Principals' Perceptions of Changing the Age = Grade Traditional Model of Schooling

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Dedication

This dissertation is dedicated to my family. For three years my husband David and children Delaney, Holden, and Haley have spent many weekends without me being fully present and available to be the wife and mother that they deserve. My parents Sandy and Leroy Burtner and my in-laws Donna and Mike Fuss also pitched in on numerous occasions to help out and care for my little ones when I needed to study or write. While we always kept the focus on the fact that this experience would be invaluable for all of us for the future, there were still innumerable sacrifices made by everyone for me to achieve this goal. For this, I thank each and every one of you and dedicate this work that I am so passionate about to you.

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Abstract

Principals' Perceptions of Changing the Age = Grade Traditional Model of Schooling

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The traditional education system has roots in the colonial and industrial eras, but the purpose of education in today's dynamic and global economy has vastly changed. Schools need to produce creative thinkers and problem solvers. This research reviewed existing literature to explore the intersections of multiage learning, mastery learning, and blended learning in elementary schools. Centered on research questions that examined principals' perceptions of moving to a new model of elementary schooling that breaks down the barriers of age = grade (students placed into classroom because of their age) traditional schooling, this study sought to support the implementation of instructional strategies to meet elementary students' needs in the digital age. A phenomenological qualitative research design was used for the study. Six elementary school principals in schools that have implemented some aspects of multiage learning, mastery learning, and blended learning were interviewed to construct a description of their experience of breaking down the barriers of age = grade traditional elementary schooling. The findings showed that teacher capacity, progression of the curriculum, technology, time/master scheduling, and principal/teacher readiness for change emerged as barriers to moving to a new model of elementary schooling. Many conclusions were revealed in the data, but perhaps the most important was that barriers to changing the age = grade model of elementary schooling are not insurmountable. This study showed that there is a

willingness and eagerness to make changes to the traditional age = grade elementary school model to meet the needs of students in the digital age.

Chapter 1: Introduction to the Research

Introduction to The Problem

Traditional elementary schools in the United States have organized classrooms for students by age for more than a century (Stone, 1996). Students move on to the next grade, not necessarily by mastering material or growing in their social/emotional maturity, but because their age dictates a move to the next level of instruction. This traditional factory model of schooling can be attributed to Horace Mann, who believed students needed to be classified and then taught a specific curriculum, based on being a certain age (Mann, 1970). According to Bacharach, Hasslen, and Anderson (1995), "Graded schools were born out of administrative practicality, rather than any sound educational research base providing support for this structure" (p. 6). Researchers would agree that students do not learn just because they are a certain age, but financial obligations of school districts and mandated standards and curriculum impede moving away from traditional models of schooling to new models that would benefit children of the digital age (Bacharach et al., 1995).

In contrast, in a mastery-learning model, students do not move to a new concept until they have mastered the previous standard. The mastery learning process of feedback, correctives, and enrichment is the closest form of education to one-on-one tutoring that a teacher can accomplish in a classroom environment (Guskey, 1990). Teachers can use this process with students to allow them to learn at their own pace and truly master the instructional concepts they are being taught. Mastery learning is a concept that makes sense for all types of learners but has fallen by the wayside during the No Child Left Behind (NCLB) era of education in which NCLB required students to

complete a set of standards in a given school year and increased emphasis on testing and accountability (Desimone, 2013).

Horn and Fisher (2017) stated, "The blended learning model—the combination of online learning and brick-and-mortar schooling—is not new" (p. 59). Educators have used computers and other technological devices in classrooms for many years. The advances in technology and how to integrate technology effectively in today's classrooms is at issue. Best practices for blended learning are emerging every day (Horn & Fisher, 2017). Tucker (2015) stated that a variety of online tools are available to help students and teachers tailor instruction. Educators can access many of these online tools free of charge to users. Tucker suggested using Khan Academy for videos and practice with mathematics and science concepts. For formative assessments, Tucker suggested using websites like Socrative and Google Forms. Using these tools allowed Tucker to keep track of students' progress and give support to aid individual student needs. Researchers showed that instruction in the digital age does not have to look like it has for more than a century, when students followed the same path through a grammar book; instead, students can work at their own pace using applications and having choice in their learning topics.

Statement of the Problem to Be Researched

Currently, educators continue to put students into classrooms based on their age, despite the realization that most aspects of one's life is not determined by age. Students learn at different paces and the advancement of technology integration in schools can help students be successful at any level. Principals are the instructional leaders in their buildings and often have the ability to make substantial change happen in their schools.

Therefore, this study sought to explore principals' perceptions about implementing a new model of schooling that breaks down the barriers of age = grade traditional schooling to determine best practices for multiage-learning, mastery-learning, and blended-learning environments.

Multiage-learning, mastery-learning, and blended-learning environments show promise for students in the digital age (Tucker, Wycoff, & Green, 2017). This study sought to illustrate how principals have implemented a new model of schooling that breaks down the barriers of age = grade traditional classrooms. Students, teachers, and administrators could benefit from this study because a description of principals' perceptions about their experiences implementing a new model emerged of schooling that breaks down the barriers of age = grade traditional classrooms. Also, this dissertation shares the best practices for multiage-learning, mastery-learning, and blended-learning techniques. Therefore, students could benefit because of the change to instructional programs in schools. Teachers and administrators could benefit from the results reported because they can enjoy the beneficial aspects of multiage learning, mastery learning, and blended learning in classrooms and schools. The challenges and unintended consequences shared provide insight into possible issues that may be challenges when implementing the new model.

Purpose and Significance of the Problem

The purpose of this qualitative phenomenological study is to examine principals' perceptions because perceptions, positive or negative, can impact implementation efforts. Specifically, this research explored the perceptions of elementary school principals when implementing a new model of schooling that breaks down the barriers of the age = grade

traditional model. Principals are critical when it comes to the success of implementation efforts. Analyzing their experience about moving to a new model of schooling will help stakeholders understand the benefits and challenges of this change. This study also identified best practices for multiage learning, mastery learning, and blended learning in elementary schools.

The research problem and subsequent study are significant because study findings can help school districts take the first steps in breaking down the barriers of age = grade traditional schooling. District administrators and principals, seeking ways to help schools move toward a more innovative approach for students in the digital age, can use the information learned in this study. This study also provides districts with recommendations of best practices for multiage learning, mastery learning, and blended learning in elementary schools as well as factors that may enhance or impede principals from taking a step in a new direction.

The grade-level standards established during the NCLB era, mixed with high-stakes testing and accountability measures, inadvertently created a deficit model for traditional schooling in the United States (Desimone, 2013). These standards are geared to the average student of that age/grade level; therefore, if a child does not meet the standard for the school year, in most cases they are moved to the next grade level with a label that they are below standard. The multiage learning model counteracts this and would bring about positive change for student achievement, social growth, and motivation. According to Stone (1996), "The multiage philosophy rejects a deficit model that focuses on what a child doesn't know, rather than on what she does know. This focus on success keeps the child engaged in the learning processes" (p. 3). In a multiage

classroom, educators have no need for retention or labels because children learn at their own pace and are not held to an unattainable standard. Students are measured against themselves as individual learners (Stone, 1996). Retention can have a negative impact on elementary students because children perform better academically in a classroom that they feel is nonthreatening (Gottfried, 2012). Students who have been retained tend to perceive the classroom environment as threatening because they join the classroom with a sense of failure.

Researchers have studied the benefits of multiage learning, mastery learning, and blended learning separately, but a gap persists when considering them together to create a new model of elementary schooling. Elementary schools in the United States are increasingly called on to produce creative thinkers and problem solvers to compete in the dynamic and global economy of the future (Mitra, 2014). However, the traditional model of elementary schooling, with roots in the colonial and industrial eras, does not meet today's standards. Students' learning to collaborate with all ages and types of people is a needed skill in the digital age. According to Hoffman (2002), "What is interesting, and perhaps unique to the multi-age classroom, is how students have learned to accept differences in abilities and social behaviors" (p. 49). Moving to a multiage mastery-based model of schooling in a blended learning environment promises to give students the skills they need to be successful collaborators and problem solvers.

Research Questions

A central question and four sub-questions guided the study:

Central Research Question:

How do principals describe their experience when implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools?

Sub-questions:

1. What factors do principals perceive have helped/hindered them from implementing a new model of elementary schooling that breaks down the barriers of age = grade traditional classrooms?
2. What do principals perceive to be the best practices, challenges, and unintended consequences for multiage learning in elementary schools?
3. What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools?
4. What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?

The Conceptual Framework

Researcher stances and experiential base. The researcher was interested in exploring ways to break down the barriers of age = grade traditional schooling and ways to change instructional practices to meet the needs of students in the digital age. These interests were investigated using a qualitative phenomenological research study where the researcher interviewed six principals over three sessions to glean their perceptions about

changing the traditional model of school and best practices in multiage-learning, mastery-learning, and blended-learning environments in elementary schools.

The researcher is passionate about changing the way educators think about the structure of schooling. Now, and in the future, most pursuits of educators—their jobs, their activities, their likes/dislikes—are not based on a set age. The traditional education system "…has its origins in the colonial and industrial ages and whose purpose, by and large, is to produce identical people. That purpose itself is now obsolete and so, perhaps, is the system" (Mitra, 2014, p. 557). Schools need to produce creative thinkers and problem solvers (Mitra, 2014). One-way to begin is to break down the barriers of age = grade traditional schooling and change instructional practices to meet the needs of students in the digital age. Principals, as instructional leaders, are imperative participants in making sustainable change in a school. Research on the perceptions of principal readiness to make the change or factors that impede change to the traditional model of schooling was the focus of this study.

The topics of multiage learning and mastery learning have come into focus for the researcher because of many personal and professional experiences. The researcher often thought the way that children are compartmentalized into classrooms based on their age is outdated and does not meet the needs of learners in the digital age. The researcher has also seen that students are more motivated to learn when they have choice and are able to use the latest technologies to enhance the presentation of their learning. As Machi and McEvoy (2012) stated, "Introspection narrows the interest through the choice of a particular subject, perspective, and vantage point" (p. 25). Combining these interests has given the researcher a vantage point and encouraged the topic of breaking down the

barriers of age = grade traditional schooling. Being an elementary school principal, the researcher is interested in colleagues' perceptions of the benefits, challenges, and unintended consequences of multiage learning, mastery learning, and blended learning in elementary schools.

Conceptual framework. The three streams for the literature review are multiage learning, mastery learning, and blended learning. Moving to a multiage mastery-based model of schooling in a blended learning environment starting in elementary school will help students attain the skills they need to be successful in the world today and in the future. The literature review will explore the benefits and challenges of multiage, mastery, and blended learning in elementary schools.

Multiage learning. In the first stream, the benefits and challenges of multiage learning will be explored. Multiage learning has occurred in schools across the country since the establishment of the one-room schoolhouse in colonial times (Stone, 1996). One teacher in a single classroom taught students of all ages and instructional levels. Ideas classified as innovative in the current time were common practice in this setting; personalized learning, mastery learning, one-on-one tutoring by same-age and older peers, and mentoring from older students to younger students (Stone, 1996).

Mastery learning. In the second stream, the benefits and challenges of mastery learning will be examined. Mastery learning means a student improves on a topic they are learning until the teacher can say that they have mastered the concept. Pink (2009) stated "mastery [is] the desire to get better and better at something that matters" (p. 109). Mastery learning is not grading an assignment and then the student has completed that

topic; rather, it is correcting the assignment until the student has obtained or exceeded the objectives.

Blended learning. In the third stream, the benefits and challenges of blended learning will be considered. Grant and Basye (2014) defined blended learning:

> For example, a face-to-face discussion can be effective for brainstorming ideas and planning where fast-paced interactions can help students build on and react to each other's ideas. An online discussion, on the other hand, can encourage more thoughtful and thorough responses, where students are expected to develop arguments and provide support for their ideas. (p. 50)

Blended learning can take all students to a new level of learning in the digital age.

After the literature review, the intersections between the three types of learning will be explored to show that they could be combined to create a new model of elementary schooling. These three streams will provide the basis (illustrated in Figure 1) for the qualitative phenomenological research study to describe principals' perceptions of the implementation of a new model of schooling that breaks down the barriers of age = grade traditional classrooms and best practices for multiage learning, mastery learning, and blended learning in elementary schools.

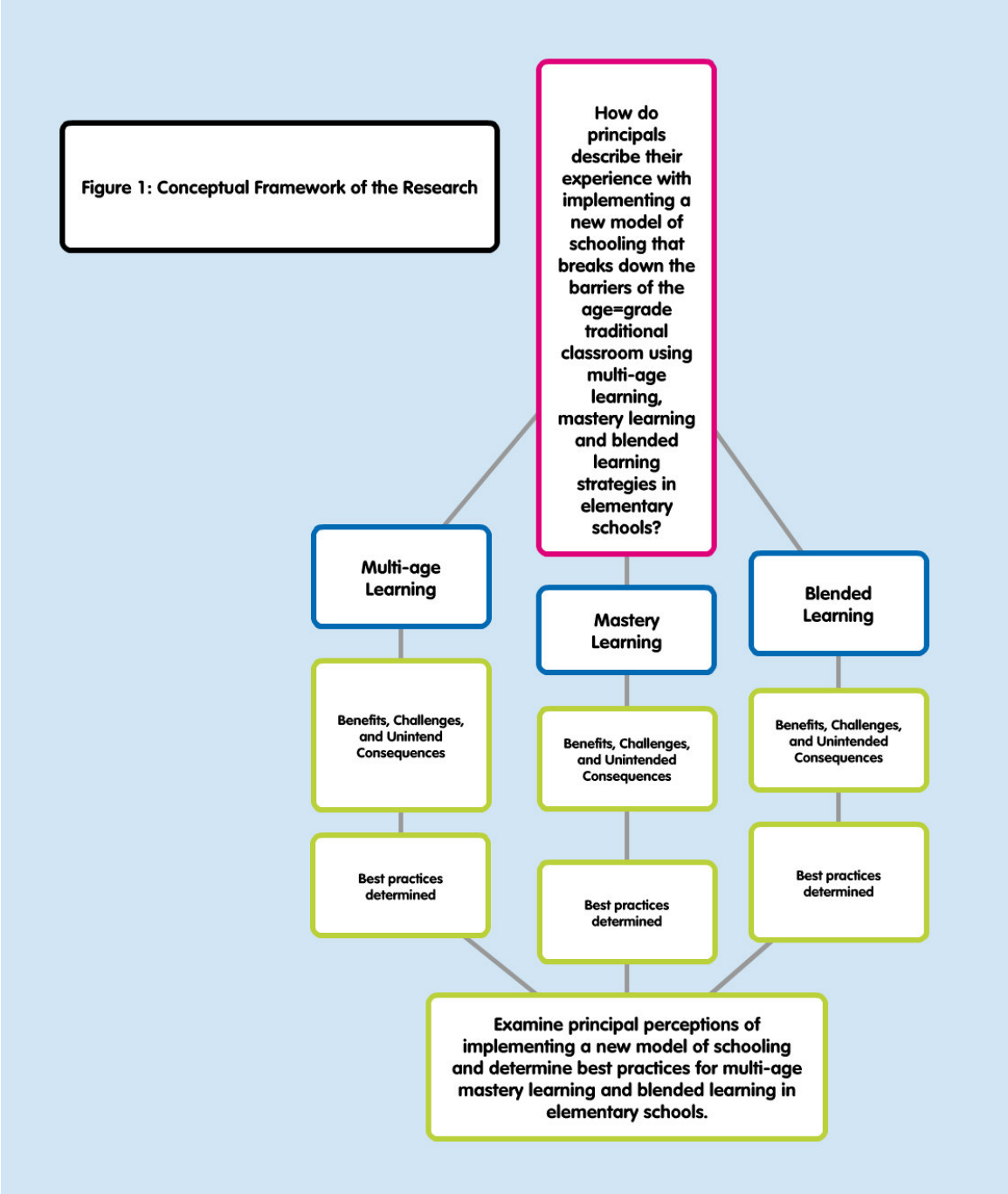

Figure 1. Conceptual framework of the research.

