacing guides, and age-based grouping are no longer necessary with blended learning. Learning is truly individualized to the point that each student learns at his or her own pace, receives instruction on his or her level, and advances to the next grade or course when he or she is ready rather than according to the school calendar (Horn & Fisher, 2017). Pace and Mellard (2016) evaluated the effects of a blended learning model for sixth graders in an English language arts class. The findings indicated that the online instruction aspect of blended learning offers more opportunities for individualized instruction and flexibility.

Benefits of Blended Learning from the Students' Points of View

Students find blended learning to be beneficial. A key element of blended learning is student control over time, place, path, and/or pace. In a study on using blended

learning in a math class, Shechtman et al. (2019) found that the students preferred the blended model to the traditional model because the teacher had more time to provide assistance, they were able to move at their own pace, there were fewer distractions, and they had access to lessons at home. Kim and Melikan (2017) stated that flexible seating, flexible lunch periods, and the elimination of study halls were perceived as positive changes by students in a science technology engineering mathematics (STEM) magnet school. According to Crompton et al. (2016) and Horn and Fisher (2017) students stated that they enjoyed the flexibility and choice components of blended learning. In a case study examining the perspective of students in a third-grade class using blended learning, the results indicate that students enjoy the variety of learning activities, using technology, learning at their own pace, fun learning activities, and getting help from their teacher when they need it (Truitt & Ku, 2018).

Transitioning from Traditional Learning to Blended Learning

Past research indicated that there is a lack of training for elementary teachers to use technology tools to improve student learning. States across the country are adopting policies that promote the implementation of digital materials but do not provide policies for oversight and accountability (Boninger et al., 2019). Economics and advances in the technology field have made mobile devices more accessible and affordable. As a result, it has become common for school districts to provide students with mobile devices such as laptops and tablets to be used as learning tools (Linder, 2017). Graham et al. (2019) and Linder (2017) stated that devices and learning programs must be chosen intentionally and in-depth training on how to use them must be provided for them to be used successfully.

Although these devices are readily available for classroom use, teachers struggle with implementation because teacher training is key to overcoming resistance (Altemueller & Lindquist, 2017). One of the main barriers to utilizing mobile devices in a meaningful way is a lack of training (Crompton et al., 2016; Grant et al., 2015). Greene and Hale (2017) contended that blended learning works best when implemented with quality training for students and professional development for teachers because an engaged, effective teacher must make the process of transitioning cohesive.

According to Bellibas and Gumus (2016), one of the reasons teachers are resistant to change and specifically, integrating technology, is a lack of professional development. Bellibas and Gumus (2016) found that teachers reported few opportunities for quality professional development in a mixed-method study using quantitative data from a sample of 1,000 teachers and qualitative data from a sample of 13 teachers. Further, teachers without collaborative, hands-on training on how to use technology tools feel intimidated, insecure, and unprofessional and are less likely to implement the technology in their classrooms (Bellibas & Gumus, 2016). In a recent qualitative study exploring the beliefs of elementary teachers on technology and 21st-century skills, O'Neal et al. (2017) found that teachers feel that they are expected to use technology to promote 21st-century skills across the curriculum and that doing so is impacted by pressure to adhere to pacing requirements, limited professional development, and limited access to mobile devices. Effective professional development should be directly connected to student learning, involve collaboration and observation of teaching practices in action, and time to reflect and plan (Bellibas & Gumus, 2016). According to Linder (2017) the transition to blended

learning will be smooth for many teachers who plan their lessons to be learner centered, based on student learning objectives, and aligned with assessments and assignments, because blended learning classrooms are designed around these same principles. Additionally, the transition will become easier as new teachers enter the teaching field because technology integration in blended learning environments will come naturally to digitally native college students (Smith et al., 2020).

Implementing blended learning to improve student achievement cannot happen without ongoing professional development (Pautz & Sadera, 2017). In fact, training is essential for teachers to learn how to use technology tools to engage learners on all levels (Pautz & Sadera, 2017). Tucker (2017) found that teaching practices are not changing to meet the needs presented by innovative technology in the classroom. Additionally, Tucker (2017) stated that teachers will use technology in traditional teaching modes if no training is provided and that in order to make a difference, we must change the ways teachers are trained to incorporate technology.

One of the biggest challenges of implementing instructional technology practices is the shift in thinking required of teachers, including developing a student-centered approach, considering student voice, offering flexible seating, and being consistent with digital learning models (Bendici, 2020). Osman (2017) stated that teachers need to change their mindset to view the unknown as an opportunity rather than a threat. Professional development must extend beyond isolated training sessions on specific skills or programs and should be focused on an in-depth reconceptualization of pedagogy and a redefinition of teaching in the 21st-century (Greene & Hale, 2017). School leaders can

cultivate this mindset by allowing teachers a voice in designing blended learning programs, providing time for learning walks and collaboration, and encouraging teachers to share ideas as well as failures as an opportunity to learn (Osman, 2017). Cieminski and Andrews (2018) suggested that districts thinking about implementing blended learning include books, online courses, collaborative planning time, weekly release time for individual planning, and time to visit other classrooms as methods of training teachers. Training teachers to use blended learning takes time and deliberate planning of professional development (Ullman, 2017).

Another key element in implementing blended learning is the development of a video lesson library. Teachers have the option of using the existing online lessons provided by textbook manufacturers, Khan Academy, and learning software or creating their own lessons (Unal & Unal, 2017). Stephens (2016) stated that collaboration and communication are important skills, not only to teach 21st-century learners, but also among educators. Sharing digital resources allows teams of teachers and students to share ideas, allowing for true global innovation (Stephens, 2016). Lessons can be created using presentation software such as PowerPoint and Keynote, screen capturing software, and video cameras (Unal & Unal, 2017). Once created or selected, teachers store videos on class websites, allowing students the opportunity to move through lessons at their own pace (Unal & Unal, 2017).

Galvan (2016) stated that blended learning can support a personalized learning approach if the correct tools are chosen to identify learning gaps and offer targeted instruction in response. Stephens (2016) recommended implementing a learning

management system (LMS) such as Schoology or Google classroom to connect other

learning tools such as Dropbox, YouTube, and Google Drive. Participate Learning is

another LMS that allows teachers to create personalized collections of materials that can

be shared among teaching teams for collaboration (Stephens, 2016). Gooru, another

LMS, provides high-quality, customizable education aligned to world-renowned libraries

and colleges, gives students immediate feedback, and offers opportunities for students to

collaborate (Stephens, 2016). Bailey et al. (2017) suggested using the Just-in-Time-

Teaching (JiTT) technique to implement blended learning. The JiTT technique allows

educators to review the results of online learning activities completed the previous day to

make changes to instruction "just in time" to address the learning gaps presented by the

results of the students' online activities (Bailey et al., 2017).

Challenges of Blended Learning Implementation

There are challenges to implementing blended learning. Frenzel (2018) found that

only 14% of teachers use educational technology weekly. One reason for this is that

many teachers are unfamiliar and uncomfortable with technology (Frenzel, 2018). In a

systematic review of literature regarding challenges with blended learning, Rasheed et al.

(2020) found that lack of confidence, time, and willingness to learn how to use the

technology required for teaching with blended learning among the top reasons teachers

resist implementing it. In the literature studied, teachers listed lack of experience with

creating educational content such as videos and interactive documents, lack of experience

with learning management systems, time and effort needed to create videos, difficulty

with operating instructional technology, and wasting time on troubleshooting tech issues among the reasons they are reluctant to use blended learning (Rasheed et al., 2020).

For educational technology to be used effectively in the classroom, teachers must be committed to making the change. Rasheed et al. (2020) found that teachers are skeptical that online learning improves learning and have expressed that technology is a barrier to student success. By demonstrating the benefits of using technology and providing consistent training, teachers can overcome their discomfort (Frenzel, 2018), resistance to technology, technology illiteracy, and technology anxiety (Rasheed et al., 2020). Arnett (2019) stated that new practices rarely make a difference unless teachers are eagerly and thoughtfully engaged in adopting them. To help teachers shift to a new paradigm such as blended learning, school leaders must find a way to align the new learning model with the teachers' motivation to improve their practice by better meeting the needs of the students (Arnett, 2019).

One potential problem with motivating teachers to change their teaching methods is that teachers must relinquish control of what students are learning for part of the day to technology. Boninger et al. (2019) claimed that digital learning platforms distort pedagogy by making important educational decisions that were once in the hands of teachers. In a review of blended learning practices at three schools, Horn and Fisher (2017) reported that teachers found one of the challenges to be the decreased level of control they have over their students' learning. For example, rather than having control over what material is presented to students, they must shift their efforts to identifying students who are struggling. In an editorial on the challenges of online learning, Gillett-

Swan (2017) states that teachers are struggling with the lack of control over what students are doing on the computer. Instead of completing the work assigned to them, unmotivated students are sometimes watching videos on other topics or playing games. Grant et al. (2015) found that limited access to resources was a challenge. Resources listed in the study included devices, time, training, and support from the administration. The digital programs that elementary students are using during blended learning rotations are typically adaptive programs that assess the students' needs and instructional level. For students who are being instructed below grade level, a conflict between coverage and mastery develops because the pace slows when students need remediation and therefore might not receive instruction on some grade level standards (Shechtman et al., 2019).

Changing the traditional school timelines is another challenge. Semesters, class periods, and grade levels do not fit within the blended learning structure because students are able to finish courses at their own pace and therefore obtain credits at times other than traditional marking periods, semesters, and even grade levels (Horn & Fisher, 2017). While this personalization is often included as a benefit of blended learning, school staff is challenged with developing a system for students who move faster or slower than the typical semester pace (Gillett-Swan, 2017).

At the elementary level, the rotation model presents a similar challenge because students finish their work early and the time waiting to switch stations is wasted. One solution is developing a system for shared devices so when one student finishes, the next student assigned to that device can begin (Horn & Fisher, 2017). In a case study examining the experience of third graders using blended learning, Truitt and Ku (2018)

found that students perceived the challenges of blended learning to be that the work was sometimes too difficult and the technology was sometimes hard to navigate. Other challenges include a lack of teacher competency with technology, storing documents, and sharing devices (Gillett-Swan, 2017; Horn & Fisher, 2017). Boninger et al. (2019) recommended that educators pause the efforts of promoting and implementing digital personalized learning programs until there are measures in place to review, provide oversight, and safeguard student and teacher data.

Implications

The blended learning movement has fueled the push for effective professional development at the elementary level. This study can be used to provide insight into how to use blended learning in elementary classrooms to develop 21st-century skills, if research suggests that teachers find it to be an effective classroom practice. A potential outcome of the study is to help educators to enact positive social change in the school community by developing a society of learners entering the workplace with critical thinking skills, problem-solving skills, creativity, and the ability to communicate and collaborate.

