2022

Parent Perceptions of School Engagement Using Communication Apps to Support Struggling Readers

Elizabeth Anne Dewhurst
Walden University

Walden University

College of Education

This is to certify that the doctoral study by

Elizabeth Anne Maurer Dewhurst

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Amy White, Committee Chairperson, Education Faculty
Dr. Blessing Adeoye, Committee Member, Education Faculty
Dr. Jennifer Seymour, University Reviewer, Education Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2022

Abstract

Parent Perceptions of School Engagement Using Communication Apps to Support

Struggling Readers

by

Elizabeth Anne Maurer Dewhurst

MA, George Mason University, 1998

BA, Messiah, 1992

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

May 2022

Abstract

Because parental engagement has been shown to have a positive relationship with K-12 student academic achievement, the problem for this study was that though information and communication technology applications (ICT apps) are available to engage parents with teachers and schools, it was unclear whether parents are aware of and use them. The purpose of this qualitative study was to explore if parents of struggling readers in a Title I middle school were aware of school-parent communication apps, and if they perceived them as useful for partnering with schools to improve student academic success. Connectivism was the conceptual framework for the study because it contextualizes how schools and parents use technology for knowledge-sharing in the digital age. The research questions asked about parents' awareness of ICT apps, their perspectives on their use for communication with the school, and the communications they believed would support their engagement. Semistructured interviews with a convenience sample of nine participants were coded inductively using the Quirkos platform. The findings indicated parents prefer short message service texting and Gmail school communication, and they prioritized timely, two-way communication with the school to support student academic achievement. The findings contribute to positive social change by providing stakeholders with new information on how to simplify and leverage ICT apps for school-parent engagement that supports academic gains. The implications of this study include consideration of ICT apps as an integral component that supports equity in school communication policies, particularly in Title I schools, where school-parent engagement is federally mandated.

Parent Perceptions of School Engagement Using Communication Apps to Support

Struggling Readers

by

Elizabeth Anne Maurer Dewhurst

MA, George Mason University, 1998

BA, Messiah, 1992

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

May 2022

Dedication

This dissertation is dedicated to my children: Benjamin, Hannah, and Matthew. I love each of you forever.

To my husband, Tom—I love you and am immeasurably grateful because without your help and support this EdD degree would not have been possible.

To my family and friends, thank you for your encouragement and patience, even when my laptop and APA 7 book showed up on trips or kept me from joining you.

To my grandmother, Ruth Elizabeth Sower, a teacher by profession, who when I thought I couldn't learn 3-digit multiplication, showed me I could, one step at a time.

To my dad, David Maurer, who is never far from my thoughts and to whom feel deep gratitude for having known and been shaped by our conversations—often about what we were reading.

Last, I dedicate this dissertation to the people who inspired it: my creative, empathetic, intelligent, talented, and often hilarious middle school learners and their parents. Thank you to each parent who shared your time, stories, and wisdom—I will be grateful to you always.

Acknowledgments

I am grateful for my excellent doctoral chair, Dr. Amy White and our first conversation when she said, "As educators, we know things." Her belief that there was value in the kernel of what this study would eventually explore gave me the encouragement I needed to pursue it. Thank you for your guidance—it equipped me to reach a life-long dream of earning a doctorate. I owe a dept of gratitude to my second committee member, Dr. Blessing Adeoye, whose questions and feedback helped to build my understanding and improved the reliability of my study. Because of their mentorship, I am eager to continue pursuing qualitative research that can inform equitable uses of technology in educational policy and practice—especially in ways that expand the diversity of perspectives and voices and shape decisions for positive social change.

Thank you to the middle school leader who graciously vetted my study, granted his permission to recruit parents, and communicated the opportunity to participate to the parent community. Thank you to my reading intervention colleagues and parents who spread the word about my study, resulting in the parent interviews that made it possible. Thanks also to the school system leadership who approved the study, and to the many Walden University staff and faculty who assisted me along the way. Last, thank you to the Chief Council of State School Officers and the Office of the State Superintendent for your work with the state and national teacher of the year program. The honor of being named a state teacher of the year in 2017 provided the full scholarship that made my EdD / technology degree possible.