Definition of Terms

- **Age = grade traditional schooling:** the traditional factory model of education in which students are classified and then taught a specific curriculum, based on being a certain age (Mann, 1970).
- **Blended learning:** the combination of online learning and brick and mortar schooling (Horn & Fisher, 2017).
- **Cooperative learning:** a collection of strategies designed to have students work in groups to foster interdependence and cooperation among learners (Bacharach et al., 1995).
- **Flexible grouping:** groupings for students are elastic and based on need, interest, or topic (Stone, 1996).
- **Mastery learning**: the process of feedback, correctives, and enrichment (Guskey, 1990.) Teachers can use this process with students to allow them to learn at their own pace and truly master the instructional concepts being taught.
- **Multiage learning:** the purposeful placement of students more than 1 year apart in the same classroom (Bacharach et al., 1995).
- **Personalized learning:** a diverse variety of education programs, learning experiences, instructional approaches, and academic-support strategies intended to address distinct learning needs, interests, aspirations, or cultural backgrounds of individual students ("Personalized Learning," 2015).

Assumptions and Limitations

Assumptions. This study was based on several assumptions, grounded in the researcher's values and beliefs. First, the researcher believes that the traditional factory model of schooling is outdated and does not meet the needs of students in the digital age. The assumption, therefore, is that a better way exists, based on research, to educate students. Second, the researcher assumes that the principals interviewed for the study were honest about their perceptions of readiness to change the traditional model of schooling. Third, as a participant in a district that has recently adopted a digital-learning plan that includes blended learning, the researcher has an understanding of a blended-learning model in classrooms. The assumption is that best practices for blending learning will be concretely and accurately defined. Finally, because this was a phenomenological study, it is assumed that all participants have similar experiences with blended learning implemented in their schools and have agreed to speak about those experiences with the researcher.

Limitations. This study had several limitations. First, the study focused on principals' perceptions and experiences in elementary schools in a single school district in the northeast region of the United States. Therefore, the results of the study may not be transferrable to secondary schools and districts without access to the same types of technology options for blended learning. Second, the amount of data collected was dependent on those interviewed. The researcher is a principal in the school district; therefore, colleagues' responses varied from being candid and in-depth to trite and brief. Finally, because it was a phenomenological study, the interpretation of the data rests on the researcher's experiences and background.

Before beginning the interview process, the researcher engaged in a bracketing process (as suggested by Moustakas, 1994). The researcher described personal experiences with breaking down the barriers of the age = grade traditional elementary school model and then tried to put those views out of mind while learning about the experience of those who were being interviewed (Creswell & Poth, 2018). This process allowed the researcher to clear the mind and attempt to limit any preconceptions in interview sessions. The researcher also conducted a pilot study to increase the reliability and validity of the study. Seidman (2013) stated "the best advice I ever received as a researcher was to do a pilot of my proposed study" (p. 42). The pilot allowed the researcher to reflect on the interview protocol, questions, and process, and ensure it was appropriate for the study (Seidman, 2013).

Summary

Combining multiage-learning, mastery-learning, and blended-learning best practices shows promise to change the traditional model of schooling used for more than a century in the United States. Providing a new model of elementary schooling that consists of the beneficial aspects of multiage learning, mastery learning, and blended learning could produce elementary students who have the skills to be successful in the world today and in the future.

Principals are the instructional leaders in their buildings and often have the ability to make substantial change in their schools. Therefore, research is needed to examine principals' perceptions about implementing a new model of schooling that breaks down the barriers of age = grade traditional schooling and determines best practices for

multiage-learning, mastery-learning, and blended-learning environments in elementary schools.

The literature review delves into the three streams of multiage learning, mastery learning, and blended learning. The benefits and challenges of each of the three types of learning are explored through the lens of past and current research studies. Best practices of the three streams found in research are shared and intersections between the three types of learning are developed.

Chapter 2: The Literature Review

Educators still put students in classrooms based on age, despite the realization that most aspects of one's life is not determined by age, that students learn at different paces, and that instructional-technology integration has advanced in schools. The traditional education system originated in the colonial and industrial ages. The purpose of the traditional education system was to produce identical people (Mitra, 2014): "That purpose itself is now obsolete and so, perhaps, is the system" (p. 557). Today's schools need to produce creative thinkers and problem solvers (Mitra, 2014). One way to move in that direction is to break down the barriers of age = grade traditional schooling and change instructional practices to meet the needs of students in the digital age.

Research on multiage learning has increased over the last 20 years. Collaborating with all ages and types of people is a skill needed in the digital age. According to Hoffman (2002), "What is interesting, and perhaps unique to the multi-age classroom, is how students have learned to accept differences in abilities and social behaviors" (p. 49). Moving to a multiage mastery-based model of schooling in a blended/personalized learning environment may help give students the skills they need to be successful collaborators and problem solvers.

Traditional elementary schools in the United States have organized classrooms for students by age for more than a century (Stone, 1996). Students move to the next grade not necessarily because they mastered material or grew in their social/emotional maturity but because their age dictates a move to the next level of instruction. Providing a new model of elementary schooling that consists of the beneficial aspects of multiage,

mastery, and blended learning is necessary to produce elementary students who have the skills to be successful in the world today and in the future.

The literature review begins with a background of the research on multiage, mastery and blended learning in elementary schools. In each stream, the benefits and challenges of each type of learning will be presented. Finally, intersections of the three ways of learning are examined to establish the connection, combining the types of learning to possibly create a new model of elementary schooling.

Multiage Learning

Multiage learning has occurred in schools across the country since the establishment of the one-room schoolhouse in colonial times (Stone, 1996). In that model, one teacher in one classroom taught students of all ages and instructional levels. Ideas classified as innovative in the current time were common practice in this setting: personalized learning, mastery learning, one-on-one tutoring by same-age and older peers, and mentoring from older students to younger students (Stone, 1996).

In the world outside of traditional elementary schools, children and adults mix age levels in almost every activity and event that occurs. Children learn from each other and push each other's thinking when the groupings are not based on age (Stone, 1994). According to Stone (1994) "social interaction in mixed-age groupings positively affects all areas of a child's development" (p. 104). Ackoff and Greenberg (2008) stated:

> The same process occurs over and over again in the world at large; this is why it is so important to keep communities multi-aged, and why it is so destructive to learning, and to the development of culture in general, to segregate certain ages (children, old people) from others. (p. 7)

Multiage learning more realistically resembles the interactions in the world outside of schools. Elementary schools need to change the traditional model of schooling to reflect the world "in which the real population of the world resides when not incarcerated in schools" (Ackoff & Greenberg, 2008, p. 9).

Flexible groupings are one way to accomplish multiage learning while still keeping some aspects of a traditional school model. Retaining part of the present model is sometimes more appealing to parents and teachers and can be used as a step toward a new model of schooling. Hoffman (2002) studied flexible groupings in the multiage classroom and shared examples of types of flexible groups. Hoffman explained the purpose of forming groups based on common interests and shared tasks that were not based on the age of the student. The author conducted a study using peer collaboration in a multiage classroom called "Seven Steps to Solving Word Problems." The classroom comprised 45 students who ranged in age from 5 to 8 years old. Hoffman concluded that students are successful in a multiage classroom when the teacher understands the academic and social benefits of flexible grouping. Students working in a collaborative multiage environment are successful, mirroring the typical world outside of the traditional elementary classroom.

Another study on flexible grouping was conducted by Castle, Deniz, and Tortora (2005) to consider flexible groupings as an alternative to ability groupings in a high-needs elementary school. The study took place in a high-needs elementary school of approximately 435 students in Grades Kindergarten through 5 to see if flexible groupings increased achievement in below-grade-level students. The researchers used a mixed-methods study of quantitative and qualitative data to analyze the achievement scores and

perceptions of students and teachers. Results supported the use of flexible groupings to increase achievement for below-grade-level students without the potential negative effects of ability grouping.

Conger (2013) studied the effect of grade placement on English-language learners' (ELLs) academic achievement. Conger examined the effect of placing ELL students in lower grade levels when given the choice between enrolling in two grade levels. The study involved 13,884 ELL students' aged 7–12, enrolled in the Miami-Dade County Public School system from 2003 to 2007. The researcher considered the data from 1,537 students who had been placed in a lower grade and found that students who were enrolled in the lower of two grade levels for their age achieved higher reading and mathematics scores and exited ELL status more quickly than ELL students who were placed in the higher grade level. The Conger study focused on ELL students but relates to the topic of multiage learning. Results showed that students benefit from being placed in a grade level that is lower than their age correlation and directly supported the vision of multiage learning to meet the needs of all students in an elementary classroom (Conger, 2013). ELL students come to a school with a language barrier; placing them in a classroom where they can access more of the language instead of placing them because of their age makes sense and supports student learning.

Hetzel (1996) focused a dissertation study on school-perception data of third- through sixth-grade students who were in single-age groupings and multiage groupings. The study included 131 students, 72% in single-age groupings and 28% in multiage groupings. The study used a survey instrument called the School Attitude Measure to survey students about their perceptions about school. The multiage-group students had a

more positive attitude toward school on all areas surveyed. The multiage-grouped students also had higher academic scores than the single-age-grouped students.

Pardini (2005) studied multiage learning to see why the number of classrooms using the multiage philosophy had declined since NCLB. The prominence of standardized testing and teaching to standards for each grade level was found to be the cause. The multiage proponents Pardini interviewed stated that the benefits of multiage classrooms outweighed the advantages of single-age classrooms because of the emphasis on the whole child instead of the standards to be taught. However, analyzed studies did not show achievement gains in the multiage classrooms. Pardini (2005) stated:

> …but if the link between multiage education and improved student achievement was found to be less than definitive, the approach was shown to foster gains in other areas. Students in multiage settings were found to have higher self-esteem, more positive self-concepts, less anti-social behavior and better attitudes toward school than their peers in single-grade classes. (p. 22)

Hoffman (2003) examined teachers' beliefs and practices in multiage versus single-grade third- through fifth-grade classrooms. The study found that multiage teachers practiced differentiated instruction, flexible grouping, social collaboration, and student choice, and used adaptive curriculum more often than single-grade teachers. Single-grade classroom teachers used an approach with expectations of similarity rather than expectations of diversity; instructional practices focused on the whole group and the same curriculum and assessments for each child (Hoffman, 2003).

In a study conducted by Ong, Allison, and Haladyna (2000) on student achievement of third-grade children in comparable single-age and multiage classrooms,

the researchers found that Title 1 students did not have significant gains in achievement in multiage classrooms versus a single-age classroom. In contrast, they found that non-Title 1 students achieved at higher levels in multiage versus single-age classrooms.

In examining multiage learning further, a dissertation by Baukol (2010) described different effects on student achievement. Baukol considered the effects of multiage instruction on third- and fifth-grade students who had been a part of a multiage classroom for 3 years. The researcher compared 66 students who were taught in multiage classrooms to 276 students who were taught in traditional classrooms. The study found no significant difference in the reading or mathematics scores between the two groups of students. However, Baukol (2010) discerned a more positive social attitude and more leadership skills in the multiage group than the traditional group, according to survey results from parents and students.

Mastery Learning

Mastery learning means a student demonstrates improvement at some subject they are learning until the teacher can say they have mastered the concept. Pink (2009) defined mastery as "the desire to get better and better at something that matters" (p. 109). Mastery learning is not grading an assignment to which the student does not return; rather, it means correcting an assignment until the student has obtained or exceeded the objectives. Munoz and Guskey (2015), in an article on standards-based grading, stated "Reporting must be valid, reliable, fair, and useful; nothing less should be expected if we want to link grading and reporting with students' mastery of content and practice standards" (p. 68). Mastery learning traces back to the work of Bloom as noted by Guskey (1990):

> Drawing on evidence of what takes place under the conditions of one-to-one tutoring and on the learning strategies employed by highly successful students, Bloom proposed a process through which he believed teachers could help nearly all students learn excellently and truly master what had been taught. (p. 34)

Guskey (1990) explained the mastery-learning process of feedback, correctives, and enrichment. Teachers can use this process with students to allow them to learn at their own pace and truly master the instructional concepts being taught.

Many studies have shown the benefits and challenges of mastery learning. Bloom (1987) defined mastery learning as a process of feedback, then correction. To use the process correctly, a teacher should use a learning experience with students every 2 to 3 weeks, followed by a formative assessment. Analyzing four studies in this article, Bloom's analysis revealed more positive results from mastery learning when the measure used with students is a teacher-made assessment instead of a standardized test.

Guskey (2007) analyzed a study conducted by Bloom to show the positive effects of mastery learning on student achievement. The study compared three groups of students: one group of 30 students in a traditional classroom setting and a second group of 30 students who were part of a mastery-learning instructional model. In using the mastery-learning model, students were given an assessment, given feedback, given enrichment or corrections, and then the assessment again. A third group of students took part in a tutoring model where a student was paired with a quality tutor for a personalized learning environment. Students who were tutored scored above the 98% of the control group and students in the mastery-learning environment scored 84% above the control group (Guskey, 2007). Bloom concluded that traditional whole-group instruction does

not meet the needs of most students and mastery learning and tutoring will allow students to achieve greater success.

Lin et al. (2013) conducted a study on the effectiveness of using computer games for remedial mastery learning. The authors designed a Monopoly-type game that incorporated mathematics concepts and found instructional videos that focused on the same concepts. Sixty-six sixth-grade children who needed remedial support to master the mathematics concepts were put into two groups. One group used the instructional videos and one group used the instructional videos and the Monopoly game. A pretest/posttest method yielded data the researchers analyzed. Both instructional videos and the Monopoly game aided in learning but the group with the Monopoly game learned more; thus, using both models was more effective (Lin et al., 2013).

Guskey and Jung (2011) compared the response-to-intervention model of special-education instruction to the mastery-learning model for general elementary education students. The authors suggested that many similarities emerged between the two models, and that the models differed mainly by semantics. Guskey and Jung found that combining the strengths from the two methods would increase student achievement in special education and general education. The assessment, feedback, corrections/enrichment, assessment model of mastery learning has the same format for most response-to-intervention use with students.

Blended Learning

The definition of blended-learning environments can differ, but many agree that "it's generally a mix of individualizing lesson plans, continually assessing and adapting to a student's progress and interests, using technology to provide online lectures, and

creating flexible workspaces" (Conley, 2015, p. 2). Grant and Basye (2014) defined blended learning as follows:

> For example, a face-to-face discussion can be effective for brainstorming ideas and planning where fast-paced interactions can help students build on and react to each other's ideas. An online discussion, on the other hand, can encourage more thoughtful and thorough responses, where students are expected to develop arguments and provide support for their ideas (p. 50).