One possible direction for the project is to develop a professional development guide, using suggestions for implementation supported by the research. Another possible direction for the project is to create a curriculum guide for blended learning based on the findings of the research.

Summary

The blended learning model provides unique occasions for students to delve into real-world problem-solving, work with others collaboratively, develop creativity, communicate on a global level with technology, and become effective workers in the 21st-century. In Section 1 examined the local problem, the rationale for the study, definitions of terms, the significance of the study, a review of the literature relating to the conceptual framework and the broader problem, and implications for the project. In Section 2 I provide the methodology including the design and approach, participants, methods for collecting data, data analysis, and limitations for the study.

Section 2: The Methodology

The problem that the qualitative study addressed is that elementary teachers in local schools in an eastern state are not implementing blended learning as intended by the school's improvement plan. I planned to use interviews and observations in this case study to understand the perceptions of elementary teachers who have experience teaching with blended learning. However, due to the Covid-19 pandemic, I was not able to do observations because schools were not allowing visitors. Therefore, I collected data through interviews to answer two research questions:

RQ1 What are third through fifth-grade elementary teacher experiences implementing and using the blended learning teaching approach?

RQ2 What are third through fifth-grade elementary teacher beliefs and practices regarding the interaction of the elements of blended learning (the teacher, the learner, the content, the technology, learning support, and the institution)?

The purpose of this study is to examine the perspectives of elementary teachers in Grades 3 through5 who were identified as effectively using blended learning, and the interactions among elements of blended learning including the student, the teacher, the content, the technology, the school, and the learning support. This information is helpful in addressing the local problem that elementary teachers are not implementing blended learning as intended by the school's improvement plan. In the following section, I describe the qualitative study and describe how I used the data to find answers to the research questions.

Research Design and Approach

In this study, I used a qualitative design to explore teachers' perceptions of blended learning. I selected a qualitative approach because the purpose of the study was to explore blended learning rather than confirm a hypothesis (Thomas, 2017). As the purpose of the study involves exploring the beliefs and practices of teachers who have been identified as effectively using blended learning, and the interactions between the elements of blended learning, a qualitative design is appropriate.

The design used for this study is qualitative. The method used in this study is an exploratory case study. Thomas (2017) defined a case study as a research inquiry method that investigates a program from multiple perspectives and offers in-depth exploration of the program's complexity and uniqueness. Case study research is an effective way to gain an understanding of a complex issue while building on prior experiences and adding strength to previously collected research. A qualitative case study is the best design for this study because it allowed data to be collected from several teachers to answer the research question and sub-questions by conducting interviews. Quantitative and mixed-methods designs were not selected because quantitative data would not answer the research questions. Ethnography was not selected because the purpose of the study is not conducive to immersion in a cultural setting over an extended period and the scope of ethnographical research is too broad (Teherani et al., 2015). Using this approach would focus on data influencing a specific group but would not be representative of the factors of blended learning affecting all students. Grounded theory was not selected because this research is guided by research questions rather than an emerging theory. The purpose of

this study is not to develop theories (Teherani et al.). Phenomenology was not selected because the study is not going to describe the essence of a phenomenon and the scope of phenomenological research is too narrow (Teherani et al.).

<div align="center">**Participants**</div>

In this section, I will describe the participants, how they were selected, and why they were selected. I will explain the steps taken to gain access to participants, how they were invited, and how I made sure they were qualified to participate. I will describe the working relationship between the participants and me as well as steps taken to protect the participants.

Description, Selection, and Justification of Desired Participants

For this project study, I conducted interviews with nine elementary teachers who use blended learning in their classrooms. The participants in this study were licensed teachers who self-identified as effectively using blended learning at the elementary level in Grades 3 through 5. These grades were used because blended learning requires students to be capable of independent learning, and older elementary students are more likely to possess this level of maturity (Horn & Staker, 2015).

This case study includes nine participants. According to Yazan (2015), a case study should not include more participants than can be richly studied by the researcher. The low number of participants made it possible to achieve a deep level of inquiry. Using fewer participants allows for rich description of the data derived from interviews and observations. Having participants from each grade level was beneficial to the study because this provided rich data in each of Grades 3-5.

Procedures for Gaining Access to Participants

After obtaining permission from the institutional review board ([IRB], 04-09-21-0485627), I contacted technology directors at local school districts and presented a summary of my study. In the following sections, I describe the steps taken to select participants and invite participants. I also disclose how I ensured participants were qualified to participate, and how I conducted interviews.

Establishing Feasibility to Collect Data

To select participants, I used purposeful sampling. Purposeful sampling is defined as a method of selecting information-rich participants with the intention of learning about a specific phenomenon (Yazan, 2015). Gatekeepers are those who provide access to potential participants (Andoh-Arthur, 2020). In my study, the gatekeepers were the technology directors who provided access to teachers who met the study's criteria.

Inviting Participants

I asked the directors to forward invitations (Appendix B) to elementary teachers in Grades 3-5 who have at least 2 years of blended learning experience. Those teachers were contacted via email asking for volunteers to participate in the study. These participants contacted me via email so I could explain the study and obtain consent. This process provided access to two participants. To broaden the search for more participants, I revised my IRB plan to include recruiting via social media. I composed a flyer (Appendix C) and posted it in Facebook teacher groups. Potential participants were screened via a Google form to ensure they had adequate experience with blended learning. This form included an item for participants to provide their personal email

addresses. I emailed the consent form to interested individuals who were qualified to participate. I directed teachers to indicate their consent by replying to the email with the words, "I consent."

Qualifying Participants

Sixteen potential participants responded to the study invitation. Of these, three stated that they did not have experience with blended learning during screening, one did not consent to the study, and three did not respond to requests to schedule the interview. This resulted in nine participants for the study.

Establishing Researcher-Participant Working Relationship

Throughout the study, I fostered a positive researcher-participant working relationship by maintaining communication about the research process and ensuring that participants were comfortable with the procedures. Participation was voluntary, interviews were conducted at the participants' discretion at a time that was convenient for them, and all participants were treated with professional respect. Participants were able to contact me with questions or to reschedule appointments when necessary. I clearly communicated the purpose of the study, conducted interviews virtually, and created opportunities for member checking to the review data collected. I completed member checks of the initial findings to reduce researcher bias and misunderstanding.

Protection of Participants

To protect the rights of the participants, I obtained IRB approval (# 04-09-21-0485627). Next, I presented details of the study, such as the purpose, data collection methods, and my intended use of the results, to the technology directors. I explained the

purpose of the study and the types of data I intended to collect. After I informed the

participants of all aspects of the study, I obtained consent from the participants.

Participants of the study had the right to withdraw at any time and participated during

times that were scheduled to meet their needs. Participants received a $10 gift card for

participating. There was no penalty for withdrawing. They also had the right to refuse to

answer any questions for any reason. Throughout the study, I protected the participants

from unethical interactions. I maintained confidentiality by using a number coding

system linking a participant's number to a pseudonym.

Data Collection

In qualitative research, the process of data collection begins by identifying types

of data that will address the research questions (Turner & Danks, 2014). Qualitative data

were collected by posing broad, general questions and allowing participants to share their

knowledge or opinions without being influenced by the researcher's perspective, as

guided by Turner and Danks (2014).

For this project study, I collected data through personal interviews, a process that

allowed me to direct an inquiry designed to answer the research questions in the study

(Thomas, 2017). I asked questions guided by the research questions and conceptual

framework so that teachers were able to demonstrate their perceptions of blended

learning. Other forms of data collection, such as document analysis and focus groups,

would not be as effective as interviews for gathering participants' perceptions because

they do not allow for personal interactions.

Data Collection Instrument

   I developed an interview protocol aligned with the research questions by using the

framework and literature review (Appendix D). The purpose of the interview protocol

was to keep the interview focused and aligned with the research problem. According to

Yazan (2015), interview protocols should be designed by the researcher and contain

instructions, questions, and space for notes. I created the data collection instrument used

in this study Interview questions were designed to answer the research questions and

were carefully aligned to address the components of the conceptual framework.

Questions were validated for content by peer review. Local technology directors who

have more than 5 years of experience with blended learning but are not otherwise

involved in the study reviewed the questions. I sent the interview protocol to the directors

and asked them to review it and provide feedback. They suggested minor changes such as

the addition of follow-up questions. I considered their suggestions and made changes to

the interview protocol.

Sufficiency of Data Collection Instrument

   I designed the interview questions (Appendix D) to develop a deep understanding

of teacher perceptions of blended learning. I validated the interview protocol by aligning

the interview questions with the research questions and within the context of the

conceptual framework using a data collection instrument alignment matrix. The data

collection alignment tool matched each research question with the instrument used to

collect the data and the specific interview questions that address each research question. I

established content validity of the interview protocol by asking five elementary educators

not participating in this study but familiar with blended learning to analyze it. These educators provided feedback on the wording of questions, length of the instrument, and the number of questions.

Interview Procedure

I gave participants the option of conduction the interview in-person, on the phone, or on Zoom. Eight participants chose Zoom, and one chose a phone interview. The interviews were scheduled at a time convenient for the participant. At the start of the interview, I informed participants that I would tape record and transcribe the interview and that they would be provided the opportunity to review findings for accuracy. The Zoom participants had the option of keeping their cameras off; no video was recorded to protect the privacy of participants who chose to leave the camera on. During the interview, I used the interview protocol to guide my questions (Appendix D). I gave participants time to think about and respond to the questions.

For this study, I collected and analyzed data by creating a case study database on my password-protected laptop which was stored in my home. The process included transcribing audio data and scanning written data to be stored and organized in a central database. Data were scanned and transcribed digitally and stored on my password-secured computer. I organized the hard copies and digital copies in folders and stored in my home. Reflective journals created by the researcher were used to keep track of emerging understandings as data were analyzed.

Role of the Researcher

My role in this study is that of researcher and observer. I have never had a role within the schools used in this study and do not have a relationship with any of the participants. I have been an elementary school teacher for over 20 years, but I have no experience with blended learning at the elementary level. I have participated in blended courses as a student at the graduate level.

I limited bias about the benefits of blended learning by completing a thorough self-examination of my opinion that teachers should be using blended learning and withholding personal opinions related to the study. I established and maintained an audit trail to protect against bias interfering with data analysis. According to Korstjens and Moser (2018), an audit trail describes the research steps taken from the start of the research project to the development and reporting of the findings. The records of the research path were kept throughout the study. It was important for me, as the researcher, to conduct the interviews without any preconceived notions or assumptions. I focused on the participants during the interviews and assured them that they could answer freely.

<div align="center">

Data Analysis

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In qualitative research, there is no formula for data analysis; it is done concurrently with data collection (Yazan, 2015). According to Yin (2017), the first step in analyzing qualitative data is to gain a general sense of the information by exploring the data.