Table of Contents

Chapter 1: Introduction to the Study

Learning to read proficiently is a responsibility shared among teachers, parents, and students. The positive effect of parent or caregiver involvement on student achievement has been well documented (Houri et al., 2019; Jensen & Minke, 2017; McCoy et al., 2017). However, effective parental involvement to support struggling readers is a challenge (Orkin et al., 2017). Although students experiencing low socioeconomic status (SES) receive federal Title I funding for parent engagement and literacy intervention, they tend to experience this stage of their development as school-parent engagement declines (Alley, 2019). In the digital age, ubiquitous information communication technologies (ICTs) like cell phones with text messaging applications (apps) can provide new, equitable approaches for leveraging the benefits of parent engagement to students with the greatest academic needs who are furthest from opportunity. This study is needed because there are few studies on parents' perceptions of ICT apps for school-parent engagement used to support struggling readers in Title I middle schools. New understandings can inform school-parent engagement practices that align with secondary students' and contribute to improved literacy performance.

In this chapter, I provide the background, problem statement, purpose of the study, research questions, and the conceptual framework for my study. Next, I explain the study's key terms and discuss my study design by providing my rationale for why a qualitative study was the best way to investigate the parental perspectives on ICTs and their school engagement. Finally, this introductory chapter addresses the study's assumptions, scope and delimitations, limitations, and significance.

Background

On a national level, increasing parent engagement with the school for student success is a priority and a matter of social equity (Caldas et al., 2019). The 2015 federal Every Student Succeeds Act (ESSA) requires parent and family engagement and defined it as the "participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities" (.gov, 2018a). Further, under ESSA, family engagement with the school must be in a format accessible to the parent, particularly for those with limited literacy and the economically disadvantaged (JSS [The School System].gov, 2018b). Improving reading proficiency among struggling readers is also a national priority (DeVoss, 2019). Currently, however, the literature does not contain the use of communication applications (like the Remind app) for struggling readers in Title I schools (Keil, 2016; Park & Holloway, 2017; Snell et al., 2018).

In the Jefferson Public School System (JPSS; pseudonym), a small district in the eastern coastal area of the United States, eighth grade reading outcomes are among the lowest of comparable large cities and districts in the United States, with 74% percent of eighth graders performing below grade level according to the 2018-19 National Assessment of Educational Progress (National Center for Education Statistics [NCES]c, 2019). Researchers have also indicated that parent engagement using school-provided reading interventions contributes to literacy acquisition and reading improvement; it is one of several, interconnected influences on reading development, particularly in adolescence (Fletcher, 2017; Swanson et al., 2017). Although the literature

provided evidence of a clear, positive relationship between family and school engagement and student success (Fredricks et al., 2019; Gerzel-Short & Conderman, 2019), there is a gap in practice in understanding whether apps on ubiquitous ICTs (like parent cell phones) are being used to improve engagement with parents of struggling readers (Park & Holloway, 2017). This also reflects a broader gap in the literature. Posey-Maddox and Haley-Lock (2020) noted the importance of expanding research on two-way school-parent communication, particularly within urban, Title I settings due to the accountability requirements and limited resources of schools, the employment and caregiving challenges of parents, and the tendency for these and other factors to drive misaligned and ineffective communication strategies around student achievement.

Problem Statement

The problem in JPSS is that although ICT apps are available to engage parents with teachers and schools, it is unclear whether parents are aware of and use these apps to help them participate in and interact with the school to support student achievement. As a matter of equity, students must have the same access to the fundamental components that can assist in their progress towards college and career readiness—and school-parent engagement aligned to their needs is part of that foundation. Parent perceptions about the school's expectations for their engagement, positive perception of those expectations, and positive perceptions about the opportunities to meet school engagement expectations are all contributing factors in how effectively the school-parent engagement impacts achievement (DeBacker et al., 2020; Watson & Bogotch, 2015).

Although the literature indicated the effectiveness of engagement's contributive constructs (DeSpain et al., 2018; Park & Holloway, 2017), there is a need for best practices that align engagement with the needs of striving readers in urban Title I middle schools. Moreover, although the use of ICTs is a practice indicated in the research for increasing parent engagement regardless of the student's culture or economic level, positive student outcomes depend on how the ICTs are used, such as actively with the student's teacher rather than passively for receiving information (Beecher & Buzhardt, 2016; Ziden et al., 2020). Despite the positive impacts of parent engagement and the ESSA school requirements, deficits in the literacy performance of Title I urban middle school students persist.