Blended learning can take all students to a new level of learning in the digital age.

Best practices for blended learning are emerging every day. A variety of online tools help students and teachers tailor instruction (Tucker, 2015). For example, the Khan Academy has for videos and offers practice with mathematics and science concepts. For formative assessments, websites like Socrative and Google Forms allows educators to keep track of students' progress and support individual student needs. In the digital age, educators do not have to have all students follow the same path through a grammar book; instead students can work at their own pace through applications like NoRedInk (Tucker, 2015).

Mitra (2014) compared the philosophy of traditional schooling versus changing the model to a more personalized approach to learning. Over 5 years, using experiential-learning methods, Mitra and colleagues studied a random sample of children in 17 locations throughout India, bringing them the Internet and analyzing the results. Children learned on their own and raised their own level of achievement by studying their interests. The author explained that self-organized learning environments can be used as a primary method of instruction in elementary schools (Mitra, 2014). Many schools that

promote blended/personalized learning incorporate this type of learning into their schedules. Conley (2015) reported on some schools that have blended and personalized learning in their schedule:

> A simple and popular implementation of personalized learning is dedicating time for students to learn about subjects they enjoy. Ralston Middle School seventh-graders work on their "passion projects" once every two weeks; Our Lady of Lourdes students have "genius hour"; and Westside Elementary students work in "enrichment clusters," learning about cooking, robotics, dinosaurs or other off-curriculum topics. (p. 4)

Personalized learning is a way to make gains for students in a way similar to tutoring, but without having to go to a one-teacher/one-student model (Childress & Benson, 2014). Personalized learning challenges traditional school design because each student follows a unique learning path instead of whole-class instruction for large groups. Three school districts have embarked on personalized learning models for their schools: Summit Public Schools, Whittemore Park Middle School, and New York City iZone 360 (Childress & Benson, 2014). The school districts are seeing gains in student achievement from moving to a personalized-learning environment.

Riley (2017) stated that challenges with blended learning have not yet surfaced and go against principles of cognitive science (p. 68). Personalized learning has three common principles:

- Personalized learning involves students having greater control over the content they learn.

- Personalized learning involves students having greater control over the pace at which they learn.
- Personalized learning involves some use of technology to customize learning. (Riley, 2017, p. 69)

According to Riley (2017), no evidence exists that personalized learning works for students. Having students control their own path and choosing what they learn is not a best practice for student learning (Riley, 2017). Riley advocated using technology to enhance instruction, but also advocated for teacher autonomy in delivering content, stating "we need to stop treating technology use and personalization as synonymous" (Riley, 2107, p. 72).

Intersections

Multiage learning, mastery learning, and blended learning are similar in many ways. When combined, a new model of elementary schooling that increases student achievement and motivation may form. Lee (2015) focused a dissertation study on blended learning that proved to have intersections with multiage and mastery learning. Lee found five essential components to personalized learning:

1. Personalized learning plans for each student
2. Competency-based student progress (mastery learning)
3. Criterion-referenced assessment (part of the mastery-learning progression)
4. Problem- or project-based learning (multiage and mastery learning)
5. Multiyear mentoring (multiage learning). (p. 21)

Lee surveyed 272 teachers in 41 different schools and found that English-language arts scores were higher in schools that implemented personalized learning and practiced the

five components than lower performing schools. Lee also found that higher performing school connected practice to the real world in students' personalized learning plans.

Guskey (1990) compared studies on cooperative and mastery learning to show they have commonalities and are effective when used together to increase student achievement. Guskey (1990) found four common threads between the two types of learning: (1) criterion-referenced assessment of student learning, (2) emphasis on the teacher's role as an instructional leader and learning facilitator, (3) flexibility in application, and (4) strong theoretical and research foundations" (p. 36).

Most studies compared in the Guskey (1990) article used a pretest/posttest model to show positive results when using cooperative and mastery learning in the classroom. Many studies showed minimal gains in achievement but concluded that if cooperative and mastery learning were implemented with the four common threads with fidelity, higher gains in student achievement would result. Commonalities between the four common threads and the five best practices of personalized learning connect the two types of learning.

Another strong intersection found in the literature is the need for effective professional development when implementing any of the three types of learning together or separately. Job-embedded professional development in which teachers use the technology that they are expected to use along with collaboration and coaching are key to sustainable practices (Tucker et al., 2017). The collaboration, hands-on learning, ongoing experiences, mindset shifts, and personalization model of professional development for educators aids in implementing a blended-learning approach to instruction in schools:

> The goal of these efforts is to allow teachers to trade places with the blended learner in order to experience the benefits of these practices firsthand, thus becoming the 21st-century learners that we are asking them to help create. This is accomplished by infusing what we call the CHOMP framework—Collaboration, Hands-on learning, Ongoing experiences, Mindset shifts, and Personalization—into professional development. (p. 35)

Teachers learned better from each other and were more apt to say that professional development was effective when they were able to collaborate with peers rather than having professional development that was top-down. Site-based professional-development opportunities were more effective than centralized district-based professional development (Tucker et al., 2017).

Greco (2016) had a similar insight when researching the Critical Friends Group (CFG) as a form of professional development. Professional development was more effective when teachers formed groups to work together themselves rather than being forced to work in a particular group. Greco also confirmed that professional development should be social in nature; CFGs were more effective than workshops or lectures. Consensus and balanced participation in groups led to learning and changes in practice taking place.

Fahey (2012) agreed that CFGs structured around protocols and skilled facilitation are fundamental in authentic professional development. The researcher worked as a facilitator in a group of principals transitioning from a university program to formal leadership positions. The groups became effective after the initial phases and became authentic-learning communities for participants. The use of protocols, especially

the Consultancy Protocol (School Reform Initiative, 2010), brought unique aspects to the group and opened dialogue and shared experiences between the principals (Fahey, 2012).

Guskey (2003) examined the elements that make professional development effective and discern many varying characteristics. Educators seem to always want more time in professional development, but Guskey (2003) found that not all time is equal. Some studies showed that more time for professional development did not amount to increased student achievement. Most educators agree effective professional development requires collaboration, but Guskey (2003) found that educators can hinder moving forward. Collaboration "needs to be structured and purposeful, with efforts guided by clear goals for improving student learning" (Guskey, 2003, p. 748).

DuFour (2012) shared the five components of districts that are effectively implementing professional learning communities (PLCs) in all schools:

- They begin exploring the professional learning community process by building shared knowledge about the rationale for using the process. …
- They build a guiding coalition and disperse leadership responsibility for implementation. …
- They clarify what they expect to see. …
- They focus on developing the capacity of principals to lead the PLC process but also hold them accountable for doing so. …
- They maintain their focus on the PLC process. (pp. 28–29)

The major factor seems to be the solid commitment by the superintendent and school principals to keep PLCs as the central strategy and focus for the district.

Barnes (2014) conducted a study of structured PLCs using the DuFour (2012) model compared with unstructured PLCs and found that unstructured PLCs had higher levels of perceived student engagement than structured PLCs. Kiggins (2015), although a proponent of the DuFour model for PLCs, found that using the PLC model with fidelity did not necessarily increase student achievement in mathematics. The two studies mentioned here align with one of Guskey's (2003) conclusions from an examination of professional development. Seemingly, every school that has higher achievement data than their peers has effective teachers, despite having the same access to the same professional development. Those teachers have managed to find ways to teach students in deep and meaningful ways. Guskey (2003) stated "identifying the practices and strategies of these teachers and sharing them with their colleagues might provide a basis for highly effective professional development within that context" (p. 748).

Summary

The studies included in this review show that multiage flexible groupings can benefit student achievement and social/emotional growth for elementary students. The studies of ELL students and flexible groupings in a high-needs elementary school showed the benefits of multiage learning for students who are not on grade level. One study showed that social/emotional growth emerged in the multiage environment but the increase in academic achievement was not significant.

Studies and articles on mastery learning showed many benefits and challenges to a mastery-learning model of instruction in elementary schools. The studies also show methods used for certain groups of students such as special-education students are already in place in the mastery-learning model and can benefit all students. The study

analyzed by Guskey (2007) but conducted by Bloom (1987) showed that quality tutoring and mastery learning far exceed traditional whole-group instruction in student achievement gains.

The studies and articles on blended learning showed benefits and challenges for blended-learning models in elementary schools. Childress and Benson (2014) stated blended learning is a way to make gains for students in a way similar to tutoring but without having to go to a one-teacher/one-student model. Riley (2017) disagree with this message, averring no evidence exists that personalized learning works for students. Riley argued that having students control their own path and choosing what they learn is not a best practice for student learning.

The intersections between the three types of learning and the importance of effective professional development in implementing change are evident from the studies included in this review. Providing a new model of elementary schooling that consists of the beneficial aspects of multiage learning, mastery learning, and blended learning seemingly could produce elementary students who have the skills to be successful in the world today and in the future. Therefore, research is needed on principals' perceptions of what has helped/hindered them in implementing a new model of elementary schooling that breaks down the barriers of the age = grade traditional classroom and best practices for multiage learning, mastery learning, and blended learning in elementary schools. In the next chapter, the design and methods of the current study will be described and discussed.

Chapter 3: Research Methodology

The traditional factory model of education, referenced as the age = grade traditional model of schooling in this study, can be attributed to Mann (1970), who believed students needed to be classified and then taught a specific curriculum, based on being a certain age. According to Bacharach et al. (1995), "Graded schools were born out of administrative practicality, rather than any sound educational research base providing support for this structure" (p. 6). Researchers would agree that students do not learn just because they are a certain age, but financial obligations of school districts and mandated standards and curriculum impede moving away from traditional models of schooling to new models that would benefit children of the digital age (Bacharach et al., 1995).

Principals are the instructional leaders of their school buildings and sometimes have the ability to make changes to the model and learning strategies used in their schools. It is important to understand from the principal perspective what driving forces might help or hinder implementation of a new model of schooling that breaks down the barriers of the age = grade traditional classroom using multiage-, mastery-, and blended-learning strategies.

The following central question and four sub-questions guided this phenomenological research study:

Central Research Question

How do principals describe their experience when implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional

classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools?

Sub-questions

1. What factors do principals perceive have helped/hindered them from implementing a new model of elementary schooling that breaks down the barriers of age = grade traditional classrooms?
2. What do principals perceive to be the best practices, challenges, and unintended consequences for multiage learning in elementary schools?
3. What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools?
4. What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?

From these research questions, a set of interview questions was developed to elicit principals' perceptions about implementing a new model of schooling using multiage-, mastery-, and blended-learning strategies. Their beliefs pertaining to breaking down the barriers of age = grade traditional schooling, and multiage-, mastery-, and blended-learning practices were studied. The result is a comprehensive description of principals' perceptions about breaking down the barriers of the traditional model of schooling and multiage-, mastery-, and blended-learning best practices in the digital age.

Research Design and Rationale

A qualitative phenomenological design was used for this study. Moustakas (1994) stated that phenomenological researchers seek to describe perspectives within themselves (p. 27). The researcher believes that the age = grade traditional model of schooling is not meeting the needs of students in today's world. Therefore, the researcher sought to discern what will work for students in the digital age by examining principals' perceptions of changing the age = grade traditional model of schooling. Similarly, Bloomberg and Volpe (2016) stated, "The purpose of phenomenological research is to investigate the meaning of the lived experience of people to identify the core essence of human experience or phenomena as described by research participants" (p. 48). Merriam (2009) suggested, "Phenomenology is a study of people's conscious experience of their life-world" (p. 25). The qualitative researcher tries to make credible the responses of participants in the study (Russ-Eft & Preskill, 2009, p. 180).

The researcher believes that the philosophical perspective of interpretivism/constructionism explains the stance behind the study. When a study is not measuring something, but instead is interested in the essence of the experience or discovering elements that describe a situation, then it is suitable for the interpretive perspective (Merriam, 2009). A phenomenological design is appropriate for this study because the researcher interviewed six principals of elementary schools to elicit their perceptions about creating a new model of schooling and best practices for multiage, mastery, and blended learning. Merriam stated, "the phenomenological interview is the primary method of data collection" (p. 25) when eliciting the meaning of a phenomenon. It is important for the researcher to be invested in the questions that drive the study.

Moustakas (1994) stated, “the researcher has a personal interest in whatever she or he seeks to know: the researcher is intimately connected with the phenomenon” (p. 59). The researcher is passionate about breaking down the barriers of the age = grade traditional model of schooling and therefore has a personal interest in the topic.

Site and Population

Population description. The researcher maintained confidentiality in this study by using pseudonyms in place of all site and participant names. The population for this study was six elementary school principals in the ABC School District. ABC serves approximately 22,000 students among 47 schools and, although the district is located in a rural northeastern region of the United States, it has characteristics of urban, suburban, and rural districts throughout the county. ABC School District has a free and reduced-price meal (FARM) rate of 48.7% and all third- through 12th-grade students have had a 1:1 device for at least 1 school year. A 1:1 device means that every student in Grades 3 through 12 have an iPad or a laptop computer to use at school and at home every day for instructional purposes.

The researcher selected participants based on criterion sampling. Aligned with Lunenburg and Irby (2008), purposive criterion sampling would be appropriate to use for this study because participants need to be purposely chosen, based on a set of criteria. Therefore, the researcher needed to be able to select principals for the study who have some experience with multiage, mastery, or blended learning occurring in their buildings. Participation by principals was voluntary.

Site description. To maintain confidentiality, the researcher assigned school sites used in this study a pseudonym. The sites chosen, as shown in Table 1, were Apple

Elementary School with a FARM rate of 64.8% and a principal with less than 10 years of administrative experience, Partner Elementary School with a FARM rate of 67.6% and a principal with less than 10 years of administrative experience, Main Elementary School with a FARM rate of 53.5% and a principal with 10–15 years of administrative experience, Happy Elementary School with a FARM rate of 83.6% and a principal with 10–15 years of administrative experience, Sunny Elementary School with a FARM rate of 41.8% and a principal with 10–15 years of administrative experience, and Simple Elementary School with a FARM rate of 52.4% and a principal with more than 15 years of administrative experience.

Table 1

Sites and Demographics Chosen for Study

School name	Free and reduced-price meal (FARM) rate (%)	Years of principal experience
Apple Elementary School	83.6	Less than 10 years
Partner Elementary School	72.0	Less than 10 years
Main Elementary School	47.6	10–15 years
Happy Elementary School	64.8	10–15 years
Sunny Elementary School	41.8	10–15 years
Simple Elementary School	52.4	More than 15 years

Site Access

The researcher completed the "Request for Conducting a Research Study" form from the ABC School District and obtained approval from the district when the Drexel University Institutional Review Board (IRB) approved the study. The form appears in

Appendix A. The researcher explained the study to the school district and followed the school district's processes for conducting a research study.

Research Methods

Interviews. Moustakas (1994) stated, "Phenomenology is concerned with wholeness, with examining entities from many sides, angles, and perspectives until a unified vision of the essences of the phenomenon or experience is achieved" (p. 58). The researcher conducted interviews with study participants to glean an in-depth understanding of principals' perceptions of breaking down the barriers of age = grade traditional schooling and best practices for multiage, mastery, and blended learning in elementary schools. Interviews are the most common method used in phenomenological research because the purpose is to get to *what* participants have experienced and *how* they experienced the phenomenon (Creswell & Poth, 2018).