I began the process of exploring the data by transcribing the interviews. I completed the transcription manually as this helped me to become more familiar with the

data (Yin, 2017). To transcribe the interviews, I listened to the recording and typed what I heard. After the initial draft, I listened again while reading the transcript, making changes as necessary. After transcribing was complete for each participant, I reread each transcript to get a general overview of the data. I took notes with first impressions and possible initial themes.

I analyzed data collected during this study using open coding to group data into codes, then categories, then into themes. According to Saldana (2008), open coding is a method of arranging data in a systemic order or categories. After reading the transcripts, I manually identified codes that were recurring throughout the interviews. I kept a record of emergent codes because codes can accumulate quickly and change throughout the analysis process (Saldana, 2008).

My analysis of the first interview yielded 50 codes. Examples of the codes I used include *self-made videos, peer support*, and *exit tickets*. I coded them on my spreadsheet by applying a different color to each possible category. Next, I used these color codes to analyze the second interview. I made a second column on my spreadsheet for the second interview and compared it to the first column. Similar ideas were combined into one code, resulting in a list of 33 codes. I used this set of codes to analyze the remaining interviews.

After analyzing the remaining interviews, I grouped and color-coded the codes into broader categories. A set of codes including *peers, learning communities*, and *teacher as facilitator* formed the category *sources of support for teachers and students*. This category along with the codes *start gradually, learn by doing*, and *choose one*

subject you love formed the final category *getting started with blended learning.* I formed

other initial categories such *as inquiry learning method, individualized instruction*, and

authentic learning experiences. I consolidated all the initial categories into a final set

including *applications, learning videos, training, getting started, individualized

instruction, 21ˢᵗ-century skills, learning environment, lack of training,* and *lack of

support.*

I then analyzed each category to identify common themes including the transition

to, benefits, and challenges of blended learning. Table 1 includes the final themes and

consolidated categories.

Table 1

Emerging Blended Learning Themes From Data Analysis Categories

Transition to	Benefits	Challenges
• Applications	• Individualized instruction	• Lack of training
• Learning videos	• 21ˢᵗ-century skills	• Lack of support
• Training	• Learning environment	
• Getting started		

A detailed review of the themes, codes, categories, and quotes from the interviews

is available in Appendix E.

Evidence of Quality and Procedures to Assure Accuracy

I used member checking to corroborate the credibility of the findings. According to Creswell (2012), member checks allow participants an opportunity to ensure the data is accurate. I provided the participants with a summary of the findings to confirm the accuracy and interpretation of the data. I developed a member check protocol (Appendix F) to give participants an opportunity to review a summary of the findings. I asked participants to provide feedback confirming that my impressions were correct, and I provided an opportunity for them to correct anything they felt was misrepresented upon completion of their review of the data. None of the participants indicated any findings held incorrect information. To avoid researcher bias, I restated answers to questions to ensure that I was not making any assumptions. I encouraged participants to clarify their responses to get the most accurate data possible.

Procedures for Dealing with Discrepant Cases

Another consideration for quality data is acknowledging the potential for discrepant cases or information. I included information that was not relevant to a question in the transcription notes as part of the participant's response. I did not ignore or eliminate any information. During member checking, participants had an opportunity to provide additional comments regarding discrepant information. Discrepant information was coded and analyzed and included in the results of the study.

Data Analysis Results

The problem that the study addressed is that elementary teachers in local schools in an eastern state are not implementing blended learning as intended by the school's

improvement plan. Data collected through interviews were used to answer two research questions:

RQ1 What are third through fifth-grade elementary teacher experiences implementing and using the blended learning teaching approach?

RQ2 What are third through fifth-grade elementary teacher beliefs and practices regarding the interaction of the elements of blended learning (i.e., the teacher, the learner, the content, the technology, learning support, and the institution)?

The research questions were designed to identify ways in which blended learning is successfully implemented by some schools, so I would be able to use the results of the study to provide guidance to the local setting. By studying teacher perceptions regarding the implementation of blended learning and its effect on instruction and interaction of the elements of blended learning, (i.e., the teacher, the learner, the content, the technology, learning support, and the institution) it may be possible to identify the best course of action to address the local problem. The purpose of this project study was to explore the beliefs and practices of elementary teachers in Grades 3-5 who were identified as effectively using blended learning and the interactions among the elements of blended learning.

In this section, I describe the findings of the study, including an overview of the three themes identified in the data. I present the elements of the CABLS Framework (Wang et al., 2015) in relation to the themes. I describe the outcomes of the study in relation to the research questions.

Findings

All nine of the participants provided responses that addressed both research questions, and there were no discrepant cases. Findings from the study indicated that all nine participants had ideas regarding the effective use of blended learning including benefits and challenges as well as ideas about the interaction among blended learning elements. Each theme is presented in the following sections. After describing the outcomes of the study in relation to the research questions, I present which elements of the CABLS Framework (Wang et al., 2015) were addressed by participants.

Overview of Themes

Data from the interview transcripts were analyzed to identify emergent themes. I used open coding—a process that involved grouping interview responses into codes and categories (Saldana, 2008)—to analyze the data; and I identified three major themes:

- Transition to blended learning

- Benefits of blended learning

- Challenges of blended learning

In the following sections, I report the results of the data analysis by theme, provide concluding remarks to identify how these themes relate to the conceptual framework, and answer the research questions.

Theme 1: Transition to Blended Learning

This theme of the transition to blended learning emerged from the interviews with each of the participants providing information about the transition to blended learning. Twenty-five initial codes and four categories were subsumed into this theme. All nine

participants spoke about the process of the transition. In the participants' reflection on the transition, they indicated that the approach, motivation, learning applications/platforms, training, and experience were key to their success. They additionally indicated that all six elements of the CABLS framework (i.e., the teacher, the learner, the content, the technology, learning support, and the institution) were relevant to a successful transition.

Approach

When considering their mindset for approaching an instructional transition to blended learning, participants overall felt it was best to start small and make the transition gradually. Seven of the nine participants mentioned that the best way to transition was to start with one content-area subject or topic. Participant 1 shared that her fourth-grade team each created a lesson in one of the content areas and then shared them with the team. She noted this allowed each team member to focus on one topic while limiting the workload for the team. Most of the participants (78%) described the transition with video lessons during small group instruction. Participant 2 stated that elementary teachers who are self-contained could easily start with one subject. He suggested, "Start small. Start with one topic like grammar. There are tons of videos already made about grammar." According to participants, after identifying a topic, teachers can search for or create instructional videos for students to view independently. By making incremental shifts to blended learning, the participants recognized ways to integrate technology and reclaim teaching time.

Motivation: Lack of Teaching Time

Four participants shared that their shift to blended learning arose from a lack of time to teach all grade level standards when using traditional instruction. Participant 3 described the need for blended learning arising from limited time to teach all the fourth-grade math standards before the state standardized tests in the spring. This participant described the transition in her experience by stating, "I started with one topic in math: geometry. There were a lot of definitions the students needed to learn so I made videos about each of the terms for students to watch during small group time." After watching the videos, she explained that the students would complete vocabulary-building activities like word sorts and notebook diagrams, and she followed up with students during small groups to make sure they understood the terms. This allowed the geometry section to be learned independently while she continued teaching other math standards. These participants indicated they were motivated to transition to blended learning as it provided more time to differentiate instruction and ensure all standards were addressed appropriately for all learners.

Learning Applications

Participants described specific learning applications—sometimes called *programs* or *platforms*—as part of the transition to blended learning. Overall, seven participants mentioned the learning applications as part of a shift in teaching as their school district purchased licenses to digital platforms. Participant 6 stated, "the transition to blended learning really happened naturally when my district purchased programs like Lexia and Dreambox." This teacher explained that the use of the programs was monitored, and

students needed to be on the software daily for a certain amount of time. Participant 6 found that the software learning activities allowed more time for her to reteach concepts to struggling students in small groups. Other students were independently using the programs, and this opportunity benefitted all learners. She gradually added other digital content like learning videos and formative assessments; Participants 6, 7, and 9 reported that eventually, the students were learning a lot of the material digitally.

Training & Experience

Most participants (78%) related that the training for blended learning was not adequate, and that they learned best by experience. Training provided for the learning platforms and programs such as Lexia, Google Classroom, and Zoom was useful according to one of the participants, but others (56%) felt that they needed to train themselves to understand how to use them. Participant 5 described the training for Lexia as a broad overview. She stated that she had to explore all the components on her own to identify the most useful feature of the program: small group lessons.

Eight of the nine participants gave specific advice for the transition to blended learning. Examples included creating a mock student account on digital learning platforms to view them as students view them, grouping students strategically to maximize the ability to provide support, and setting clear expectations of student procedures blended learning lessons. Participants 1, 4, and 8 provided anecdotal stories of how they identified the need for these processes. For example, Participant 4 shared that students needed rules for using headphones for listening to videos as well as expectations for digital check-ins and discussion responses. Through their various statements, all

participants expressed that explicitly teaching every routine and anticipating the students' needs will provide for a smooth transition to blended learning. Training and learning through experience are important for the transition to blended learning.

Summary

The theme of the transition to blended learning was evident in the data. The participants described the approach to blended learning, motivation to transition to blended learning, learning applications, and training or experience as key aspects of making the transition. The elements of the framework in relation to this theme are described in a later section.

Theme 2: Benefits of Blended Learning

Throughout the interviews, participants described the benefits of blended learning. It was clear that the participants largely felt that blended learning was a positive experience. Twenty-three initial codes and three categories were condensed into this theme (Appendix E). Overall, the participants' statements about blended learning were positive. All nine participants spoke about individualized instruction as a benefit of blended learning. One individualized component of blended learning is that students move through learning platforms at their own pace (Siraj & Al Maskari, 2018) and six participants spoke about this component. Additionally, teachers can individualize instruction by providing remediation in small group or individually and creating or sharing learning videos tailored to students' needs. Three of the participants explained how blended learning helped them to meet students' individual needs by providing more time for them to be a resource to students. Participant 3 shared that by using premade

videos to present math material, she was available to provide support to struggling students because she was not using as much time presenting the material to the class.

All nine participants spoke about blended learning providing the opportunity for students to develop skills such as collaboration, communication, creativity, and critical thinking. The development of these skills indicates that students using blended learning experience higher levels of thinking. I grouped 10 codes into the category *21st-Century Skills*, a category under the theme *Benefits of Blended Learning.* See Appendix E for the data table. Participants shared experiences of students developing these skills through inquiry-based learning projects, discussion boards, team projects, and enrichment activities. Participant 1 described the use of choice boards for early finishers as one to provide enrichment. She stated, "I always include a critical thinking task as enrichment. Often this is an authentic learning experience that encourages collaboration, creativity, and deep thinking." The development of these skills is a benefit of blended learning.