Purpose of the Study

The purpose of this qualitative study was to explore whether parents of struggling readers in an urban Title I middle school are aware of parent-school communication apps and whether they perceive them as useful for partnering with schools to improve student academic success. This literature review contextualizes the study by providing a synopsis of the existing literature on the use of ICT apps for school-parent engagement to support student reading intervention at the elementary and secondary levels, as students in the middle grades can span both. Escobar (2019), Erdener and Knoeppel (2018), and Elish-Piper (2016) indicated that technologies like ICTs can be used to improve school-parent engagement and, therefore, improve student achievement. Foci for improving engagement in the target population tends to cluster around communication and cultural competency.

Although the recent literature indicated that communication is the most common strategy for achievement, positive student outcomes require a communicative shift away from a uniform, school-centric-approach in favor one that is family-centric and that more broadly accounts for families' cultural variations (Hill et al., 2018). This broadening approach begins with the student and extends to the family. Specifically, family-centric communication is shaped by the school employing involvement strategies that are relevant to adolescents' achievement (Posey-Maddox & Haley-Lock, 2020). Such strategies include building a school culture grounded in trusting relationships among all invested in the school, student autonomy for their learning that includes setting their own goals and acknowledging growth as well as mastery, and behavior expectations that account for students' diverse cultural needs rather than top-down, adult-driven authoritarian social control (Posey-Maddox & Haley-Lock, 2020).

Along with the student, a family-centric engagement approach that bolsters achievement requires an of understanding parent perceptions. This communication acumen was linked to decreasing the disengagement trends seen the racially and ethnically diverse target population by increasing student engagement and achievement through parent agency (Jensen & Minke, 2017). For at least 20 years, the education field has known that ethnically diverse parents—regardless of their own educational levels— recognize the importance of their role in supporting their students' academic achievement (Gutman & McLoyd, 2000). With increased access to and understanding of authentic parent and student voices, schools can be better positioned to improve pedagogy and school social norms through gains in cultural competency, which in turn have been found

to support the relational connections adolescents need for achievement (Fredricks et al., 2019). The research questions for the study were designed to capture the perspectives of parents regarding ICTs for the purposes of shaping future two-way, school-parent effective, equitable engagement so that students in urban reading intervention classes can better demonstrate their full potential and progress to full college and career readiness.

Research Questions

The research questions addressed the perceptions of parents about communication apps because it is clear from the literature that parent engagement is a crucial and determining factor in student literacy development needed even before school enrollment age (Bojczyk et al., 2019; Hampden-Thompson et al., 2013; Martinez, 2011). The research questions were as follows:

1. What experiences do parents report in using communication apps as a tool for increasing their connection to the school, other parents, and school engagement efforts to support struggling readers?

2. What changes in student academic progress do parents describe when connecting to the school with communication applications?

Conceptual Framework

The conceptual lens for this qualitative study was the connectivism learning theory. Posited in 2004, Siemens reflected that in the digital age "the connections that enable us to learn more are more important than our current state of knowing" (p. 4). Technology and people are both necessary to process the complexities relevant learning requires (Kolowich, 2014). This framework provided a context for my study's

exploration of parental perceptions of how ICTs affect their connections to the school, and according to these perceptions whether these connections are relevant in supporting students' reading gains. Connectivism's core principles, foundations, criticisms, and applications to the study's approach are discussed in more detail in Chapter 2.

Nature of the Study

In this qualitative study, I explored parent awareness and perspectives about ICT apps and how they can, as part of two-way school-parent engagement, facilitate students' literacy achievement. A qualitative study design was selected because it could best capture the in-depth details from a small sample of a specific subset of the population rather than a qualitative design, which would require a larger sample size to draw a broad generalization (see Wallace & Kuo, 2020). Within the qualitative research tradition paradigm, this study was informed by a constructivist-interpretivist approach because its design and methodology assumed the phenomena, what parents perceive about ICTs and achievement, can be examined and understood through iterative analysis (see Denzin, 2009).