Moustakas (1994) stated, "Typically in the phenomenological investigation the long interview is the method through which data is collected on the topic and question" (p. 114). The researcher chose to use a method based on Seidman's (2013) qualitative phenomenological-interviewing approach. This approach has three distinct sections usually completed over a three-interview series: focused life history, details of the experience, and reflection on meaning (Seidman, 2013). The researcher chose to conduct all three sections during one long interview to reduce the number of days participants had to commit their time. The principals volunteering their time for the study were more apt to consent to participate if their time was valued. The interviews were conducted in a semi-structured format., "The semi-structured interview allows for probing, rephrasing of the questions, and asking the questions in a different sequence" (Russ-Eft & Preskill,

2009, p. 318). The researcher believed this structure for the interviews allowed the natural flow needed to attain the essence of the principals' perceptions of breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage learning, mastery learning, and blended learning in elementary schools.

Instrument description. The researcher created questions based on "the-three-interview-series" approach by Seidman (2013, p. 20–23). The researcher conducted one interview lasting approximately 60 minutes that included all three sections of the series. In the first section of interview, the researcher invited each participant to reconstruct his or her life history leading up to becoming a principal. The purpose in this inquiry was to establish if themes surfaced from the past that allowed a principal to be more receptive to changing the age = grade traditional model of schooling. In the second section of the interview, the researcher asked questions about the principal's experience breaking down the barriers of the age = grade traditional model of schooling. The researcher also asked the principals to describe concrete experiences in classrooms in their schools to discern the essence of what it is like to be in that situation as a student and teacher, from a principal's perspective. The third section of the interview asked the principal to reflect on his or her life experience and current experiences and determined where the school might go in the future in breaking down the barriers of age = grade traditional schooling. The researcher also asked about what best practices for multiage learning, mastery learning, and blended learning would be continued in the future in that school. The researcher believed this interview structure allowed the natural flow needed to attain the essence of principals' perceptions about breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage, mastery and blended

learning in elementary schools. An interview protocol and questions appear in Appendix B.

It is important to note that the researcher is the primary instrument in this study. Merriam (2009) stated that in qualitative research "The researcher is the primary instrument for data collection and analysis" (p. 15). The purpose of a phenomenological qualitative study is to attain the essence of the experience for the participants. To do this, the researcher had to understand fully what participants experienced. Therefore, the ability to be responsive to the participant and change the planned course of the interview was necessary (Merriam, 2009).

Participant selection. The principals chosen for this study worked in schools that have a FARM rate of more than 40% and have had 1:1 iPad access for students in Grades 3 to 5 for at least 1 school year. The principals chosen also had experienced some aspect of multiage, mastery, or blended learning in their schools. The ABC School District gives principals some autonomy over their school buildings, so not every school has the same types of instructional practices. The leaders in the schools chosen have been working to change instructional practices to meet the needs of students in the digital age, but to different degrees. The researcher also chose the principals based on years of experience as follows: two principals with less than 10 years of administrative experience, three with 10–15 years of experience, and one with more than 15 years of experience. The researcher believed this categorization would help alleviate bias around principal age/experience level and willingness to try new ideas.

Identification and invitation. The participants had the option to participate, so the researcher chose schools with similar demographics and principal years of experience

as back-up sites. The researcher spoke to the participants and explained the purpose of the study. After acknowledging their understanding of the study and their commitment to be interviewed, the researcher asked each participant if they had any questions. The sample letter of consent appears in Appendix C.

Pilot study. The researcher conducted a small pilot study after receiving IRB approval. Krathwohl and Smith (2005) stated "nearly every study benefits from doing pilot work" (p. 130). By conducting a pilot study, the showed "the availability of participants, the practicality of procedures, and the skills and capabilities as a researcher" (Bloomberg & Volpe, 2016, p. 65). The researcher approached the pilot study in the same manner as the final study to best prepare for what could transpire during the actual study on principals' perceptions of breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage, mastery and blended learning in elementary schools.

The researcher developed an interview protocol and questions included in Appendix B. The interview protocol and questions were used for the pilot study. For the pilot study, the researcher interviewed two elementary school principals who were not currently working in the ABC School District. After the interviews, the researcher asked the principals for feedback regarding the protocol and questions and made a few minor wording changes before starting the actual study. The pilot study also gave the researcher a true gauge as to the amount of time needed for each interview.

Pilot research design. The pilot research design was the same as that of the study and used a qualitative phenomenological approach. The pilot design replicated the

study design, but participants were not from the same school district used in the final study. Table 2 shows the pilot study design and timeline.

Table 2

Pilot Research Design

Sample size	2 elementary school principals
Location	The elementary school principals were not from ABC School District.
Description	The researcher conducted interviews with participants using the interview protocol and questions and sought feedback about the questions.
Purpose	To determine reliability and validity of the research questions and to determine the amount of time needed for interviews.
Timeline	Following IRB approval

Pilot research methods. The researcher used the interview series proposed for the study. The researcher believed this interview structure allowed the natural flow needed to be able to discern the essence of principals' perceptions about breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage, mastery and blended learning in elementary schools. The interview protocol and questions are included in Appendix B.

Data collection. After the completion of the pilot study and adjustments made, the researcher commenced the final study. Data accrued during one interview session consisting of three sections with each of the six participants. Before beginning the interview process, the researcher engaged in a bracketing process (Moustakas, 1994). The researcher described personal experiences about breaking down the barriers of the age = grade traditional elementary school model and then tried to put those views out of

mind while learning about the experience of those being interviewed (Creswell & Poth, 2018). This process allowed the researcher to clear the mind and attempt to limit any preconceptions in the interview sessions.

The data accrued during the interview sessions and the sessions were recorded. The researcher used the recordings and online tools to help with the transcription process. The website www.rev.com was used to transcribe the interviews. This website allowed the researcher to upload the recording of the interview and the interview was transcribed into a Microsoft Word document within 12 hours. The researcher then went through the transcript for quality control, as soon as, the transcript was received. The researcher then used NVivo software to help organize and analyze the interview transcripts. NVivo software helped the researcher organize the data and keep track of themes throughout the interviews and saved much time during the coding process. As Moustakas (1994) suggested, the researcher used the procedure of horizonalization to make meaning from the transcripts (p. 118). Horizonalization means going through the interview transcripts and finding sentences, statements, and quotations that tell the story of the participant's experience (Creswell & Poth, 2018). In this study, the researcher found themes from participants' descriptions of their lives before becoming principals, and what has helped/hindered principals from moving toward a new model of schooling that breaks down the barriers of age = grade traditional elementary schooling. The researcher also sought themes in the data about the benefits, challenges, and unintended consequences of multiage-, mastery-, and blended-learning practices used in their schools.

Data-Analysis Procedures

The data were analyzed as outlined by Creswell and Poth (2018):

- *Collect data from the individuals who have experienced the phenomenon by using in-depth interviews.* The researcher used an adapted version of the-three-interview-series approach by Seidman (2013). The researcher conducted the interviews in a single setting but incorporated the three sections into the interview. The purpose of the three sections were to gather the participant's life history, details of the experience, and reflection on the meaning of breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage learning, mastery learning, and blended learning in elementary school.
- *Generate themes from the analysis of significant statements.* The researcher analyzed the data and found meaning from participants' experiences to form themes from sentences, statements, and quotations.
- *Develop textural and structural descriptions.* The researcher wrote a description of the themes from the experiences of the principals about changing the age = grade traditional model of schooling. The researcher described themes around best practices, challenges, and unintended consequences of multiage learning, mastery learning, and blended learning.
- *Report the "essence" of the phenomenon by using a composite description.* The researcher included a description that focused on participants' similar experiences.
- *Present understanding of the essence of the experience in written form.* The researcher used the analysis information to construct a comprehensive description of principals' perceptions on breaking down the barriers of the age

= grade traditional model of schooling and best practices, challenges, and unintended consequences for multiage learning, mastery learning, and blended learning in elementary schools (Creswell & Poth, 2018, p. 79–80).

Stages of Data Collection

Table 3 provides the researcher's timeline for data collection and analysis.

Table 3

Timeline for Data Collection and Analysis

Proposal presentation	June 2017
Submit IRB	June 2017
IRB Approval (2 week minimum)	August 2017
Organization for Housing Data	September 2017
Start field research	September/October 2017
Complete field research	October 2017
Data analysis (e.g., coding)	October 2017
Draft of Chapter 4	October 2017
Draft of Chapter 5	January 2018
Response & revision of Chapter 4 with SP	December 2017
Response and revision of Chapter 5 with SP	January 2018
Completed dissertation draft to SP	January 2018
Revisions of dissertation—you and SP	January 2018
Dissertation draft to editor	February 2018
SP conferences with committee	February 2018
Dissertation orals ("defense")	March 2018

Ethical Considerations

This study included adult participants, all over 18 years of age. No children were used in this study. According to the Belmont Report (1979), several elements should be considered in working with human subjects: respect for persons, beneficence, and justice.

In regard to respect for persons, participants had the choice to participate. Before consenting to be a participant in the study, principals knew the purpose of the study, procedures, risks, and benefits of participating. The researcher received informed consent from all participants before beginning the interview. The researcher also ensured that the anonymity, confidentiality, and privacy of participants was upheld. In regard to beneficence, participants were unharmed by participating in the study. All results are kept confidential and not ascribed to a specific individual. The researcher used pseudonyms for the names of the principals when reporting the information. In regard to justice, participants were selected based on the same criteria. No participant in the study will get accolades or admonished based on their statements, as the privacy of the individual will be upheld.

The researcher obtained Collaborative Institutional Training Institute certification as of June 2, 2016 and it remains valid until June 2, 2019. IRB permission was obtained before beginning any research for this study. When IRB approval was granted, the researcher elicited informed consent from all participants. Principals from the researcher's current school district of employment were participants in the study. All participants understood that the study was for research purposes only and their confidentiality will be maintained.

Summary

The purpose of this study was to create a comprehensive description of principals' perceptions about breaking down the barriers of the traditional model of schooling and multiage-, mastery-, and blended-learning best practices in the digital age. A qualitative phenomenological research approach was used to answer the central research question and four sub-questions. The researcher used an interview protocol and questions based on the-three-interview-series approach by Seidman (2013, pp. 20–23). A pilot study was conducted to increase the reliability and validity of the interview questions. Feedback from the pilot study was used to make any necessary changes to the interview protocol and questions before embarking on the final study.

This chapter provided site and population information. Included in the chapter were site access and descriptions. Research methods and data-analysis procedures were explained, and ethical considerations described.

Chapter 4: Findings, Results, and Interpretations

Principals encounter the phenomenon of breaking down barriers of the age = grade traditional model of schooling each day in elementary schools. In previous chapters, the researcher provided an argument for the need to change the traditional model of elementary school. In the current study the researcher examined principals' perceptions about the barriers to changing the age = grade traditional model of schooling and best practices, challenges, and unintended consequences for multiage, mastery, and blended learning in elementary schools. This chapter provides the study findings. Results from this study may be helpful to school districts that are contemplating changing the traditional model of schooling. Anyone seeking to learn about best practices for multiage, mastery, and blended learning in elementary schools may find this study beneficial.

The researcher used an adapted version of the-three-interview-series approach by Seidman (2013) for the interviews. The researcher conducted the interviews in one setting but partitioned the interview into three sections. The purpose of the three sections were to gather a participant's life history, details of the experience, and reflection on the meaning of breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage learning, mastery learning, and blended learning in elementary school. To test the interview protocol and questions, two pilot interviews were conducted with elementary school principals outside of the study school district. The researcher asked for feedback on the protocol and questions and made minor wording changes before commencing the actual interviews for the study.

The researcher collected data through individual interviews with six elementary school principals. Each interview lasted 30–45 minutes. The interviews were recorded with participant permission and transcribed by a professional transcription company, Rev.com. The researcher reviewed each transcript for accuracy and made minor changes where necessary. The transcripts were then downloaded into NVivo software for analysis. The researcher coded each interview and used coding stripes to compare interviews. Coding stripes enabled the researcher to highlight an individual color for each code, allowing the researcher to easily identify all statements from transcripts that matched that particular code.

NVivo software allowed the researcher to use parent and child nodes for coding. Initially, 11 parent nodes and 28 child nodes emerged in the data-analysis process. These codes were derived from the researcher going through the interview transcripts and coding, based on overarching ideas (parent nodes) that emerged compared to ideas that could be grouped under an overarching category (child nodes). For instance, a major idea that emerged in the initial coding was mastery learning (parent node) and teacher goal setting, student goal setting, feedback, and formative assessment (child nodes) were subsumed under that category. After the initial-coding process, the researcher went through the data multiple times and made adjustments to the nodes. The themes that emerged after data analysis are detailed in the findings section.

Study Participants

Participants in this study included six elementary school principals from the ABC School District. The researcher chose pseudonyms for participants to help bring their stories to life rather than using numbers (Seidman, 2013). Table 4 shows the

demographic information of participants. Four participants were female. The table indicates years of experience and percentages of FARM participation.

Table 4

Demographic Information of Participants

Principal	Gender	Years of principal experience	Free and reduced-price meal (FARM) rate
Principal 1—Debra	Female	10–15 years	47.6
Principal 2—Daniel	Male	More than 15 years	52.4
Principal 3—Matthew	Male	Less than 10 years	72.0
Principal 4—Francine	Female	Less than 10 years	83.6
Principal 5—Elise	Female	10–15 years	64.8
Principal 6—Carol	Female	Less than 10 years	41.8

Findings include three important components. The first is information shared by participants pertaining to their lives leading up to becoming a principal: their focused life history. The second set of findings aligns with the central research question and first sub-question. Finally, the third component includes the findings aligned with the three additional sub-questions.

Findings

Focused life history. The interviews of the six participants generally focused on questions that led to answers for the central research question: How do principals describe their experience when implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary school? The

researcher started each interview by focusing on the participant's life before becoming a principal. These questions and the participants' answers laid the foundation for the rest of the interview and the ultimate connection between their experiences before becoming a principal and their lived experiences as a principal, to establish their perceptions for the future. The first question of the interview was, How did you become a principal? Please talk to me about your past life before becoming a principal. What events and experiences led you to this profession?

Four themes emerged from this question and are included in Figure 1. Four participants were influenced by others to become a principal and two were influenced to go into the profession by their inner drive. Three of the six participants described themselves as being a change agent and four of the six participants were curriculum specialists before becoming a principal.

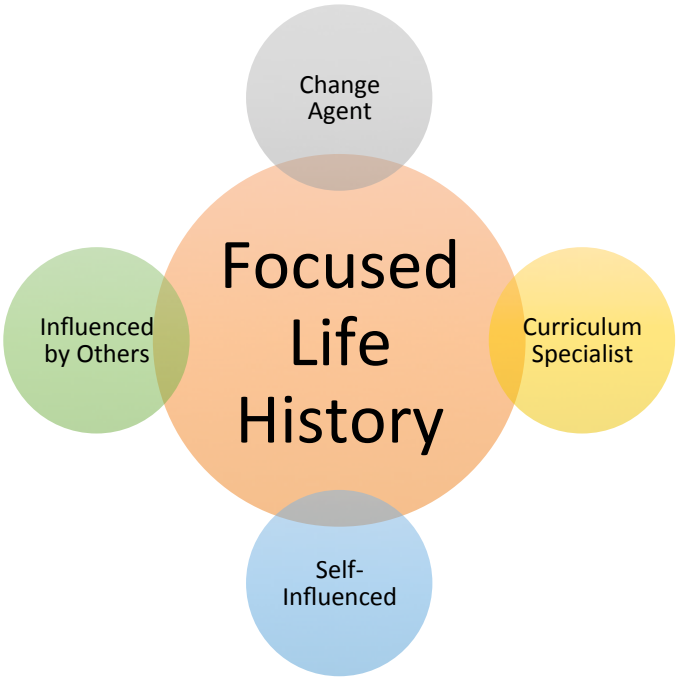

Figure 2. Themes from focused life history.