Overwhelmingly, participants stated that a positive learning environment was a benefit of blended learning. Six participants described the classroom environment as becoming a community of learners. My analysis of the data indicates that blended learning fostered an environment in which students support each other, and teachers and students work together. One participant described it as a shift from a teacher-centered environment to a student-centered environment. Another participant stated that blended learning encourages a community of learners as compared to a lecture-teaching environment. Six participants related that blended learning promotes a setting in which the teacher acts as the facilitator of learning. Participant 4 stated, "Instead of always

looking to me for guidance, students started looking to each other." Peer support, a

community of learners, and a student-centered environment were expressed by

participants as evidence of a positive learning environment.

Summary

The benefits of blended learning were described by all participants and this was a

clear theme of the data. The participants described individualized instruction, skill

development, and a positive learning environment as key benefits of blended learning.

Overall, participants felt that using blended learning was a positive experience.

Theme 3: Challenges of Blended Learning

This theme emerged from the data as participants discussed difficulties with

blended learning. Six participants stated that the biggest challenge to effective blended

learning is troubleshooting technology. Examples of this include lack of outlets for

keeping devices charged during use, learning programs not working properly, and slow

internet connections. Three participants shared stories in which issues with technology

created stressful situations they were not able to immediately resolve. Participant 2

described a situation in which the video students were to use for instruction would not

play on their device even though it worked when he previewed it. This participant stated,

"When I am working with a group of struggling students and the other students are stuck

due to a video not playing, it is very frustrating." The data indicate that one downfall of

blended learning is that all the lessons and learning plans center around the technology;

when the technology does not function correctly, it is difficult to formulate a backup plan.

Another of the common challenges with blended learning is a lack of support from administrators. Nearly half the participants mentioned this issue in their responses. One participant described that administrators do not provide the time necessary to plan blended learning lessons. Participant 2 stated, "For blended learning to work well, teachers need more time to plan." Participant 3 stated that administrators seem to be unaware of how time-consuming it can be to put all the parts of blended learning in place: "On the surface, it looks easy but all the work is done ahead of time to prepare the lesson." Lack of awareness of the time needed to plan blended learning lessons contributed to the lack of support from administrators.

One of the codes within this theme is *lack of training*. When training for blended learning is not provided, teachers feel there is a lack of support. Most participants (78%) mentioned that they felt teachers needed training to be successful at blended learning. They provided examples such as training for facilitating the digital learning programs, for managing the blended learning model, and for general technology to fix minor issues as they occur. Another code within this theme is *school goals not clear*. This code was described by one participant as a problem that occurs when the administration does walkthroughs looking for evidence of school goals being met but those goals are not being made clear regarding the use of technology and blended learning.

Summary

The participants described the challenges of blended learning in their responses to the interview questions. Issues with technology and lack of support from the

administration were among the challenges faced by participants. In the next section, I

describe the research questions in relation to the outcomes of the study.

Findings by RQ

      I posed two research questions to gain an understanding of the problem in this

study: elementary teachers in local schools are not implementing blended learning as

intended by the school's improvement plan. I used the RQs to examine the perspectives

of Grades 3-5 elementary teachers who were experienced with using blended learning.

The following section summarizes the outcomes of my study in relation to the research

questions.

RQ1: Teacher Experiences Implementing Blended Learning

      RQ1 asked about third through fifth-grade elementary teacher experiences

implementing and using the blended learning teaching approach. Overall, teacher beliefs

about blended learning are positive. Theme 1, *The Transition to Blended Learning,*

related to some of the practices of effective blended learning such as ways to implement

and manage blended learning in the classroom. In the participants' responses relating to

the transition to blended learning, they discussed the approach to implementing blended

learning, their motivation for transitioning, the learning applications/platforms they used,

the training they received, and practical experience with blended learning. Most

participants (7 of 9) felt that a gradual approach to blended learning was the best way to

make the transition. They described starting small with one lesson or topic and gradually

building on that. Almost half of the participants (4 of 9) shared that lack of time to teach

all concepts and implementation of digital learning programs were motivators for the

transition. Most participants (78%) felt that the training they received was inadequate and that practical experience was most helpful.

Theme 2, *Benefits of Blended Learning*, indicates that teachers interviewed in this study who use blended learning in their classrooms feel that it is an effective teaching and learning strategy. One of the benefits of blended learning discussed in the interviews was individualized instruction. All nine participants stated that they were able to better meet student needs with individualized digital lessons and could provide extra help to students while other students were working on digital lessons. A second benefit of blended learning that participants discussed was the development of higher-level thinking skills. Six of the participants described collaboration for projects, problem-solving during blended learning lessons, and metacognition about their own needs as learners as examples of the critical thinking skills developed with blended learning. A positive learning environment was a third benefit of blended learning discussed by participants. All participants described a learning environment in which students supported each other and learned from each other.

Theme 3, *Challenges of Blended Learning*, shows that teachers feel they need certain supports including training to make blended learning successful. Issues with technology and lack of support from administration were among the challenges faced by participants. Six participants described situations in which the technology failed, and their lessons were negatively affected. Most participants (78%) said that the training they received was ineffective. Additionally, they felt that they did not have enough time to plan blended learning lessons and thus felt unsupported by their school administrators.

RQ2: Teacher Practice Regarding Blended Learning Framework Elements

All nine participants responded to Items 1-15 on the interview guide, thus providing comments relating to the learner, the teacher, and the transition to blended learning, as well as on the benefits and challenges of it. Understanding the participant experiences is key to addressing RQ1 in this study. However, understanding the interactions of the blended learning framework according to these participants is essential for addressing RQ2.

The second question asked about third through fifth-grade elementary teacher beliefs and practices regarding the interaction of the elements of blended learning (i.e., the teacher, the learner, the content, the technology, learning support, and the institution)?

After I analyzed the data results by theme, I applied the CABLS framework lens to provide additional insight into these participants' experiences with the blending learning model. In this section, I discussed the evidence of the CABLS framework components and the role of the learner, teacher, content, technology, learning support, and the institution as related to the transition to, benefits of, and challenges of blended learning.

Learner and Teacher. Overall, participant responses indicated that the learner and the teacher were key elements in the transition to blended learning (Theme 1). The participants stated throughout the interviews that teachers were an important part of the transition because the work of shifting lessons to a blended learning format is completed by the teacher. For example, Participant 1 stated, "The hardest part is done ahead of time when you create a video for each of your lessons." According to participants, the learner

begins to take more responsibility for learning new material during the transition by watching videos, taking notes, and completing learning activities related to the new material. Participant 8 gave this advice to teachers on the transition, "Start small and learn by doing." Other participants offered similar words to teachers on the transition such as starting with a topic or subject they enjoy.

When I analyzed the data, I found that the learner and the teacher benefitted from blended learning (Theme 2). Learners benefitted from individualized instruction, the development of critical thinking skills, and the positive learning environment. Participant 5 stated, "The biggest benefit for my students was the positive learning environment. We became a community of learners." Benefits for the teacher include more time to focus on individualized instruction and teaching in a positive learning environment. Participant 9 described the individualized instruction she was able to give her students as the most rewarding benefit of blended learning.

Some of the challenges of blended learning (Theme 3) shared by participants relate to the teacher. Participants 1, 2, 4, and 7 shared that the biggest challenge with using blended learning was that the training they received was inadequate. Participant 6 stated that the training she received focused on using Zoom and other software but did not help with facilitating blended learning. The participants did not indicate that students were challenged by blended learning.

Content and Technology. The content and technology elements of the blended learning framework were addressed with interview Items 3, 5, 7, 11, and 12. The responses suggested that the content and the technology are interconnected with the

transition to blended learning because the content is largely delivered using technology. The participants explained that one of the first steps to making the transition to blended learning is to choose one topic within the content and create digital or video lessons for students to access using technology. Throughout the interviews, content and technology were discussed together and participants emphasized the importance of delivering content using technology when making the transition to blended learning. Participant 4 shared, "I used videos, slide decks, and digital quiz games to help students learn new material." Rather than presenting new material to students, the content is delivered through technology.

The content element supported the benefits of blended learning by providing a platform for which students can learn material that is individually appropriate for them. For example, Participant 1 discussed providing differentiated content to meet the needs of learners. The content element also supports the development of 21st-century skills. Participant 1 shared her use of choice boards within the content to promote critical thinking. The technology element is a critical component of blended learning and is relevant to all the benefits.

All participants mentioned that technology was a challenge of blended learning. Participant 1 shared that videos were blocked on student devices during blended learning lessons. Other technology issues that participants indicated as blended learning challenges included issues with student devices—forgotten devices or charges, uncharged devices, or inconsistent timing of software updates on student devices created barriers to

classroom use of technology in planned lessons. The content was not mentioned as a challenge for blended learning.

Learning Support. The learning support element of the blended learning framework was evaluated with interview Items 3, 8, 13. Overall, participants did not discuss the learning support frequently. Three participants (i.e., 2, 6, and 7) stated that support for learning was integrated into the learning programs. Several participants related that when students struggled, they relied on peers for learning support. Participant 6 gave examples of peer support such as asking a partner for clarification on directions, asking a peer to explain the steps for completing a task, or asking for help with completing a learning task.

The learning support element is relevant to Theme 2, the benefits of blended learning. The participants described individualized instruction as a benefit of blended learning. Individualized instruction provides learners with the support they need to be successful. Learning support is also a component of a positive learning environment, which participants described as one of the benefits of blended learning. For example, Participant 4 discussed students relying on each other to support their learning. Learning support was not mentioned by participants as a challenge of blended learning.

I asked participants about the institution element of blended learning with Items 2, 3, 9, and 14. Participants discussed the institution when describing the transition to blended learning and training provided by their district as well as the learning programs purchased by the district. Most of the participants were unable to answer Item 14 about the school's plans and goals. Some stated that they did not know what the school's plans

and goals were, and others replied that the plans and goals did not relate to the transition to blended learning. The institution element was not discussed among the benefits of blended learning.

Lack of support from the administration was mentioned by participants as one of the challenges of blended learning. Participant 2 stated that the administration was not supportive of the time needed to plan and implement blended learning lessons. Participant 4 shared that the central administration team in her district wanted teachers to use blended learning but did not provide the time for teachers to create blended learning lessons.

Summary. Theme 1 indicated that there are several interactions among the elements of blended learning regarding the transition. All six elements were mentioned by the participants when they discussed implementing and facilitating blended learning. Theme 2 pointed to interaction among most of the elements, excluding the institution. Theme 3 suggested that there are challenges with the interactions among the institution and the technology.

Section 3: The Project

Introduction

In this study, I explored the perceptions of elementary teachers in neighboring school districts regarding their use of blended learning. The data I collected from interviews revealed that the participants found blended learning to be beneficial. To respond to the findings of the study, I created a position paper (see Appendix A) that describes two recommendations to help teachers in a local district to better use blended learning.

According to the findings gathered from participants of the study, teachers in the local district would benefit from professional development and the implementation of technology coaches. The research presented in the literature review of Section 3 substantiates the findings outlined in the position paper and supports my recommendations. The goals of the position paper are to provide district leadership with a summary of the data from my study, the supporting current literature, and a detailed course of action to provide teachers with the training and support to implement blended learning.

Rationale

The problem is that elementary teachers in local schools in a Northeastern U.S. state are not implementing blended learning as intended by the improvement plan for the school. I interviewed teachers in other districts who are experienced with blended learning to gain their perspectives. The findings of the study revealed three themes: the transition, the benefits, and challenges of blended learning. The findings and review of

literature indicate that the teachers in the local district may benefit from professional development in the form of training and the implementation of technology coaches.

The development of a position paper was appropriate for this study as it provides a knowledge base, scholarly foundation, and recommendations for district leadership to improve the use of blended learning. Powell (2012) defined a position paper as a way for a researcher to describe a problem and advocate for a specific solution supported by a rational and credible argument. The position paper in this project study provides specific recommendations based on research findings that may better prepare the teachers in this district to use blended learning.

Review of the Literature

The purpose of this study was to address the gap in practice at the local district by exploring the perceptions of teachers in other districts who are knowledgeable about using blended learning. In alignment with the results of the interview data analysis, I conducted a review of current literature by searching for peer-reviewed articles in the Walden University Library. The key terms I searched were *position paper, white paper, professional development, teacher training, blended learning training, technology training,* and *technology coaching.* I narrowed the search to articles published in the last 5 years and chose articles that were relevant to the findings of my study.

Position Paper

A position paper, also called a *white paper*, is a platform for effectively communicating an opinion in a compelling and articulate fashion (Powell, 2012). Effective position papers simplify decision-making for stakeholders (Gotschall, 2016). In

this case, a position paper is appropriate to address the problem of this study because it provides recommendations for successfully implementing blended learning.

Professional Development

Effective professional development is critical for the implementation of blended learning. Teachers typically need to complete professional development regularly to keep their teaching license active (Puhala, 2020). In the review of professional literature, I encountered several components of effective professional development including strategies for designing professional development, the time needed to learn and practice new topics, and implementation.

Designing Professional Development

To design effective professional development, it is important to assess the needs of teachers (Cook et al., 2017; Goyette & Juarez, 2018; Howell et al., 2021; Lockee, 2021; Puhala, 2020; Philipsen et al., 2019). After interviewing elementary teachers in a qualitative study, Puhala (2020) recommended that school administrators begin the process of designing professional development by identifying teacher needs in implementing instructional best practices. Howell et al. (2021) used a survey as part of a formative experiment to identify elementary teacher needs prior to designing professional development. In a systematic review of studies on professional development for blended learning, Philipsen et al. (2019) found that administrators should identify and acknowledge existing knowledge and use of blended learning among teachers. Smith et al. (2020) recommended team collaboration, authentic learning, peer reflection, and feedback as considerations for designing professional development in a longitudinal

qualitative study investigating the impact of professional development on teachers. Trust and autonomy are also key factors in designing effective professional development. Goyette and Juarez (2018) stated that it is important to trust educators to make professional decisions that are best for students. Other considerations for the design of quality professional development include providing clear expectations (An, 2021; Puhala, 2020) and fostering intrinsic motivation (Goyette & Juarez, 2018).

Time Needed for Implementation

Time is an important factor to consider when implementing quality professional development. When professional development is presented in isolation or in lecture format, teachers rarely gain the resources and strategies to implement the practice being taught (Goyette & Juarez, 2018; Howell et al., 2021; Sales et al., 2017). In a multiple case study on perceptions of teachers participating in a 1-year peer coaching model, Ottenbreit-Leftwich et al. (2020) and Love et al. (2020) stated that school leaders should design professional development that is repeated and ongoing because single, one-time workshops are ineffective. Time must be provided for teachers to practice, plan, collaborate, and reflect (Howell et al., 2021). In a review of professional learning networks as a form of professional development, Cook et al. (2017) stressed the importance of providing teachers with time to collaborate and reflect. Teachers need time to learn a new tool and time to plan how to best incorporate it into the classroom (Brown, 2019). Smith et al. (2020) recommended that professional development be ongoing with time for teachers to practice what they learned. Professional learning cannot be rushed and requires consistent and dedicated time (Niehoff, 2019).

Implementation of Professional Development

Several researchers offered suggestions for implementing professional development. Niehoff (2019) recommended providing digital learning opportunities. These are typically video-based and offer a variety of topics so teachers can choose lessons that are relevant to improving their practice (Beilstein et al., 2021; Morrison, 2019; Ng & Park, 2021). Morrison (2019) described a gamification concept where educators choose their learning path and move through various levels of learning to earn badges. In a qualitative study examining the implementation of technology devices, Varier et al. (2017) found that peer-led professional development, professional learning networks, and peer observations were effective ways to deliver professional development. In a study comparing virtual professional development to face-to-face professional development, Schumaker et al. (2020) found that there was no significant difference in teachers' learning in either group.

Technology Coaches

The use of technology coaches offers a solution to the problem of helping teachers effectively use blended learning. Brown (2019) defined a technology coach as a colleague who helps teachers look at content, standards, and learning goals to design lessons using technology. The review of literature revealed benefits of technology coaches, strategies for implementing technology coaches, technology coaches as part of successful professional development, and presented some challenges of technology coaches.

Benefits of Technology Coaches

According to Brown (2019), technology coaches emphasize a balance of looking at standards and objectives and then finding ways that technology can enhance the skills being taught. In study surveying 150 technology coaches, Rebora (2021) found that one benefit of technology coaches is that they support schools in creating and implementing the digital learning plan for students. In terms of blended learning, technology coaches can benefit teachers by providing support such as providing professional development, assisting with designing lessons using technology, and modeling lessons for teachers. Rebora found that technology coaches provided essential support in implementing blended learning platforms and the use of educational technology tools. In a design-based study involving 20 prospective teachers, Ng and Park (2021) found that other benefits of technology coaches include individualized learning by providing feedback on lessons and facilitating collaborative reflections. According to Mann Jackson (2020), technology coaches benefit schools by constantly taking the pulse of the building's culture, student achievement, and teachers' professional learning needs.

Implementation of Technology Coaching

One goal of using technology coaches is to help classroom teachers individualize learning for students (Brown, 2019). This goal is often achieved through blended learning. Mann Jackson (2020) recommended hiring technology coaches to help overwhelmed teachers incorporate blended learning and foster innovation with technology tools to implement blended learning. Wayne and Cogshall (2022) compared the effectiveness of developer-led professional development to the effectiveness of

professional development delivered by in-house technology coaches. The authors found

that it is important for schools to specify the goals of technology coaches and provide

instruction on how to meet those goals. One way to monitor coaching to ensure success is

to use a form to provide feedback and allow for reflection between teachers and coaches

(Wayne & Cogshall, 2022). Brown (2019) recommended that technology coaches help

teachers to look at the verb in each learning standard then find a technology tool that will

facilitate that outcome.

Technology Coaches Used in Professional Development

In terms of technology coaching as a form of professional development, Rebora

(2021) stated that coaches play an integral role in teacher professional learning. Clark et

al. (2018) recommended using technology coaches to provide personalized professional

development. Clark et al. interviewed and observed elementary teachers to examine one

to one professional development using technology coaches. Coaching allows teachers to

be observed and receive feedback in a nonevaluative way that fosters learning (Clark et

al., 2018). Niehoff (2019) stated that using in-house technology coaches is one of the

most effective forms of professional development.

Challenges of Technology Coaching

In a multiple case study on teachers' perception of a 1-year coaching model,

Ottenbreit-Leftwich et al. (2020) shared several challenges of technology coaching such

as difficulty for teachers and coaches to find time to meet and lack of time for teachers to

implement the recommendations from coaches. Other challenges include technology

issues, coaches reporting that teachers are unwilling to collaborate, and teachers and

coaches presenting differing ideas of how to implement technology (Ottenbreit-Leftwich, et al., 2020). Clark et al. (2018) stated that coaching only works with teachers who are open to change and receptive to feedback.

Summary

The purpose of the literature review in this section was to support the recommendations I make to the local district. Based on the findings of the study, the teachers in the local district would benefit from professional development in the form of training and the implementation of technology coaches. The literature is clear on the need for time and support when successfully implementing blended learning. The literature affirms that professional development should meet the needs of teachers, provide time for practice and reflection, and suggests methods for delivering the professional development. The literature on technology coaches included benefits of technology coaches, implementation of technology coaches, and challenges of technology coaching. In the following sections, I describe the project and the plan evaluation.

Project Description

I organized the findings from the study into three themes: the *transition, the benefits*, and *the challenges of blended learning*. To address the findings from the qualitative study, I determined there were two recommendations I would make to the district, to improve the implementation of blended learning in the local district. I chose a position paper as the format for the project that will be presented to the local district. Position papers are an effective way to present a solution to a problem to a specific audience. This position paper will address the findings of this study as it relates to the

school district by making recommendations to district leaders about using professional development and technology coaching to successfully transition to blended learning. The local problem in this study was the ineffective use of technology by teachers in the district. There are two recommendations within this project that may support teachers in the effective use of technology with blended learning: providing professional development training for teachers and implementing technology coaches.

Necessary Resources and Existing Supports

To implement the suggestions in the position paper, the district will need to provide time for teachers to collaborate, learn about blended learning, and develop lessons for blended learning. Additionally, the district will need to create and fill technology coach positions within the schools. The teachers in the district who have experience with blended learning are also existing supports for this process and will be natural candidates for the technology coach positions.

Potential Barriers and Potential Solutions to Barriers

A potential barrier to implementing the professional development and technology coaches is a lack of time for training, collaboration, and lesson planning. One way for the district to solve the problem of time is to use some of the existing professional development days for teacher collaboration and planning instead of the isolated training sessions currently offered. The district could also compensate teachers monetarily for collaborating and planning outside of contracted hours. Another potential barrier is the budget implications of hiring technology coaches. The district could examine the technology funding provided to schools to determine if full or part-time technology

coaches could be encumbered into the current budget. There are also nonprofit foundations provide grants to schools to bring effective 21st-century learning into classrooms.

Proposal for Implementation

Ideally, the paper will be presented over the summer before the district creates a plan for the days allocated for professional learning. I will request a meeting with district leadership to present the recommendations prior to July 1. I will suggest that the professional development take place over the course of the school year on portions of the 10 days allotted for this purpose throughout the school year with a recommendation to reassess the needs for professional development at the end of the year. Similarly, I will recommend that the technology coaching positions be implemented at the start of the school year and remain in place throughout the year with the option to continue the following school year if necessary.