Influenced by others. Four of the six participants shared they were influenced by others to become a principal. Debra revealed, "Honestly, what happened was I got my administrative and supervision certification and my husband said, 'If you're getting another degree, you have to apply for something else other than teaching.'" Daniel spoke about a professor who inspired and influenced him to become a principal. He shared, "He could talk for 3 hours, and you wanted more. He was that influential." Later he stated, "And, as we went through he was the one that helped me, and he had the power to call up a school, say yes, hire (participant's name)." Francine came "from a long line of educators" in her family, which was part of her decision to become a teacher. She stated later, "My principal had approached me and said I had leadership qualities and really encouraged me to pursue a master's degree." Elise shared her experience being called by her supervisor and told she would be moving into a principal position.

> Then I got a call from (supervisor's name), and she said, "It's time to fly. You're getting transferred to (school name) to fill in for (principal name), because she's not coming back." I'm like, no, not flying. I don't want to be the principal. So, she said, "You don't have a choice. Do you want a job?" I'm like, yes. So I transferred over there to fill in for (principal name) for the rest of the year. And then I just kind of decided that I did like that.

These findings suggest that others could have a direct impact on career choices for individuals. Whether a husband, professor, family member, or supervisor, the impression was planted, and a career move toward being a principal was made in the case of these four participants. The other two participants said they were self-motivated to become a principal.

Self-Influenced. Matthew noted he knew it was time for him to become a principal. He said, "I know, this is it, I can be a principal. I'm ready to be a principal. The progression is from teacher to professional development, to becoming an administrator." Carol shared:

> My personality is that I like to be in charge. I like to know the comings and goings of the school, things that are going on: so, while I loved teaching, I also wanted to move into being a principal and really getting into the inner workings of a school. I loved to problem solve. I loved to be able to work individually with kids and with families and being a principal really allows for that.

From these participants, findings suggest that self-motivation and the realization that it was time to take this step in their career was what pushed them to become principals. Extrinsic or intrinsic motivation shaped this section of the interview. All participants were influenced either by others or themselves to become a principal. Reflecting on this aspect allowed the researcher to see into the depths of the journey for participants and how they each enacted a next step in their career toward becoming a principal. The next theme that emerged was that participants became principals because of wanting to be a change agent.

Change agent. Three of six participants specifically mentioned being a change agent early in the interview. Matthew said, "I'm ready to be a principal because you can make changes." Similarly, Elise said:

> I like being in a position where I could really encourage change, not be second in command at the helm, so to speak. And, sometimes as an assistant principal, your

> views may not align exactly with your principal. So, that was an opportunity for me to really see what it was like to be able to drive learning and teaching in the building.

Carol spoke about coaching teachers to create change in a school stating, "I also love working with teachers, and being a principal gives you that opportunity to work with them one on one, to coach them." From these participants, the researcher was able to get a glimpse into the rationale of making this career choice. These findings related to being a change agent also linked to later finding of participants' willingness to create change in their school building. The final theme that emerged from the first interview question was that four of the six participants were curriculum specialists before becoming principals.

Curriculum specialists. Debra explained that she was a mathematics and science curriculum specialist before becoming a principal stating, "I have a love of math and science, so the math supervisor position opened. I applied for that. I did that position for the county for three years." Matthew noted he was a technology curriculum specialist before becoming a principal. He stated, "[Typically] the [career] progression is from teacher to professional development, to becoming an administrator." Francine discussed her experience as a lead teacher and instructional coach.

> From there I continued with the job and experience of being a primary lead teacher and instructional coach were tagged to that job as well. I was given an opportunity to have a summer internship, administrative internship opportunity with the district at the time. I also helped write the primary-grades social studies curriculum for the district in collaboration with other teacher leaders and administrators.

Elise described her experience progressing from teacher to curriculum specialist:

> And then after teaching for 7 years, the principal there, (principal name), basically created a position for me that she called Curriculum Specialist. And that was back during [the Maryland School Performance Assessment Program] time. So, she really wanted me, kind of like what our lead teachers do now, she just was thinking really ahead of the game. I basically went around and worked with classroom teachers on how to make sure that their lessons were rigorous enough to prepare kids for [the Maryland School Performance Assessment Program]. I did a lot of coaching, a lot of modeling, planned with teachers, basically everything that you would have in a current Lead Teacher role.

Four of six participants specifically spoke about being a curriculum specialist before becoming a principal. There is a natural connection to this aspect for a principal, as a large part of a principal's job is instructional leadership. This finding suggested that knowing instruction and being able to support teachers in delivering instruction is an attribute for a rising principal to possess.

Overall, from the focused-life-history section of the interview, four themes emerged about participants' lives before becoming principals pertaining to their motivation or career paths. Being influenced by others, self-influenced, a change agent, or a curriculum specialist pushed participants to take on a principal role for their career. In Chapter 5 the researcher will expand on these themes and their relationship to influencing change in recommendations for future study.

Central Question and First Sub-question

The central research question and first sub-question follow: How do principals describe their experience when implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools?

The researcher introduced these ideas to the participants by sharing the research questions and posing a question in the second section: The details of the experience of the interview. The question was, To what extent have you experienced the need to break down the barriers of age = grade traditional schooling? A follow-up question was posed in the third section: Reflection on the meaning of the interview. The question was, Given what you have told me about your life before becoming a principal and your experiences when breaking down the barriers of age = grade traditional schooling, where do you see this going in the future for you and your school? Themes emerged from asking these questions about the barriers to moving to a new model of elementary schooling and are included in Figure 2.

Teacher capacity. Five of six participants spoke to some degree about teachers being able to handle the demands of understanding how to teach students in a model of schooling that is not based on the age = grade traditional format. Francine stated:

> The lack of content knowledge, the depth of content knowledge and pedagogy that's there to be able to extend or scaffold up or down appropriately to meet the needs of the students beyond their comfort zone or skill set in a particular grade level content or skill area.

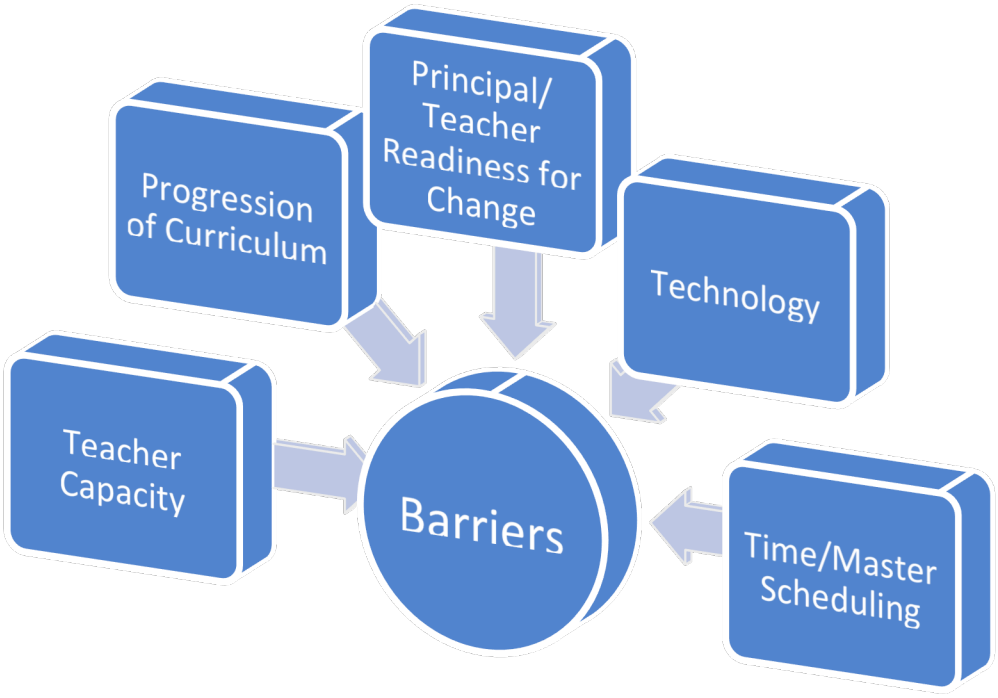

Figure 3. Themes for the barriers to moving to a new model of elementary schooling.

Francine continued her thoughts about teacher capacity:

> Teachers' experience, initially, discomfort with that gradual release of realizing that you know, I'm making it student-centered, and that they have to learn to step back and begin to look at themselves as the facilitators of the learning in which the students are having to own the learning and earn the learning. It requires a mind shift and a pedagogical shift with their practice. It's uncomfortable and it's very risky. It requires a deep knowledge of the content from the teacher as well to be able to plan for misconceptions and misunderstandings the students may have and be able to demonstrate their flexibility and response to student needs in the event that the lesson kind of veers off track. They have to be comfortable to do that.

Two principals shared the necessity of teachers understanding content knowledge in the area of reading. Elise expressed concern over teachers having the knowledge to teach reading well by stating, "I mean the gap is so big, but then you've got those teachers that really have never been taught how to teach kids to read, do they know how to teach children to learn through reading?" Matthew shared Elise's concern about teachers understanding content knowledge, "When I talk to teachers, I go back to we're not just hitting the surface. You need to have that deep understanding and the deep thinking skills, and the kids need to know how to read."

Carol stressed that teachers had to have the capacity to understand technology and a new way of planning by stating:

> The teacher experiences and needs to experience a whole different way of planning. While the district has been one-to-one [one iPad for every child] for the past couple of years, the teacher needs to now recognize that they need to constantly be learning as well with the technology.

Debra stated similar concerns about how much teachers are being asked to understand about curriculum:

> I think the struggle becomes when we see kids at such a varying level and we talk about the need to differentiate, but sometimes what we're asking teachers to do is totally beyond differentiation. It's looking at multicurriculums or multigrade level curriculums to determine how to fill some of those gaps for kids, especially some of our lowest ones, and also our more advanced ones. We're asking teachers to really, when we're looking more traditional, beyond differentiation,

let's look at multiple curriculums to determine how we best meet the needs of 20 kids in a classroom.

These findings suggest that participants had concerns about their teachers having the capacity to make the change toward a new model of elementary schooling. Whether their concern lay in the notion that a new model of schooling would involve a deep understanding of the curriculum or that teachers would be expected to be true facilitators of learning in a student-centered model, the principals had reservations that all teachers would be able to take on those challenges. That outcome leads to the next theme of progression of the curriculum.

Progression of curriculum. All participants expressed that the progression of the curriculum—knowing and understanding the standards and how they develop—could be a barrier for moving to a new model of schooling. Daniel noted that the mathematics curriculum does not lend itself to multiage instruction as easily as other disciplines, stating, "One thing we have found is, it is more difficult to do with math, because the standards are completely different in math." Francine expressed the importance of understanding the progression of the curriculum when she shared, "Also, just delving deep into the essential curriculum, so that we have that understanding so we're able to understand the progressions within each standard so that we're able to scaffold up or down as appropriately for students." Matthew stated a similar idea: "It all goes back to the same thing. It goes back to that looking at the curriculum, knowing what each individual student needs and teaching and assessing them so they can continue to move on." Elise conveyed the same notion of the importance of teachers understanding the progression of the curriculum:

> Well, I think as we look at our standards, and we look at our new report card that we're piloting, I think it might help teachers not necessarily with just the content and curriculum in their grade level but look at more of a K–12 span which might help them. Because they still get worried about, these are my kids, and if they're not in my room at this time and this person teaching them, and they aren't excelling then how do I know. They just don't want to let kids go. But I think if we start looking at these big ideas, you know, K–12, we're all going towards the same goal.

Carol went into more depth about the importance of looking at the progression of the curriculum:

> For a teacher, it's not a checklist. They have to realize that just because I taught something doesn't mean necessarily that the student mastered it, that I need to really keep working on that skill. The student needs to be able to truly show that they mastered the skill, whether it is from a transfer task, some sort of formative assessment, but it's got to be more than that. It's just not a one-time "okay they mastered it" and we're done. If you can continue to bring in those sets of skills throughout the year so they can continue to build upon that.

Debra concurred: "It's looking at multi-curriculums or multi-grade level curriculums to determine how to fill some of those gaps for kids, especially some of our lowest ones, and also our more advanced ones." Debra also noted that this could be a barrier when moving to a nontraditional model because of the time that it takes to so this well.

These findings suggest that all six participants had concerns about teachers and themselves knowing and understanding the progression of the curriculum. Truly understanding the flow and multigrade span is not an easy undertaking and does take a great deal of time to master. The next theme that emerged from the interviews around barriers to changing the age = grade traditional model of elementary school was time/master scheduling.

Time/Master scheduling. Matthew spoke about time in changing the master schedule of the school and in the essence of time to learn when stating, "Time is always a difficult thing for them to plan, so we had to basically change our master schedule." Matthew added later:

> I've seen with mastery learning and even blended learning, it just takes time. It's going to be breaking down the barriers. It is some barriers, especially with the blended learning. I think that that's going to take more time than anything.

Elise saw greater flexibility when breaking down the barriers of the traditional age = grade model of elementary schooling, but also saw the master schedule as a barrier when she stated, "I just see it really helping teachers look at it with a flexible time. We still get so wrapped up in schedules."

Debra, Matthew, and Elise spoke to time and the master schedule of an elementary school being a barrier to changing the traditional model of schooling. The findings suggested that the time it takes to learn the progression of the curriculum over multiple grade spans and looking at the master schedule to have blocks of time where students can be in classrooms based on factors besides their age can be daunting tasks.

The next theme that emerged from the interviews around barriers to changing the age = grade traditional model of elementary school was technology.

Technology. Technology is often thought of in a positive light in education, but five of six participants in this study expressed concern that technology could be a barrier for moving to a new model of schooling. Elise explained:

> I think one of the biggest struggles was, and still is, making sure that they aren't using technology as a babysitter or as a replacement for teaching. It needs to be a springboard for learning, not a replacement for teaching. So just making sure that they are constantly purposefully and meaningfully using technology to support learning, not using it because it's an easy thing to put in front of kids.

Carol agreed that teachers have to keep current with the technology when she stated:

> It's not enough to just say, "Hey, here's an iPad." You actually have to keep up with the current trends in technology. You have to really research is this the best way to teach the students this? What is the best tool technology-wise that I'm using to teach this.

Francine shared a similar insight:

> It's really been a shift. It's a place in which we continuously need to grow and understand so that it's not just a substitution of collaboration, but intentional collaboration beyond and beyond just the substitution of let's just post your thinking.

Matthew thought that students focusing and teachers learning the technology is a challenge: "Challenges, I think you're going to see or I do see the young people in technology, it's trying to keep them focused and on task and even adults, encouraging adults to use that type of technology." Daniel thought that students using the technology appropriately can be an issue:

> Most of the kids who are using [technology do it] in an appropriate manner. We've had of course, lots of issues with certain kids doing things that they should not be doing with iPads that caused some problems, and we've had to block a few kids.