Roles and Responsibilities

The goal I have for this project is to help the district leadership understand the experiences of teachers currently using blended learning and to present recommendations for professional development and the use of technology coaches to help local teachers implement blended learning. My role included contacting district leadership to determine the best time and location to present the paper. It will be the responsibility of the district leadership to provide a time and location for the presentation and decide whether they will implement the recommendations. Both recommendations fall under the purview of district leadership, and it will be their decision as to whether to implement them.

Project Evaluation Plan

Type of Evaluation and Justification

   The project for this study is a position paper in which the research and project are presented in terms of making recommendations for implementing blended learning. There are multiple options for evaluating an initiative such as professional development and the addition of technology coaches. Primarily, the project will be successful if district leadership accepts and acts on either or both recommendations, I have presented in the position paper (Appendix A). I will informally evaluate the effectiveness of my project by the reaction and dialogue with district leadership.

   For each recommendation, I will assess those elements with multiple approaches. This evaluation plan is primarily goal-based. I chose this based on the desired goals of implementing professional development and technology coaches to foster the use of blended learning. If either of the recommendations are implemented, then the goal will be met. Specific to professional development, formative assessment is appropriate. By collecting surveys and feedback after each session, district leaders will formatively assess if the professional development offered was well-received and perceived as effective. For summative assessment, leaders will add a blended learning check-in to the walk-through process.

   Assessing the goal of adding technology coaches to the schools will also be assessed formatively and summatively. Formatively, leaders will gather feedback on the perceived effectiveness of the coaching provided. To gain a clearer picture of the

summative effects of blended learning, leaders will gauge student progress and teacher satisfaction with classroom walk-throughs, focus groups of teachers, or surveys.

Overall Goals of the Project and Evaluation Goals

My overall goal is to present the research, findings, and recommendations to the district leadership. I recommend the implementation of a professional development plan and technology coaching program. The evaluation goal is to gather feedback about both innovations via discussion, conference, survey, or checklist to determine if the recommendations are well received Each recommendation requires both formative and summative evaluations with teachers and coaches providing feedback; either written or through focus groups, about the perceived effectiveness of the professional development and the technology coaches' work. Ultimately, increased student success is the ultimate, summative assessment of whether improved blended learning improved learning outcomes for students. State-level assessment data will determine if student achievement increases over time.

Key Stakeholders

The key stakeholders in this project are district leaders such as the superintendent, assistant superintendent, and curriculum directors. The teachers who participated in the professional development and are implementing new strategies are key stakeholders as are the technology coaches providing feedback and guidance on blended learning. The final, and most important stakeholders are the students themselves, who may benefit from receiving instruction through blended learning are key stakeholders.

Project Implications

This project has the potential to stimulate social change. By providing district leadership with the findings of the study and project recommendations, the project may support district and school leaders in providing teachers with the training and support to successfully implement blended learning. The project is important to local stakeholders because district leadership has the goal of teachers using technology to enhance student learning (Urban School District in Northeastern U.S., 2017). Professional development for blended learning would support this district goal. It is important to teachers because teachers want to use technology effectively and want their students to learn using technology. It is important to the community because the goal of education is to prepare students to function in society and the research in this study indicates that blended learning fosters that goal.

Conclusion

The project designed on the results of this case study is a position paper explaining the local problem and results of the study. The position paper includes recommendations based on the results of the study and the review of current literature. In Section 3, I outlined the project and provided a literature review relevant to the findings. I also described the project, provided a plan for evaluating the project, and described the implications of the project. In Section 4, I discuss the strengths and limitations of the position paper, recommendations for alternative approaches to conduct the study, and a reflective analysis of personal growth experienced because of this study.

Section 4: Reflections and Conclusions

In Section 4, I present strengths and limitations of the project resulting from the qualitative study which explored the perceptions of elementary teachers experienced with blended learning. This section includes an analysis of myself as a scholar and developer of the project. My experiences with project development, scholarship, and leadership are presented in this section. Additionally, I share my reflections on the significance of what I learned, the importance of the work, and implications for future research.

Project Strengths and Limitations

The project for this study is a position paper that contains recommendations for specific professional development and the hiring of technology coaches for teachers to learn how to implement blended learning. Through professional development, teachers will learn strategies for using blended learning and have time to reflect and collaborate with peers. Technology coaches will provide support and help teachers plan blended learning lessons. Recommendations presented in the position paper will address the problem of teachers not using blended learning.

One significant strength of this project comes from the collection of data through individual interviews with teachers experienced with using blended learning. The strength is in the firsthand, personal experiences provided by elementary teachers. My selection of a position paper was based on findings drawn from the interviews that revealed the need for professional development and technology coaches so that teachers in the local district can learn how to use blended learning.

Another strength of this position paper is its potential to influence district leadership in implementing a professional development program and technology coaching program that will provide teachers with the training they need to meet district and school goals using blended learning. Through the review of current literature and analysis of interview data, I learned of the benefits of blended learning including the development of critical thinking skills, increased student learning, and the ability to provide individualized instruction. The position paper provides an opportunity to bring these benefits to the students in the district.

Although the position paper has strengths, it also has limitations. The main limitations of the recommendations in the position paper are time and budget. The district will need to find time to train teachers and provide time for teachers and coaches to plan and collaborate. In the project, I provide some solutions to this limitation such as allowing teachers to plan and collaborate on the existing professional development days instead of providing direct-instruction style training sessions on those days. Another solution may be to pay teachers for meeting and collaborating outside of their contracted hours. Depending on how staff positions are allocated each year, there may be budget implications for hiring technology coaches.

Recommendations for Alternative Approaches

A case study was necessary to explore the perceptions of elementary teachers experienced with blended learning. Participants were recruited via social media and purposeful sampling was used to ensure that participants met the criteria to participate. Interviews were arranged with consenting participants. An alternative approach I could

have taken for the study would be to observe teachers in addition to the interviews.

Observations of the teachers using blended learning would have allowed me to see the

use of blended learning and interactions among the elements of the framework (i.e.

teachers, learners, etc.) firsthand. Alternatively, I could have used a large-scale survey, to

find commonalities about how blended learning is implemented in other districts. This

approach may extend the findings of the study.

An alternative approach to the project to address the findings from the study

would be to develop a professional development plan for blended learning. Participants

expressed a need for effective training. A professional development plan for the district to

train teachers would be a way for teachers to learn how to use blended learning.

Another project approach to address the findings would be to develop a

curriculum plan using blended learning. Participants described how they used blended

learning while following existing curriculum plans. Integrating a blended learning

component into existing curriculum plans in the district would address the problem by

showing teachers how and when to use blended learning.

Scholarship, Project Development and Evaluation, and Leadership and Change

Throughout my journey in the doctoral program at Walden university, I have

received many lessons on scholarship, leadership, and enacting change. The capstone

courses required weekly assignments and discussions and prepared me for the rigor of the

project study. Completion of the project study has taught me about the research process,

how to conduct unbiased, authentic research, and how to be a conscientious consumer of

scholarly literature. Most importantly, this process has fostered a determination to accomplish my professional goals and a deeper level of perseverance.

Through the development of the project, I have experienced growth as a scholar, teacher, and project developer. In public education, collection of data typically focuses on test scores and other quantitative data. The study I completed for my doctoral program taught me to also value qualitative data. The rich data gathered through interviews provided important insights from participants that may drive change in how instruction is delivered in my district.

Skills I learned through research and project development have improved my practice as an intervention specialist. Most importantly, I have learned to consider qualitative data in addition to the quantitative data I previously focused on. I have become more reflective and thoughtful regarding data, discussions with colleagues, and receiving feedback. I have become a better writer and improved my ability to express data analysis in team meetings.

As a school leader, my goal is often to enact change in the form of improving test scores, increasing student learning, and offering support to the staff I serve. As a result of completing my doctoral study, I now view these goals through the lens of enacting social change and pushing the goals to impact students, families, and the community in which I teach. I have also learned to rely on others to accomplish these goals of change. I am more open to accepting criticism, asking for help, and listening to the needs of others.

Reflection on Importance of the Work

The Doctor of Education Program at Walden University has taught me about myself as a teacher, a student, a researcher, a leader, and an agent of change. Each step of this process had challenges. During the coursework, I learned to be a critical learner and to have scholarly discourse with colleagues. The proposal stage taught me how to write in APA format and how to systematically design a study. Through the research process, I have learned how to collect and analyze data. During each step, I have learned to reflect on my work, accept feedback, and manage my time. I have learned to be purposeful with my writing, to edit, and to pay attention to my style. In the past, I had difficulty accepting critical feedback. I now welcome it and look forward to my work being reviewed so I can receive advice on improving.

Researching and analyzing data have become a frequent part of my role as an intervention specialist in an elementary school. Questioning data and using data to answer questions have become common practices. This process has made me a critical thinker when analyzing classroom data. I have learned how to recognize a reliable source and valid study when completing research.

I began this process in 2014. At times, I had to move very slowly, often for reasons outside of my control. While I learned to persevere and manage my time efficiently, I also learned to give myself grace when I encountered a setback. The most challenging obstacle I faced was the COVID-19 pandemic, which began as I was beginning to conduct my research. During this time, many schools were closed, and teachers were learning to work remotely. I had a difficult time finding participants

because many teachers were overwhelmed and did not want to volunteer for my study. With the help of my advisor, I was able to find alternative ways to complete my research. This taught me to be flexible and advocate for myself. These are all skills that have transferred to my role as an intervention specialist.

Implications, Applications, and Directions for Future Research

As a result of this project study, I have found that data produced during research provides rich insight into blended learning, has the potential to enact positive social change, and the implications for social change do not exceed the study boundaries. This study involved investigating elementary teachers' experiences with blended learning. Through the results of the study, I was able to make informed recommendations for the school district to implement professional development on blended learning and a technology coaching program. By providing training on blended learning, the district will empower teachers to use this important instructional strategy. This project has the potential to positively affect the teachers, students, and school community. The review of professional literature and results of the study provide detailed examples of the beneficial implications of blended learning. Providing individualized instruction and being able to facilitate learning can benefit teachers. Increased student learning and increased student achievement will benefit the students. The development of 21st-century skills such as critical thinking, collaboration, problem-solving, and communication have the potential to positively impact society by helping students become adults who are capable of positively contributing to society.

In the position paper, I made two recommendations for the application of blended learning. The first is to provide professional development for teachers to learn how to use blended learning. The second is to use technology coaching to provide feedback, lesson suggestions, and support to teachers as they begin using blended learning. The recommendations for professional development and technology coaching are to take place over the course of at least one school year, beginning in the summer. The recommendation that teachers use blended learning is ongoing. For future research, I would like to repeat the study including teachers in grades K-2 and 6-8 to gain further insight into the beliefs and practices of teachers in other grade levels. To further the research on this study, I recommend conducting interviews with teachers throughout the professional development and technology coaching period to obtain feedback and adjust the plan accordingly. Additionally, I recommend interviewing teachers after a year of practicing blended learning to investigate the program's success.

Conclusion

For my capstone project study, I identified a problem in my school district, conducted a literature review of peer-reviewed articles, designed a qualitative study, recruited participants, collected data, analyzed the data, and made recommendations for my school district to solve the problem. The recommendations have the potential to improve teaching and learning for the teachers and students in my district. The process of completing the doctoral program at Walden has been a meaningful and rewarding experience. In addition to acquiring research and writing skills, I have gained confidence in my ability to evaluate a problem in my district and make recommendations to improve

learning for our teachers and students. It is empowering to know that I am an agent of

change in my community.

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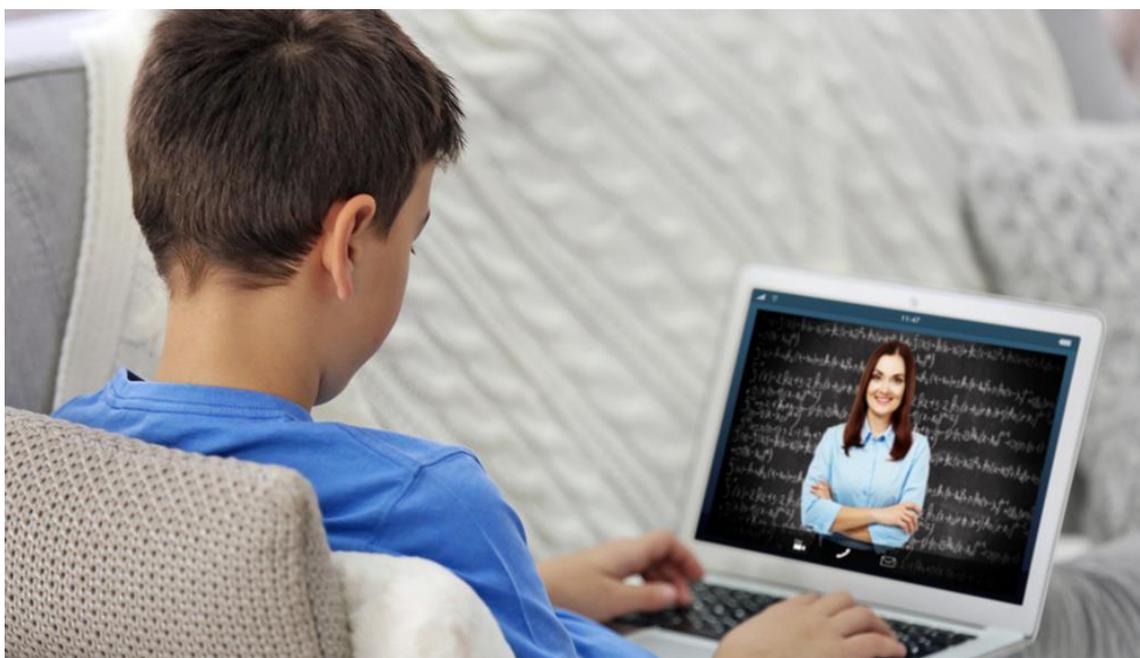
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Appendix A: The Project

Recommendations for the Implementation of Blended Learning
By
Sarah Cummings

Introduction

Blended learning is a cohesive learning experience in which the student learns partially online and partially in a traditional school building and has some choice regarding pace and content (Clayton Christenson Institute for Disruptive Innovation, 2022). This important approach to teaching and learning can be a struggle for some teachers. In one high-poverty urban district in the Northeastern U.S., the district has purchased Chromebooks, iPads, and other devices for students and teachers to better address the learning needs of students. The district lists using technology to improve student achievement and engagement among its school improvement goals (Urban

School District in Northeastern U.S., 2017). However, the problem is that teachers are not

using blended learning to reach this goal because the district does not provide strong

guidance for implementing technology (elementary principal, personal communication,

July, 2016).

At faculty meetings, teachers and school leaders expressed frustration the iPads

and laptops were not being used consistently or effectively by students. To address this

problem, a study was conducted in which I interviewed teachers who have experience

using blended learning to find common elements that are needed to implement

technology in classrooms more effectively. In the next sections, I describe the problem

and the study in detail.

The Local Problem

The problem in the district is that elementary teachers are not using blended

learning to increase student engagement and improve higher-order thinking skills (Urban

School District in Northeastern U.S., 2017). The Strategic Framework for School

Improvement stated that instruction will be individualized to meet student needs, improve

student learning, and increase engagement by implementing technology (Urban School

District in Northeastern U.S., 2017). Teachers have access to tools for integrating

technology but expressed frustration that they are not given professional development or

direction on how to implement them to meet student needs. Technology tools such as

iPads and laptops are bought by the building principals for individual classrooms or

teachers, in varying quantities ranging from one per class to class sets (Urban School

District in Northeastern U.S., 2017). In a district with twenty-one schools, the type and

quantity of technology devices available to teachers and students is greatly at the discretion of each principal and varies by classroom and building. However, principals are unable to choose and implement the type of training teachers receive for using the technology. Professional development is most often decided by central administrators and rarely by building administrators (elementary principal, personal communication, July, 2016). As a result, training is often based on whole district needs rather than individual school or teacher needs so specific technology training needs are often unmet (director of technology, personal communication, August, 2017). The study was developed to investigate the beliefs and experiences of teachers using blended learning in other districts.

Research Study

I conducted a qualitative study to explore the experiences elementary teachers had with implementing blended learning. I recruited participants through social media and asked that teachers who effectively use blended learning volunteer to be interviewed. I used semi-structured interviews to ask about their experiences and how elementary teachers successfully use blended learning.

Through the study, I investigated the beliefs and practices of elementary teachers currently using blended learning. I developed interview questions using the complex adaptive blended learning system (CABLS) framework and research questions. I used social media to recruit participants who met the criteria of being a teacher in grades 3-5 and having experience with blended learning. The participants gave consent to be a part of the study and interviews were conducted in person, on Zoom, and over the phone.

I asked the teachers who participated questions based on their beliefs, practices, and experiences using blended learning. I focused on two research questions:

RQ1 What are third through fifth-grade elementary teacher experiences implementing and using the blended learning teaching approach?

RQ2 What are third through fifth-grade elementary teacher beliefs and practices regarding the interaction of the elements of blended learning (the teacher, the learner, the content, the technology, learning support, and the institution)?

In order to examine the elements of successful blended learning, I used the elements from the Complex Adaptive Learning System (CABLS). The transition from traditional teaching to a blended learning environment requires teachers to change their perceptions and behaviors. The CABLS framework describes this change in perception through six elements of blended learning. The six elements included in the CABLS framework are Learner, Teacher, Content, Technology, Learning support, and Institution. Wang et al. (2015) provided descriptions for the six elements:

- Learner - transitions from a passive learner to an active learner as he or she interacts with the other elements.

- Teacher - changes from lecturer to facilitator

- Content - rich and engaging as it is constantly interacting with the learner, the teacher, and the technology

- Technology - advances in technology provide a push to blended learning while meeting the needs of the teacher and the learner

- Learning Support - develops to meet the needs of the learner, either in the form of academic support or technological support

- Institution - exemplifies the need for support across the institution including strategies, plans, and policies

The CABLS framework combines these elements and interactions among them. These combinations help establish a deeper understanding of blended learning. The framework states that blended learning is complex, adaptive, dynamic, self-organizing, and co-evolving (Wang et al.). The CABLS framework provides a holistic and systematic view of blended learning while defining the ways in which the elements interact with each other. The framework provides a foundation for the research questions, data collection, and data analysis conducted in this study.

Data Collection

Data collection for the study I conducted consisted of interviews with nine teachers who volunteered to participate. I developed the interview questions which focused on participants' beliefs and experiences. These questions were carefully aligned with the research questions and CABLS framework. The interviews took place over 6 weeks and lasted 30-60 minutes. After I transcribed the interviews, I used open coding on each participant's responses to the interview questions. I coded each interview and grouped common codes into categories which helped me develop themes. Participants spoke about their experiences with transitioning to blended learning, the benefits of blended learning, and the challenges of implementing blended learning. During this

coding process, I developed 43 codes, which were organized into nine categories. These

categories were carefully examined and grouped to form three themes.

Research Findings

Data from the interview transcripts were analyzed to identify emergent themes. I

used open coding—a process that involved grouping interview responses into codes and

categories (Saldana, 2008)—to analyze the data. I identified three major themes.

Theme 1: Transition to Blended Learning

The theme of transitioning to blended

learning was evident in the data. All

nine participants spoke about the

process of transitioning to blended

Theme 1: Transition to Blended Learning
Theme 2: Benefits of Blended Learning
Theme 3: Challenges of Blended Learning

learning. In the participants' reflection on transitioning to blended learning, they

indicated that the approach, motivation, learning applications/platforms, training, and

experience were key to their success. Additionally, participants indicated that all six

elements of the CABLS framework were relevant to a successful transition.

When asked about the process of beginning to use blended learning, the

participants described their approach. One participant described how she started with the

geometry unit of her fourth-grade math curriculum and created video lessons. The

students watched the videos during a time when she would work with small groups to

remediate skills they were struggling with. The next year, she created videos for other

math topics until her entire curriculum was taught by these learning videos. Several

participants recommended this process for transitioning to blended learning: starting small and developing lessons for one topic at a time.

Participants described their motivation for switching to blended learning. One participant made the transition due to a lack of time to teach all the math standards before the end of the year test. Creating video lessons for some of the standards allowed students to learn them at their own pace and practice the skills with her in small groups. This allowed her to ensure the students were prepared for state testing.

Several participants spoke about the implementation of learning programs such as Lexia and Dreambox as the start of their transition to blended learning. When their districts implemented these individualized learning programs, it was a natural time to start using blended learning. Students were required to use the programs for a certain number of minutes each day and teachers started digitizing other content for students to learn online.

When asked about training for blended learning, participants shared that the training they received was inadequate and did not meet their needs. They stated that they learned how to use blended learning through experience and would have benefitted from professional development in which they learned by collaborating with other teachers. One participant shared that she received training for Lexia but it did not go deep enough and she needed more time to practice using the program.