These findings suggest that five of six participants had concerns about the purposeful use of technology in their schools. Elise wondered if technology was being used as a babysitter instead of enhancing instruction and also about the appropriate use of devices by students. Matthew and Daniel specifically spoke about students focusing and having to block students from devices because of misuse. Francine and Carol described the need for professional development for teachers and administrators to keep current with technology changes. The last theme that emerged from the interviews around barriers to changing the age = grade traditional model of elementary schools was principal/teacher readiness for change.

Principal/Teacher readiness for change. A barrier to any new initiative can center on the readiness of the leader and those implementing the change. Four of six participants spoke to some degree about the readiness for themselves or their teachers to change from the traditional model of elementary schooling. Francine stated, "I believe classroom teachers, and just in my experience, I've noticed one of two things. One is that

this is against the traditional model and it's something that we've always done, so why change it? So, it's mindset." In addition, Francine opined:

> Teachers experience, initially, discomfort with that gradual release of realizing that you know, I'm making this student-centered, and that they have to learn to step back and begin to look at themselves as the facilitators of the learning in which the students are having to own the learning and earn the learning. It requires a mind shift and a pedagogical shift with their practice. It's uncomfortable and it's very risky. It requires a deep knowledge of the content from the teacher as well to be able to plan for misconceptions and misunderstandings the students may have and be able to demonstrate their flexibility and response to student needs in the event that the lesson kind of veers off track. They have to be comfortable to do that.

Matthew spoke about teachers not being ready to take the step of moving from the traditional model of elementary schooling:

> I think the barrier is definitely teacher fear. That is probably the biggest barrier, teachers just have fear of the unknown that this wasn't what we were taught. This isn't what we were taught in college. This isn't what we're used to and just that constant every year, teachers constantly say, "They're changing. Things are changing." It would be another change that teachers would have to adapt to. Obviously, teachers that are just comfortable with doing what they normally do, what we've always done, I think that to get buy-in to the change would be very

> difficult. Those senior teachers, I think once you're at a point in your life as a teacher, they just don't want to do it, they don't want to change.

Carol expressed that teachers are taken out of their comfort zone when changing the traditional model of elementary schooling:

> From a teacher's standpoint, it has really shaken them up a little bit in the fact that they can no longer say, "I'm a second-grade teacher," because in reality, they are now meeting the needs academic-wise as well as socially of students in our building from Grades 1 through 5.

When speaking about themselves as leaders through change, three principals spoke about their readiness in three different ways. Francine was ready for change stating, "With reflecting being that I'm relatively a newer leader in this building, I see a lot of opportunity for looking at this pedagogical approach to service our students." In contrast, Daniel was more hesitant when stating, "I guess I'm a little bit more of a traditionalist in the fact that you need to be able to read and be able to think and problem solve on your own." Matthew described a situation in which teachers in the school were ready to move faster than the principal:

> I think I definitely see multiage learning, it's going to definitely come around where it's going to happen. I think sometimes it just naturally happens now. It's collecting that data and making sure I've actually made it happen. Instead of grade levels, I've gotten rid of grade levels and we're doing vertical houses where I have all kinds of different levels within a house. The big drawback to that is again, you have to take it slow and you have to provide definitely some

> professional development for teachers to be able to handle that. We're starting with those vertical teams, the vertical meetings. Once teachers get comfortable with that, then we'll start adding students in. They've already started. I can see during meetings, well, we could move this student to this, or this group to go to this and I'm not ready to let them do that. I'm holding them back a little bit just to make sure that they have that concept of the multiage learning.

These findings suggest that teacher mindset, fear, and the notion that they would be removed from their comfort zone could factor into their readiness to change. The principals had varying views of their own readiness to change, with Francine stating she was ready and saw change as an opportunity for growth. Daniel stated he was a traditionalist, meaning he is more comfortable with keeping things the way that they have been, but can still see the value in moving forward. Matthew explained teachers were ready for change before he was ready.

Overall, as Figure 2 represents, the barriers are pushing against the change efforts. Teacher capacity, progression of the curriculum, technology, time/master scheduling, and principal/teacher readiness for change all emerged as barriers to moving to a new model of elementary schooling.

Three Sub-questions

The final component of the findings focuses on the common responses associated with the three additional sub-questions. The three additional sub-questions follow:

- What do principals perceive to be the best practices, challenges, and unintended consequences for multiage learning in elementary schools?

- What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools?
- What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?

To understand the essence of answers to these questions, the researcher asked seven questions between two sections of the interview. In the second section: The details of the experience, three questions were asked of the participants. In the third section: Reflection on the meaning, four additional questions were asked of the participants. All questions asked of participants for this section appear in Table 5.

Table 5

Interview Questions Pertaining to the Three Sub-questions

Section		Questions
2	Details of the experience	Please tell me about experiences in your school with multiage learning. What does a student experience in these classrooms or situations? What does a teacher experience
		Please tell me about experiences in your school with mastery learning? What does a student experience in these classrooms or situations? What does a teacher experience
		Please tell me about experiences in your school with blended learning. What does a student experience in these classrooms or situations? What does a teacher experience?
3	Reflection on the meaning	Given what you have told me about your life before becoming a principal and your experiences with breaking down the barriers of age = grade traditional schooling, where do you see this going in the future for you and your school?
		What best practices of multiage learning do you see continuing? Why?
		What best practices of mastery learning do you see continuing? Why?
		What best practices of blended learning do you see continuing? Why

Best practices for multiage learning. All six participants extensively described multiage learning experiences in their schools. One major theme emerged around grouping students by ability, specifically outlier groups of gifted-and-talented students and special-education students. Francine spoke about a previous teaching experience in a multiage setting:

> Being a former elementary school teacher, when I taught first grade, there were multiage opportunities in which sometimes we would swap students with kindergarten or with second grade based on their level of development for reading. A portion of our language-arts block, we would swap kids based on their developmental level in that continuum using learning records or other multiple measures of data to be strategic and target students. We called it Team Time. That provided an opportunity to flexibly group students based on their needs. We really promoted student growth that way. It kind of leveled the playing field for kids. It was definitely more focused on the learning and the process in which we took to get there versus you're just the kindergartner or you're just the second grader.

Debra uses multiage ability groups for summer school:

> When we have used it, we've used it for summer school and we've really looked at what the reading levels are so that we can make sure that we are being a little more targeted with instruction instead of saying, here's 20 second-graders whose reading levels vary from level A to level W in the same class. I think when we

> condense more into some of those summer school classes where our sizes aren't as large, we definitely see the need to do more multiage versus just grade level.

Carol uses multiage ability groups for guided reading across the entire elementary school. She perceives this to be the best way to meet the needs of the students.

> From a student standpoint, we do a whole school guided reading block in which students in grades one through five are moved into different classrooms based on their current reading level. In the past and also this year I have students who could be first graders in with third graders. I have fifth graders in with second graders. It doesn't matter what grade you are in. What we are doing is pairing students and teachers up at the child's level so then we can specifically focus in on where they are, meet their instructional needs, and move them forward.

Carol is extremely passionate about using multiage strategies:

> I never see it going away. If anything, I see it growing more to where we expand outside of just guided reading. We currently do it for our enrichment where we use multiage. We currently do it for guided reading, and we do multiage for small groups of students in each one of our grade levels if they're more advanced in a particular subject. It will never go away in a building that I am at. It is just the expectation. It is our norm, and we have recognized that it is what is best for students if we want to truly be able to help them academically achieve.

Daniel also discussed multiage learning experiences, noting this is a good way to teach some of the areas of the curriculum in which quality time is not always spent:

> This is our, I believe our fourth year of doing multiage learning. It's not a traditional learning where it's sit and get. It is the best part of the student's day, the last hour and a half of a day. We started 3 years ago with students of Grades 3, 4, and 5. And, we looked at certain aspects of the curriculum that were not covered normally in the course. Like, financial literacy, science exploration, problem solving. And, we said these are some areas that we needed to work on. And we thought this would be a really good way to do it.

Three of the six participants discussed grouping by ability for gifted-and-talented and special-education students. Debra stated:

> Again, in [Gifted and Talented Education] GATE, same thing. I would anticipate that we continue to look at opportunities for our students, especially when we're enriching, looking at where they are and what are their needs. Same for our special education students: where are you and what are your needs? Do you need the same type of intervention? If we have these kids, it doesn't matter if you're in second or third grade. Again, I would be hesitant to do K and 5, or something in those larger grade level spans. Grade levels that are right there close together, a year or so apart, we do that on a regular basis.

Francine shared similar insights:

> In believing that teaching and learning is on a continuum, it's important to provide opportunities for students across their zone of proximal development. In my experience leading a building, instructional teams have dived into a multiage setting for students by way of our most gifted and talented learners. We've had

> opportunities to integrate multiage in that setting, as well as our special education settings. It's almost like looking at the polar opposite of the continuum. Students that have high needs or specialized needs based on their cognitive level of development. Those, some of our neediest students, have been given the opportunity for intervention in a multiage setting because age really isn't the factor. It was based on their cognitive development.

Elise groups by ability for special education students at her school:

> Now, as far as intervention and special education, we don't group by grade level, we group by ability level. Depending on what subject you're looking at or whatever, but it's very common to have students across multiple grade levels in a Wilson group, or in a math intervention pull out, or with some of our kiddos we do push in, but we'll pull kids from different grade levels into the group depending on what skills or what needs they have. And that's basically the intervention/special-ed type lens.

Elise also spoke about ability grouping for GATE students:

> Okay, so one of the ways we do that is through the GATE program. We have a new GATE teacher here, and I really encouraged her to think multi grade, not just pulling a grade because there's a 30-minute block in third grade. But looking at that, we're really pushing teachers to use pre-assessment data, or use what they know about their students, and don't just have every child sit through a lesson just because it's the lesson that you planned to cover standards that day. So, using what you know about students from all sorts of data points.

As shown in Figure 3 and the findings above, through common descriptions of all six participants, the best practices for multiage learning revolved around the theme of ability grouping. Gifted and talented students and special-education students emerged as the groups of students most often served in multiage learning experiences.

Figure 4. Themes for best practices for multiage learning.

Best practices for mastery learning. All six participants shared common responses in their descriptions of mastery-learning experiences. The theme of personalized instruction that specifically uses goal setting, formative assessment, and feedback between teacher and student emerged from the interviews for the best practices for mastery learning.

Debra shared an experience with mastery learning:

> One way that I've seen the mastery learning in a magnet classroom is looking at more personalized instruction for students. They're really looking at, "Okay, what's an area that I'm weak in?" Honestly, we were doing this throughout the

> building last year as well, so even beyond GATE, looking at, "Okay, what area am I weak in? Now what do I need to do to become better at, for example, division?" If you go to that basic level, "What are some things that I can do?"

Debra continued to speak about mastery learning and the cycle of goal setting, formative assessment, and feedback:

> Our goal-setting with kids, providing that feedback, for me to go in and continue to have those conversations with kids too because that ups the ante and it lets them know that we feel that instruction is important. It also lets the teachers know that we feel instruction is important, so there's the two-fold effect there. I think it values where kids are what some of the pieces that either their teacher has helped them determined they need to learn or pieces that they say, "I want to become a better reader and here's ways that I'm going to do it." It just gives them an opportunity to share with us what it is that they want to learn. Those pieces will absolutely continue. Daily discussions with teachers go to that mastery learning at the teacher level, the student level. Continuing to look at formative assessments.

Francine shared how important the process of mastery learning is for critical thinking and that students get to personalize some of their instruction instead of being directed by the teacher:

> In a classroom that's focused on mastery learning, students experience opportunities to think critically, to inquire, like engage in shared inquiry discussions, to engage in inquiry-based learning experiences in which they are

> having to discover and come to consensus on their own of what it is that they're learning and why they're learning it instead of everything being told to them and dictated to, "This is what you're going to learn. This is how you're going to do it," but more of an open-ended process for learning, that it's a shared process, that it's an earned process that involves critical analysis, that involves collaboration, cooperative learning opportunities, access to technology, research.

Carol continued this thought process of the students getting personalized instruction and not having to learn things that they have already mastered:

> Continual conversation that we've always had. The curriculum is not a checklist, so you can't just say, "Yep, I taught that" and move on. Mastery learning, and guided reading is a great example of that, to where they are receiving the instruction exactly pinpointed to what they need, and they will continue to work on that specific skill or specific set of skills until they have truly mastered it and then are ready to move on. It doesn't mean you just stop right there. The teacher should also be going back and incorporating those skills into the future lessons, so the demonstration of that learning is continuing all throughout the year.

Matthew summed mastery learning explicitly by stating, "It all goes back to the same thing. It goes back to looking at the curriculum, knowing what each individual student needs and teaching and assessing them so they can continue to move on." Daniel said something similar when stating, "Where the kids are on the continuum, and that's one thing that we need to share with students. The kids need to know where they are on

the continuum and where they need to go." Elise shared the importance of knowing what students need when stating:

> I kind of think they all go together. We need to know our kids, we need to know what they're coming to us with. I don't think we give them credit for the knowledge they have. We assume that they don't know stuff, so then we teach them stuff they already know. So really knowing your kids and using pre-assessment, and I don't mean a thousand tests, but gathered data from conferencing and watching and observing and conversations. And use data to push them, not just assume they don't know and assume that because it's in this grade level curriculum, I need to teach it to every single child.

As shown in Figure 4 and in the findings above, one theme emerged from the common responses of all six participants around the best practices for mastery learning in elementary schools. The theme of personalized instruction specifically using goal setting, feedback, and formative assessment, was evident from all six principals.

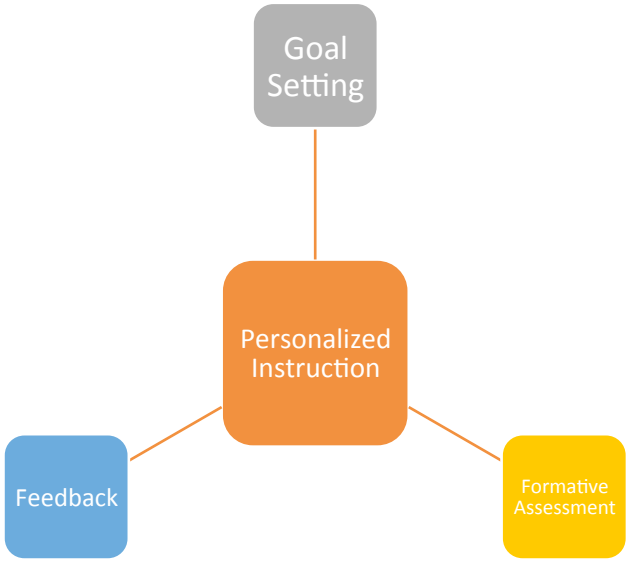

Figure 5. Themes for best practices for mastery learning.

Best practices for blended learning. Three principals discussed the connection between blended learning and mastery learning. Talking about using devices, such as iPads, to enhance instruction, Carol stated, "That goes in with the mastery learning as well. Using that tool to demonstrate the mastery of the learning, and so that will definitely continue to be an area of focus for us as a school." Debra shared similar views when she stated:

> Blended learning provides some of those opportunities, so we've done multiple different things to look at how we help with that mastery for the one grade level teacher that's teaching it all and how to use opportunities for online to incorporate that blended learning to help out with that grade level teacher who's teaching everything.