Theme 2: Benefits of Blended Learning

.The benefits of blended learning were described by all participants and was a clear theme of the data. The participants described individualized instruction, skill development, and a positive learning environment as key benefits of blended learning. Overall, participants felt that using blended learning was a positive experience. Throughout the interviews, participants described the benefits of blended learning. It was clear that the participants largely felt that blended learning was a positive experience. All nine participants spoke about individualized instruction as a benefit of blended learning. The participants spoke about blended learning providing the opportunity for students to develop skills such as collaboration, communication, creativity, and critical thinking. Six participants described the classroom environment as becoming a community of learners in which students support each other, and teachers and students work together.

Theme 3: Challenges of Blended Learning

The participants described the challenges of blended learning in their responses to the interview questions. Issues with technology and lack of support from the administration were among the challenges faced by participants. Six participants stated that the biggest challenge to effective blended learning is troubleshooting technology. Examples of this include lack of outlets for keeping devices charged during use, learning programs not working properly, and slow internet connections. These obstacles made it difficult for the participants to use blended learning consistently. Three participants shared stories in which issues with technology created stressful situations they were not able to immediately resolve. One participant described a situation in which she assigned

her students learning videos from a bank of videos provided by the textbook company. She assigned videos based on various levels based on student needs. None of the videos played on the student's devices despite playing normally on her device. She realized there was a firewall blocking the website on the student devices. She stated that the situation was very stressful, and she quickly lost control of the class. She later requested that the firewall be removed from the curriculum provider's website, but her request was denied.

<div align="center">

Recommendations

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Based on the findings from the interviews with teachers who currently use blended learning, I have made two recommendations to improve the use of technology in the district and provide more blended learning to address the learning needs of students for 21st-century learning.

> **Recommendations:**
> - **Provide professional development training on blended learning for elementary teachers**
> - **Provide technology coaches to help teachers use blended learning**

Recommendation 1: Provide Professional Development

The first recommendation is to provide professional development training on blended learning for all elementary teachers. I recommend that the district develop and implement a professional development program for elementary teachers to learn how to use blended learning as an instructional strategy. The district provides ten days of professional development for teachers each year. The training provided is often presented in isolation, with one topic per day, differs by school, and often fails to make connections to teachers' practice or meet teachers' needs. This type of training can be ineffective

(Goyette & Juarez, 2018). The recommended professional development plan will be ongoing, meet the needs of the teachers in each school, and provide opportunities for collaboration and reflection. Most participants in the study (78%) reported that the one-shot training they had received for blended learning was not helpful and that they learned how to use blended learning through ongoing practice and collaborating with other teachers.

The recommended professional development program will equip teachers with the skills to effectively use blended learning based on the results of the study and the review of professional literature. The recommended first step is to begin with a survey to assess the learning needs of teachers. Participants mentioned that the training they received for blended learning was inadequate or did not meet their needs. Participant 2 stated, "We had a three-hour training on Zoom for Lexia (a digital reading program) and that was it. None of us felt prepared for blended learning after that training; it was not what we needed." The recommendation to assess the needs of teachers as a first step to designing professional development was evident in the review of current literature (Cook et al., 2017; Goyette & Juarez, 2018; Howell et al., 2021; Lockee, 2020; Phillipsen et al., 2019; Puhala, 2018).

The type of training provided by the professional development will depend on the assessment of needs. Participants mentioned training for facilitating the digital learning programs, training for managing the blended learning model, and general technology training to fix minor issues as they occur as examples of what teachers in the study felt was needed to be successful at blended learning. The timeline for professional

development should be ongoing (Love et al., 2020). The district should plan for at least

one year with the opportunity to extend further if necessary, based on feedback from

teachers.

In addition to providing training based on teacher needs, I recommend the district

provide teachers with time to collaborate and plan. The participants in the study stated

that finding time to plan, collaborate with other teachers, and develop blended learning

lesson plans was one of the biggest challenges to implementing blended learning. Smith

et al. (2020) recommended collaboration, reflection, and practical learning as part of an

effective professional development plan. This is an example of the recommended

timeline for professional development:

- August- issue a survey before teachers return to identify teacher needs. 2

  PD days for training on blended learning in the morning and time to create

  lessons in the afternoons. Teacher teams will meet weekly to reflect,

  collaborate, and plan together.

- October, November, and December: 1 day each month for teachers to

  share lessons, provide feedback to each other, and develop new blended

  learning lessons. Conduct a needs assessment for further training

- January: 1 day for morning training and collaborative team planning in the

  afternoon

- February, March, and April: One day each month for collaborative team

  planning and individual lesson planning.

- May and June: One day each month to reflect and work on lessons for the next year

Recommendation 2: Provide Technology Coaches

To further strengthen how technology is used to improve student learning, the second recommendation is to provide specifically trained technology coaches to work directly with elementary teachers. My data analysis showed that teachers learned how to use blended learning through experience. Most participants (56%) felt the need to train themselves on various learning programs used in blended learning and 78% stated that they learned best from experience. Participant 1 stated that common planning time and sharing the workload was helpful for her team's transition to blended learning. Technology coaches would help provide training and provide support as teachers learn from experience.

Technology coaches are colleagues who help teachers look at learning goals, content, standards, and available resources to design lessons using technology (Brown, 2019). The use of technology coaches would provide a resource for teachers transitioning to blended learning by providing essential support in implementing learning programs by helping design and model lessons (Rebora, 2021). I recommend that each elementary school create a technology coach position and explicitly state the goals of the coaching program. Wayne and Cogshall (2022) stated that effective coaching programs include clear goals and expectations as well as using a feedback and reflection form to foster dialogue.

The position of technology coach would act as a liaison between building leadership and teachers, provide training, model lessons, provide feedback, troubleshoot issues with technology, and provide support to teachers transitioning to blended learning. The district will need to ensure that coaches and teachers have common planning time to meet, plan blended learning lessons together, and for coaches to provide feedback on lessons. If used effectively technology coaches will help teachers meet school improvement goals by using technology to individualize instruction, improve student learning, and increase student engagement.

Conclusion

Among the goals of the district, one goal is to use technology to improve student achievement and engagement. The district has purchased technology devices for students and teachers without providing guidance on how to use them to achieve the goal. The purpose of the study was to explore how elementary teachers in other districts use blended learning because blended learning can improve student achievement and engagement (Lahullier, 2018). The study's findings indicated a need for training on using blended learning. I used a position paper to summarize the collected data and provide recommendations for developing a professional development program for elementary teachers and implementing technology coaches in elementary schools in order to provide the training needed for using blended learning to meet school improvement goals.

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Appendix B: Study Invitation

Dear Invitee,

My name is Sarah Cummings. I am a doctoral student at Walden University in the Education Department. I am kindly requesting your participation in a doctoral research study that I am conducting titled: Elementary Teacher Perceptions of Blended Learning in the Digital

Classroom. The intention is to examine the perspectives of elementary teachers in Grades 3-5 who were identified as effectively using blended learning, and the interactions among elements of blended learning. I am seeking nine participants for this study. The study involves participating in an interview and allowing me to observe your classroom. Participation is completely voluntary, and you may withdraw from the study at any time. All data collected, including your identity, will be kept confidential. If you would like to participate in the study, please email me at sarah.cummings@waldenu.edu. Your participation in the research will help teachers to have a deeper understanding of blended learning and may lead to enhanced learning for students.

Thank you for your consideration.

Sincerely,

Sarah Cummings

EdD Student at Walden University

Appendix C: Updated Study Invitation

Appendix D: Interview Protocol

Interviewee (pseudonym):
Interviewer: Sarah Cummings
Date of Interview:
Time of Interview:
Location of Interview (pseudonym):

Description of Study:

      This is a qualitative case study of teachers' experiences with blended learning.

You are being requested to participate in a research case study to explore your

perceptions of using blended learning. You were selected to participate in this study due

to your familiarity and knowledge of blended learning.

Your participation in this study is strictly voluntary, and you may decide to withdraw at

any time. There will be no compensation for participating and no penalty for choosing to

withdraw.

      Per your agreement, I will audio record the interview. Your identity and

comments will be kept confidential. You will be provided an opportunity to review my

transcription and provide follow-up feedback.

Interview Questions

1. How long have you been using blended learning?

2. What training for using blended learning did you receive?

3. Describe the transition from traditional instruction to blended learning instruction.

4. Possible follow up: was the transition gradual or quick?

5. What challenges have you faced throughout this process?

I'm interested in the interaction of certain things in the blended learning model. I'm going to ask you several questions in a row about how things interact:

6. How do you interact with the learners while using blended learning?

7. How do you interact with the content?

8. How do you interact with learners that need support while using blended learning?

9. How do you interact with the school's goals and plans while using blended learning?

Now I'm going to ask you a few questions about how the students interact with certain things during blended learning:

10. How do students interact with you during BL?

11. How do they interact with the content during these lessons?

12. How does the learner interact with the technology while using blended learning?

13. How does the learner interact with the learning support while using blended learning?

14. How does the learner interact with the school's plans and goals while using blended learning?

15. What advice do you have for teachers who are beginning the process of implementing blended learning?

Your insight and participation are greatly appreciated. Thank you!

Appendix E: Coding Table

Table 1: Coding Table for Data Analysis by Theme

Theme 1. Transition to blended learning

Categories	Codes	Example
• Applications • Learning videos • Training • Getting started	• Specific applications mentioned • Formative assessments • Transitions • Bank of teacher-made videos • Training for blended learning • Training on specific applications • Start with one lesson • Start with small groups • Group students strategically • Learn by doing • Start slow • Offer office hours • Start with a flipped course • Make a sample student account on platforms • Start with a subject you love • Inquiry learning method • Self trained on various platforms	• Start by creating lesson videos for topic in one subject such as geometry. • Build on that following year by adding digital resources and maybe videos for another math topic such as adding fractions.

Theme 2: Benefits of blended learning

Categories	Codes	Example
• Individualized instruction • 21st-century skills • Learning environment	• Support is built into learning platforms • Teacher is free to interact with students • Peer support • Community of learners • Reciprocal learning • Peer resources for teachers	• Using a teacher made video to present material allows the teacher to be free to redirect, pause and reteach if needed, and to be a resource to students during the lesson.

Theme 3: Challenges of blended learning

Categories	Codes	Example
• Lack of training • Lack of support	• Training for blended learning not helpful • Difficulty with tech • Lack of support from administration • School goals not clear	• Troubleshooting tech issues on the spot is stressful.
Discrepant Codes:	Office hours	

Appendix F: Member Check Form

Date
Dear_____,
 Your participation as an interviewee in the qualitative study to explore teacher
perceptions of blended learning was insightful and appreciated. Enclosed you will find a
brief synopsis of the findings of the study based on an analysis of the comments captured
from your interview and classroom observation. Please review and confirm that the
findings accurately reflect your input. E-mail me at _____ or call me at
_____ should you find the need to add, modify, or delete anything. Also
notify me if there are questions or concerns regarding the findings.
 Thank you for participating in this case study.
Sincerely,
Sarah Cummings