Debra made the connection between using blended learning in the classroom and personalized instruction for students:

> In all grade levels, we're doing some of those things. In the magnet classroom, some things that they were doing, they've used things like Khan Academy to help kids self-instruct beyond grade level curriculum's uses. Again, setting those specific goals to say, You've mastered this grade level piece of curriculum. Now let's look at more personalized instruction and say where do you want to go next?

Matthew connected best practices of mastery learning and personalized instruction to blended learning:

> All three of your questions go back to looking at the pedagogy and the assessing, but in this case, students are on their own and yet there's many times where students are possibly on their own doing their individual needs because you can go into those programs and set it up.

In addition to the connection between blended learning and mastery learning, the participants had common responses around using blended learning in the elementary schools for collaboration and communication. Many responses included types of digital programs or applications that would be used to enhance instruction. Three of six participants mentioned Google Classroom as a collaboration tool in the elementary classroom. Francine stated:

> In my experience of just being in a district where we've gone from a more traditional model to a one-to-one initiative for Grades 3 through 12, it's really a

> right-now moment in seeing the integration, the purposeful integration of technology and the implementation of the nine digital capacities of learners in the 21st century, and noticing the shift of, with the blended learning, having the opportunity of students to collaborate on a digital platform, using the iPads via Google Classroom, teachers posting discussions on various technological platforms to engage students in their learning and collaborate with them beyond just verbalizing what it is, but offering them opportunities to post their thinking on that platform.

Elise shared:

> I know Google Classroom the one, we've really been talking about it, and trying to use just to hold kids accountable, and then just to use that as conferencing tools when they come back with a teacher like, "Oh you did this, show me that, what goals can you set?"

Daniel believed in more of a traditional approach with students reading books but did mention Google Classroom is being used at his school:

> A lot of instructional use. A lot of good use of Google Classroom. And, the kids are doing that. That is probably the best thing we found from the iPad is Google Classroom and to be able to get access to information. We probably are a little bit more traditional in some aspects of it. Not everything is done on the iPad. There's some time for reading actual books and holding books in their hands. We want to encourage our teachers to make sure when they're using iPads that they have a purpose for it. That it's not just there to play with, it's not a toy.

Elise shared that Google Classroom is also a communication tool between home and school when she stated, “So some of our teachers are giving access to parents, so they can go in and they can see their children, they can see their work, they can see what is being done at school through Google Classroom.” Elise also shared how blogging is helping students communicate with others:

> But I think the opportunities are great. I have a teacher right now who is currently working on blogging, and really using that as a platform for helping kids learn to communicate and transfer their knowledge. And they’re blogging with classrooms from all across the world. Which is kind of a cool thing, that people are watching, and we’re using that to push and say, “Okay, well blogging is something that is used highly, but how can you use technology to talk to a country school, or just expose kids to stuff that they might not be exposed to. How can you communicate with this school right in our county that might be learning the same thing you’re learning, but in a different way. How can you share learning experiences? How can you share products that students are showing and demonstrating their knowledge.” Just thinking outside the walls of the building, how can you continuously expose kids to students so they understand that there is life beyond the western district or the eastern district. Let them see what opportunities are beyond their school.

Carol shared other ways that technology helps the school communicate by when she stated,

> Some of the teachers use Class Dojo. We do use the Remind app as a great reminder tool for parents within the building, and then social media. Facebook is the tool that is use, about 80% of my teams use it very effectively and very well as a communication tool for parents.

As shown in Figure 5 and the findings above, the best practices for blended learning that emerged from the common responses in the interviews revolved around mastery learning, communication, and collaboration. Blended learning allows the opportunity for digital tools and applications to be used in the classroom to enhance personalized instruction. Table 6 shows the digital tools and applications mentioned by participants.

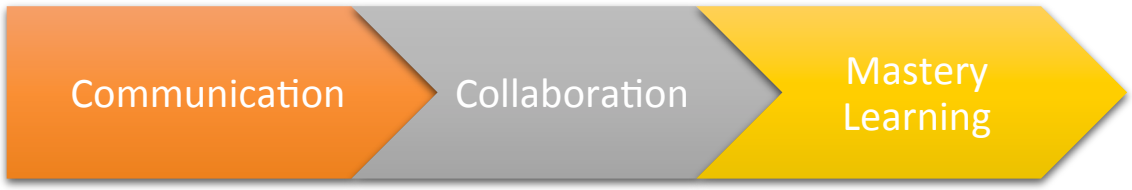

Figure 6. Themes for best practices for blended learning.

Table 6

Digital Tools and Applications Mentioned by Participants

Digital tools and applications
Khan Academy
Google Classroom
Blogging
Seesaw
Remind
Facebook
Class Dojo

Results and Interpretations

This phenomenological study examined principals' perceptions of implementing a new model of schooling that breaks down the barriers of the age = grade traditional classroom using multiage, mastery, and blended learning strategies in elementary schools. Through participation in a three-part interview series, six principals described their lived experiences of implementing a new model of elementary schooling, and in doing so, revealed some indirect and direct connections to the literature review in Chapter 2. Further, three themes emerged from the research study that are represented in Table 7.

Table 7

Themes Identified in the Data

Theme 1	Multiage and mastery learning tend to be used with outlier student populations.
Theme 2	Multiage, mastery, and blended learning all connect to personalized learning.
Theme 3	Professional development and teacher commitment are necessary to assist in the implementation of a new model of elementary schooling.

Theme 1: Multiage and mastery learning tend to be used with outlier student populations. All six participants described using multiage and mastery learning strategies with outlier student populations like special-education and gifted-and-talented learners. In reference to multiage learning, Elise shared, "Now, as far as intervention and special education, we don't group by grade level, we group by ability level." Debra shared, "I find in our magnet classrooms, we probably do a little more with the mastery learning because they are definitely showing mastery and we're determining where do we go with them" in reference to mastery learning strategies with gifted-and-talented learners.

The theme of multiage and mastery learning being used with outlier student populations in the findings further supported the work of Conger (2013), who examined the effect of grade placement on ELLs. Conger showed that students benefit from being placed in a grade level that is lower than their age correlation and directly supports the theme that multiage learning tends to be used with outlier populations (Conger, 2013). Guskey and Jung (2011) found increases in special-education and general-education student achievement when using a mastery-learning model for instruction in elementary classrooms.

The theme of multiage and mastery learning being used with outlier student populations aligned with ability grouping. In the findings, principals perceived that ability grouping for these outlier groups would contribute to their academic success. Francine stated:

> We've already started looking at our intervention service delivery model and looking at opportunities to flexibly group students based on their present levels of

> performance in the classroom, same thing with GATE (Gifted and Talented Education). We're really trying to be intentional with targeting student's needs, and it may call for us going across grade levels in order to provide those services because there is such a deficit in the achievement gap.

This focus on ability grouping contrasts with the work of Hoffman (2002) and Castle et al. (2005), who found that flexible groupings (grouping students based on common interests and shared tasks instead of academic ability) rather than ability groupings had a positive impact on academic achievement and social/emotional growth.

Theme 2: Multiage, mastery, and blended learning all connect to personalized learning. All six participants equated multiage, mastery, and blended learning to personalized learning at some point during the three-part interview series, even though a direct question pertaining to personalized learning was not part of the interview protocol. Elise stated this theme well when she shared, "I think they all go together. We need to know our kids, we need to know what they're coming to us with."

The theme of multiage, mastery, and blended learning connecting to personalized learning in the findings further supports the work of Mitra (2014), who examined the philosophy of traditional school versus a more personalized approach to learning, finding that when students have more control (mastery and blended learning) over their learning, they are more successful. Childress and Benson (2014) researched school districts that are taking a personalized approach to learning and reported that the districts are starting to see academic-achievement gains. Lee (2015) focused a dissertation study on blended learning that proved to have intersections with multiage and mastery learning. The

researcher will address this theme further in Chapter 5 in providing recommendations for future study.

Theme 3: Professional development and teacher commitment are necessary to assist in the implementation of a new model of elementary schooling. Five of six participants discussed professional development and teacher commitment as necessary components to assist in the implementation of a new model of elementary schooling, even though a direct question pertaining to these areas was not part of the interview protocol. Francine shared the need for professional development in relation to multiage and mastery learning practices when stating,

> I think providing professional learning opportunities that involve best teaching practices related to the implementation of curriculum instruction and assessment is important. The use of formative assessment is key in designing coherent instruction for students. Using assessment to check for a student understanding along the way is a very important tool to use when you are delivering instruction and looking at multiage classrooms, or even teaching them mastery, any type of instructional design model that formative assessment piece is huge.

Elise also shared the need for continuous professional development:

> So just really using all the great strategies and resources and technology, and things that we have in a meaningful way that doesn't hold kids back, but pushes them forward as learners. I think there are so many more things that we can learn and do, but I think we just have to be careful that we are supporting teachers along the way and not expecting them to just know how to use technology

> appropriately or know how to collaborate with other grade levels in a purposeful way. And I just think we need to make sure that we're guiding them and giving them professional development along the way that they need.

Francine shared the value of teacher commitment to implementing a new model of schooling when stating, "I believe classroom teachers, and just in my experience, I've noticed one of two things. One is that this is against the traditional model and it's something that we've always done, so why change it?" Similarly, Matthew stated, "The challenges, I think our challenges, first of all, finding teachers that actually agree to do it. That was definitely a challenge for us, but we did. We finally found three really good teachers that have embraced it."

The theme of professional development and teacher commitment as necessary to assist in the implementation of a new model of elementary schooling further supports the work of Tucker et al. (2017) when they stated that job-embedded professional development, where teachers are using the technology they are expected to teach with along with collaboration and coaching, is key to sustainable practices. Tucker et al. also opined that teachers learned better from each other and were more apt to say that professional development was effective when they were able to collaborate with their peers rather than the professional development being top-down. Additionally, Guskey (2003) determined that collaboration "needs to be structured and purposeful, with efforts guided by clear goals for improving student learning" (p. 748). That statement connects to the work of Fahey (2012), who agreed that CFGs structured around protocols and skilled facilitation are fundamental in authentic professional development. The literature review also included one study by Hoffman (2003) on teacher beliefs and practices in

multiage classrooms versus single-grade classrooms. Hoffman (2003) concluded that multiage classroom teachers had more diversity in their teaching techniques, which could equate to effective professional development for those teachers. The researcher addresses this theme further in Chapter 5 in offering recommendations for future study.

Summary

The findings and results contained in this chapter provide substantive examples of principals' experience in implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional classroom using multiage learning, mastery learning, and blended learning in elementary schools. This study assessed the three learning methodologies from principals' viewpoint to align with previous researchers' work. The findings and results of this research study provide information focused primarily on principals' perceptions of breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage, mastery, and blended learning in elementary schools.

Chapter 5: Conclusions and Recommendations

The purpose of this phenomenological study was to understand principals' perceptions of the phenomenon of breaking down the barriers of the age = grade traditional model of schooling. The study was conducted to discover the essence of this phenomenon and best practices, challenges, and unintended consequences for multiage, mastery, and blended learning in elementary schools. The results could aid school districts in making changes to the traditional age = grade model of elementary schooling. The collective responses of the participants that are cited in Chapter 4 are the foundation for this chapter. This chapter has four sections that include the following: an overview of the study, conclusions, recommendations, and a summary.

Overview of the Study

The traditional education system has roots in the colonial and industrial eras but the purpose of education in today's dynamic and global economy has vastly changed. Schools need to produce creative thinkers and problem solvers. This study included a review of extant literature to explore the intersections of multiage learning, mastery learning, and blended learning in elementary schools. Centered on research questions that examined principals' perceptions of moving to a new model of elementary schooling that breaks down the barriers of age = grade traditional schooling, this study sought to support the implementation of instructional strategies to meet elementary students' needs in the digital age.

A phenomenological qualitative research design was used for the study. Six elementary school principals in schools that have implemented some aspects of multiage learning, mastery learning, and blended learning were interviewed during one session

lasting approximately 30–45 minutes to construct a description of their experience of breaking down the barriers of age = grade traditional elementary schooling.

The researcher created questions based on the-three-interview-series approach by Seidman (2013, pp. 20–23). One interview was conducted with each participant that included all three sections of the series. In the first section of the interview, the researcher invited each participant to reconstruct his or her life history leading up to becoming a principal. The purpose of this section of the interview was to establish if themes surfaced from the past that allowed a principal to be more receptive to changing the age = grade traditional model of schooling. In the second section of the interview, the researcher asked questions about the principal's experience when breaking down the barriers of the age = grade traditional model of schooling. The researcher also asked the principals to describe concrete experiences in classrooms in their schools to discern the essence of what it is like to be in that situation as a student and as a teacher from a principal's perspective. The third section of the interview asked a principal to reflect on his or her life experience and current experiences and determine where the school might go in the future in breaking down the barriers of age = grade traditional schooling. The researcher also asked about what best practices for multiage learning, mastery learning, and blended learning will be continued in the future in that school. The researcher believes this interview structure allowed the natural flow needed to be able to understand the essence of principals' perceptions about breaking down the barriers of the age = grade traditional model of schooling and best practices for multiage, mastery, and blended learning in elementary schools.

After coding and analyzing the data, themes emerged as findings for the study. Key findings that emerged from the study follow:

- The identification of four factors that influenced study participants to become principals.
- Five potential barriers to moving to a new model of elementary schooling.
- The identification of best practices for multiage, mastery, and blended learning in elementary schools.
- Descriptions of populations most often served by particular learning strategies, many of which resembled descriptions previously identified in the literature review.
- The intersections between multiage-, mastery-, and blended-learning strategies in elementary schools, many of which resembled intersections previously identified in the literature review.
- The identification of two components necessary to assist in the implementation of a new model of elementary schooling.

Conclusions

Drawing from the evidence provided in Chapter 4, the conclusions to the research questions are provided.

Central question and first sub-question: The central question was, How do principals describe their experience with the phenomenon of implementing a new model of schooling that breaks down the barriers of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools? The first sub-question was, What factors do principals perceive have

helped/hindered them from implementing a new model of elementary schooling that breaks down the barriers of age = grade traditional classrooms?

All six participants described their lived experiences and what has helped/hindered them from breaking down the barriers of the age = grade traditional model of schooling to varying degrees. Daniel explained he was more of a traditionalist and wanted to keep some things the same in his building. Matthew shared an experience where his teachers were ready to move at a much faster pace than he was comfortable with for a new initiative. As a new leader in her building, Francine was ready to create change to pedagogical approaches to support students learning at a deeper level. Carol was passionate about expanding multiage opportunities in her building, whereas Elise and Debra were hesitant to break down that barrier, except for outlier populations.

Participants also shared their focused life histories and four themes emerged that impacted their willingness/ability to move to a new model of elementary schooling that breaks down the barriers of age = grade traditional classroom. Four participants were influenced by others to become a principal, and two were influenced to go in the profession by their inner drive. Three of six participants described themselves as a change agent and four were curriculum specialists before becoming a principal. From these findings, one can conclude that principals who described themselves as change agents might be more willing to take the risk of trying new initiatives in their buildings. Also, principals who were curriculum specialists before becoming a principal might be more knowledgeable about pedagogy, thereby understanding the nuances of the curriculum at a deeper level and being able to support teachers through a curriculum-change process.

Five barriers to breaking down the age = grade traditional model of elementary schooling emerged in the findings. Participants described their experiences with the barriers of teacher capacity, progression of the curriculum, principal/teacher readiness for change, technology, and time/master scheduling. One can conclude from participants' responses that although these barriers exist, they are not insurmountable in the pursuit of changing the age = grade traditional model of schooling. All the principals connected to the overall theme that professional development and teacher commitment were necessary to assist in the implementation of a new model of elementary schooling.

The researcher was surprised that none of the participants spoke about the political, parental, or community beliefs that could be barriers to changing the age = grade traditional model of elementary schooling. One can conclude that the questions asked in the interview did not spark descriptions of these viewpoints to arise in the data. Being that public education is highly scrutinized in the world today, political, parental, and community beliefs will be explored further in the recommendations section in this chapter. The conclusions for the central research question and first sub-question are captured in Table 8.

Table 8

Conclusions Based on the Central Research Question and First Sub-question

Research Questions	Themes Related to the Questions	Conclusions based on the Themes
• **Central research question:** How do principals describe their experience with implementing a new model of schooling that breaks down the barriers of the phenomenon of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools? • **First sub-question:** What factors do principals perceive have helped/hindered them from implementing a new model of elementary schooling that breaks down the barriers of age = grade traditional classrooms?	• Four factors influenced study participants to become principals. • Five potential barriers emerged to moving to a new model of elementary schooling. • Two components are necessary to assist in the implementation of a new model of elementary schooling.	• Principals who describe themselves as change agents might be willing to take the risk of trying new initiatives in their buildings. • The principals who were curriculum specialists before becoming principals might be more knowledgeable about pedagogy. • Barriers exist, but are not insurmountable. • Barriers may be overcome by effective professional development and teacher commitment to moving to a new model of elementary schooling.

Three additional sub-questions. The three additional sub-questions follow: What do principals perceive to be the best practices, challenges, and unintended consequences for multi-age learning in elementary schools? What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools? What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?

All six participants extensively described multiage learning experiences in their schools. Participants spoke about using multiage learning groups for outlier populations, summer school, interest-based learning groups, and guided-reading groups. From these findings, one can conclude that principals are more comfortable using multiage learning strategies with outlier populations such as special-education or gifted-and-talented

students, allowing them to have personalized learning experiences based on their needs. One can also conclude that the principals interviewed were not comfortable moving to multiage learning groups for all students. They found this notion to be challenging to accomplish under the constraints of the traditional model of age = grade schooling that is customary in all elementary schools in the ABC School District. One unintended consequence that can be concluded from the data is that if outlier populations are those being served in multiage groups, then the majority of students who are on grade level are not given the opportunity to participate in these groups.

All six participants shared common responses in their descriptions of mastery-learning experiences. The theme of personalized instruction that specifically uses goal setting, formative assessment, and feedback between teacher and student emerged from the interviews as best practices for mastery learning. It seemed that participants used mastery learning and personalized learning as synonymous terms. The challenges that emerged focused on the barriers of teacher capacity, the progression of the curriculum, and time. Teachers have to know the progression of the curriculum to truly personalize instruction for each child. This transition takes a knowledgeable educator and time to occur effectively. An unintended consequence revolving around moving to more mastery learning/personalized learning in elementary schools is that some teachers may not be capable of the demands necessary. One can, therefore, conclude that effective professional development for teachers and teacher commitment are necessary to assist in the implementation of a new model of elementary schooling.

Participants discussed common responses when asked about blended-learning practices. The themes of mastery learning/personalized learning, communication, and

collaboration emerged as best practices for blended learning in elementary schools. From the findings, one can conclude that blended learning allows for digital tools/applications to be used in the classroom to enhance personalized instruction. One can also conclude that in the schools of the principals interviewed in this study, communication and collaboration among students, teachers, and parents has been enhanced since moving to a blended-learning environment. A challenge that emerged in the data was professional development for teachers about using technology. The use of technology in classrooms looks different based on the teacher's commitment to the 1:1 iPad initiative. Some teachers have a deep understanding of how to embed technology into instruction and some are still struggling with how to use the device. An unintended consequence that occurred in the ABC School District is that teachers and principals had to institute digital citizenship lessons with students to help them understand the responsibilities associated with using technology in the classroom. Also, students continue to need support in using technology appropriately. Table 9 captures the conclusions for the three sub-questions.

Table 9

Conclusions Based on the Three Additional Sub-questions

Research Questions	Themes Related to the Questions	Conclusions Based on the Themes
2. What do principals perceive to be the best practices, challenges, and unintended consequences for multiage learning in elementary schools? 3. What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools? 4. What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?	• Multiage and mastery learning tend to be used with outlier student populations. • Multiage, mastery, and blended learning all connect to personalized learning. • Professional development and teacher commitment are necessary to assist in the implementation of a new model of elementary schooling.	• Principals are more comfortable in using multiage-learning strategies with outlier populations such as special-education or gifted-and-talented students, allowing them to have personalized learning experiences based on their needs. • The principals interviewed were not comfortable moving to multiage learning groups for all students. • Participants used mastery learning and personalized learning as synonymous terms. • Effective professional development for teachers and teacher commitment are necessary to assist in the implementation of a new model of elementary schooling. • Blended learning allows for digital tools/applications to be used in classrooms to enhance personalized instruction. • Communication and collaboration among students, teachers, and parents can be enhanced in a blended-learning environment.

Recommendations

Based on the findings, results, interpretations, and conclusions of this study, the following recommendations are offered to support changing the age = grade traditional model of elementary schooling specifically in the ABC School District. Hopefully, the recommendations will be meaningful for other districts. Additionally, recommendations for further study will be discussed to expand the body of knowledge around the phenomenon of implementing a new model of schooling that breaks down the barriers of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools.

Recommendations for the ABC School District.

- Ongoing professional development for the implementation of multiage-, mastery-, and blended-learning strategies in elementary schools. Promote personalized learning that meets the needs of all students during professional-development sessions.
- Autonomy for principals who would like to continue to move their schools toward a new model of elementary schooling.
  - Create a process for principals to submit proposals of the vision for their school and the implementation plan.
  - Provide support and networking for those principals who take the risk to be innovative in their buildings.
  - Celebrate innovative schools publicly to get community acceptance.
- Conduct a quantitative study that compares achievement levels at innovative schools that are focusing on implementing a new model of elementary schooling to traditional schools in the district.
- Conduct community workshop sessions that give the overview of changing the age = grade traditional model of elementary school to be able to answer questions and gain community acceptance.

The researcher perceives each of these recommendations to be possible, given the current structure and practices of the ABC School District. However, each recommendation will take planning and time to accomplish effectively.

Recommendations for further study. The review of the literature clearly showed a lack of research on the phenomenon of implementing a new model of schooling

that breaks down the barriers of the age = grade traditional classroom using multiage-learning, mastery-learning, and blended-learning strategies in elementary schools. The findings, results, interpretations, and conclusions of this study revealed the importance of professional development and teacher commitment when embarking on implementing a new model of elementary schooling. Finally, the important aspects of political, parental, and community beliefs revolving around changing the age = grade traditional model of schooling did not surface in the data in this study. Given these facets, the researcher recommends the following for further study:

- Replicate this phenomenological study in another school district where aspects of multiage, mastery, and blended learning are transpiring in elementary classrooms and compare with this study.
- Conduct a mixed-methods study that brings in the quantitative aspect of student-achievement data to analyze the impact of these learning strategies on student performance.
- Conduct a qualitative phenomenological study that focuses on the impact of professional development and teacher commitment when implementing strategies that change the age = grade traditional model of elementary schooling.
- Conduct a research study on the impact of political, parental, and community beliefs when implementing strategies that change the age = grade traditional model of elementary schooling.

Summary

This phenomenological study sought to unveil the essence of the lived experiences of six elementary school principals who have begun to break down the barriers of the age = grade traditional school model by implementing various aspects of multiage-, mastery-, and blended-learning strategies in their schools. Many conclusions were revealed in the data, but perhaps the most important was that barriers to changing the age = grade model of elementary schooling are not insurmountable. This study showed that there is a willingness and eagerness to make changes to the traditional age = grade elementary school model to meet the needs of students in the digital age.

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Appendix A: Request for Conducting a Research Study (Not a Survey)

Name of Researcher _____ Date of Request _____ Sponsoring Institution _____

Location(s) In Which Research Will Occur _____

ABC Employee ☐ Yes ☐ No

Before conducting a research study, the study must be approved by the Superintendent or designee. In order for your research study to be considered for approval, attach a description of your study (including a list of finalized survey questions and/or finalized questionnaire), as well as, a signed copy of your Institutional Review Board (IRB) approval.

#	Questions	Yes	No	?
1.	Will subjects receive money or gifts in exchange for their participation?			
2.	Does the research involve the release of personal student information such as name, address, academic history, etc.?			
3.	Will the research require students to miss instructional time during the school day?			
4.	Does the research require parental permission?			
5.	Will the collection of data involve audio or visual recording of students?			
6.	Will the collection of data require 30 or more minutes of staff time?			
7.	Will the research involve the release of personal staff information such as name, address, age, gender, etc.?			
8.	Does study participation involve any inherent risks to ABC School District?			
9.	Will ABC assume any costs beyond time for participation in the study?			
10.	Will ABC be held responsible for consequences resulting from participating in the study?			
11.	Does the study present any possible inaccurate and/or inflammatory information related to ABC?			
12.	Is ABC the only school system participating in the proposed research?			

13.	Will ABC be provided with an in-depth explanation of the study's findings at no cost?			
14.	Will participants be able to withdraw from the study at any time?			
15.	Will ABC staff members be able to review the study findings prior to publication and deny publication with reasonable cause?			
16.	Has the researcher's proposal been approved by the sponsoring institution's IRB?			
17.	If the research is occurring in one school, does the principal of the location support the research?			
18.	In the space below, provide a written description on how this research will benefit or impact ABC schools.			

For ABC School District Use Only

		Yes	No
Signature of Principal(s)	**Date**	**Recommendation**	

		Yes	No
Signature of Supervisor of Testing and Accountability	**Date**	**Recommendation**	

		Yes	No
Signature of Director (appropriate department)	**Date**	**Recommendation**	

		Yes	No

Signature of Superintendent or Designee	Date	Recommendation

Appendix B: Interview Protocol and Questions

Introduction:

My name is Hope Fuss and I am a doctoral candidate at Drexel University. I am passionate about this research topic, but in approaching the interview I have set aside:

- Prejudgments
- Biases
- Preconceived ideas about breaking down the barriers of the age=grade traditional model of schooling and best practices for multi-age learning, mastery learning, and blended learning in elementary schools.

My previous experience and knowledge with this topic are irrelevant in relation to this study, and I will conduct myself without prejudice for anything shared by you. I am exclusively interested in your lived experiences with breaking down the barriers of the age=grade traditional model of schooling and best practices for multi-age learning, mastery learning, and blended learning in your elementary school.

For the purpose of this study, the following definitions are used:

- **Age = grade traditional schooling:** the traditional factory model of education where students are classified and then taught a specific curriculum based on being a certain age (Mann, 1970).
- **Multiage learning:** the purposeful placement of students more than one year apart in the same classroom (Bacharach et al., 1995).
- **Mastery learning**: the process of feedback, correctives, and enrichment (Guskey, 1990.) Teachers can use this process with students to allow them to

learn at their own pace and truly master the instructional concepts that are being taught.

- **Blended learning:** the combination of online learning and brick and mortar schooling (Horn & Fisher, 2017).

The interview should last approximately 45–60 minutes and I will ask up to 10 questions pertaining to your experience with breaking down the barriers of the age=grade traditional model of schooling and best practices for multi-age learning, mastery learning, and blended learning in elementary schools.

I would like to audio record this interview and have it professionally transcribed. Do I have your permission to audio record this interview today?

Your privacy is very important to me and to Drexel University. I assure you that the information that you share with me will remain confidential.

Do you have any questions before we begin?

The first section of the interview will focus on your life before becoming a principal.

Interview Section 1: Focused Life History

1. How did you become a principal? Please talk to me about your past life before becoming a principal. What events and experiences led you to this profession?

The central research question and four sub-questions guide the rest of the interview. Central research question: How do principals describe their experience with implementing a new model of schooling that breaks down the barriers of the phenomenon of the age=grade traditional classroom using multi-age learning, mastery learning, and blended learning strategies in elementary schools?

1. What factors do principals perceive have helped/hindered them from implementing a new model of elementary schooling that breaks down the barriers of age=grade traditional classrooms?
2. What do principals perceive to be the best practices, challenges, and unintended consequences for multi-age learning in elementary schools?
3. What do principals perceive to be the best practices, challenges, and unintended consequences for mastery learning in elementary schools?
4. What do principals perceive to be the best practices, challenges, and unintended consequences for blended learning environments in elementary schools?

The next section of the interview focuses on your lived experience as a principal with breaking down the barriers of the age=grade traditional model of school and best practices for multi-age learning, mastery learning, and blended learning in elementary schools.

Interview Section 2: The Details of the Experience

1. To what extent have you experienced the need of breaking down the barriers of age=grade traditional schooling? Multi-age learning? Mastery learning? Blended learning?
2. Please tell me about experiences in your school with multi-age learning. What does a student experience in these classrooms or situations? What does a teacher experience?

3. Please tell me about experiences in your school with mastery learning? What does a student experience in these classrooms or situations? What does a teacher experience?
4. Please tell me about experiences in your school with blended learning. What does a student experience in these classrooms or situations? What does a teacher experience?

The final section of the interview focuses on your reflection of the meaning of your experiences with breaking down the barriers of the age=grade traditional model of schooling and best practices for multi-age learning, mastery learning, and blended learning in your school now and in the future.

Interview Section 3: Reflection on the Meaning

1. Given what you have told me about your life before becoming a principal and your experiences with breaking down the barriers of age=grade traditional schooling, where do you see this going in the future for you and your school?
2. What best practices of multi-age learning do you see continuing? Why?
3. What best practices of mastery learning do you see continuing? Why?
4. What best practices of blended learning do you see continuing? Why?

Before we finish the interview is there anything that you would like to add or ask me about breaking down the barriers of the age=grade traditional model of schooling and best practices for multi-age learning, mastery learning, and blended learning in elementary schools?

This concludes the interview. Thank you for your time.

Appendix C: Sample Letter of Consent

Dear Participant,

The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that you are free to decide not to participate or to withdraw at any time without affecting your relationship with this school, the researcher, or the ABC School District.

The purpose of this study is to examine how elementary principals perceive and describe their experiences with multi-age mastery learning, blended learning, and breaking down the barriers of age=grade traditional schooling. The method will be a phenomenological study where interviews will be completed over the course of several weeks. The interviews will be recorded so they can be later transcribed to look for common themes among all participants.

Do not hesitate to ask any questions about the study either before participating or during the time that you are participating. I would be happy to share my findings with you after the research is completed. However, your name will not be associated with the research findings in anyway, and only the researcher will know your identity as a participant.

There are no known risks and/or discomfort associated with the study. The expected benefits associated with your participation are for you to have an opportunity to share about your experiences and perceptions as a principal and your involvement in a doctoral research study.

Hope A. Fuss

Drexel University

Adapted from Creswell (2013)