The goal of the study was to build new understandings of the perspectives of parents of struggling readers in a Title I middle school about their awareness and uses of ICT apps for their communication with the school to support student success. The data tools for the study were semistructured interviews with an interview protocol and member checks. The parents were asked to describe their awareness of and experiences with their ICT apps for school communication and the kinds of communications they

believed necessary to support the academic performance of their struggling readers (see Appendix A for the interview protocol and questions and Appendix B for coding table information).

Definitions

The following definitions of key terms are listed below for clarity within this study.

Intervention: Instructional strategies used to improve student reading performance (JSS [The School System] Office of the State Superintendent (OSSE) 2013).

Literacy: Reading, writing, speaking, listening, viewing, technology, and research skills secondary students need to progress to college level learning or career in the workforce (JSS [The school system] OSSE, 2013).

School-parent, parent-school or family engagement: Any adult primary or cocaretaker of the student with primary responsibility for the child's wellbeing, which may include a grandparent, other relative, or a foster parent. These responsibilities include decision making and active involvement in the child's education at school through regular, two-way communication about the student's academic learning and other school activities (JSS [The School System], 2018a).

Struggling reader: Students who perform below grade level in one or more literacy skills (JSS [The School System] OSSE, 2013).

Assumptions

This study was grounded on four key assumptions. First, I assumed that the parents would respond to the study's questions with accurate, reliable information about

their ICT understandings and their school communications. Second, I assumed that to be relevant to the study, the school had attempted reading intervention communications using ICT apps with the parents. Third, I assumed that the parents had experienced changes in students' literacy performance after the school communicated using the designated technology tools. Last, I assumed that the participating parents would need the digital literacy awareness and skills sufficient for analyzing the ICT app information from the school and respond when needed to support their middle school struggling readers.

Scope and Delimitations

In this study, I explored the perceptions of parents who had struggling readers in an urban, Title I middle school in the eastern coastal area of the United States. The goal of the study was to build new understandings about the extent to which the parents were aware of and used their ICT apps for parent-school communication and whether they perceived these as useful for partnering with schools to improve student academic success. Although the literature provided evidence of a clear, positive relationship between family and school engagement and student success (Fredricks et al., 2019; Gerzel-Short & Conderman, 2019), there is a gap in practice as to whether apps on ubiquitous ICTs (like parent cell phones) are being used to improve engagement with parents of struggling readers (Park & Holloway, 2017). Additionally, there is a need extend the literature on effective engagement's contributive constructs (DeSpain et al., 2018; Park & Holloway, 2017) to include best practices that align engagement with the needs of striving readers in urban Title I middle schools.

Glatthorn (1998) described delimitations as the logical boundaries a researcher sets to narrow the focus of the study. The data were collected from a subset of parents of struggling readers in one Title I middle school whose students qualified for and were enrolled in the school's reading intervention program required by the school district. Study participants were screened to ensure that the students enrolled in the program were asked to confirm their parental responsibility for the student and to specify their relationship to the student. The parents needed to use their cell phone texting and apps for communication with the school. Of the approximately 90 students enrolled in the program, the parents of 10 students indicated interest in participating in the study and nine completed their interviews, all of whom were African American. Further, the school was an urban middle school whose population's income level was low enough to qualify for Title I funding. As a result of these delimitations, the findings are limited to schools whose parent engagement policies and practices involve ICT app-based communications. Further, the findings provide rich data that may be most readily transferrable to schools with populations that qualify for Title I funding and similar cultural contexts. Future researchers may wish to examine the parent perceptions of ICT app use for school engagement that supports other student challenges or within other socioeconomic or cultural contexts.

Limitations

The study was subject to two limitations: possible researcher bias and the number of study participants. As the only person who collected and analyzed the data and described the findings, I included rigorous reflexivity practices to examine and mitigate

my personal biases (Johnson et al., 2020). Because this study was qualitative, I addressed

the limitation of its small sample size by focusing on saturation and its relevance to the

study as well as using iterative analysis to make evidence-based generalizations about its

findings (Leech, 2005; Mason, 2010).

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

By providing data for improving Title I urban middle school reading performance,

this qualitative study may be helpful to local schools, local education policy makers,

and those located in similar learning communities. Secondly, the study may add to the

literature with respect to how to use ICTs to engage effectively and equitably parents of

struggling readers to boost their academic achievement. Last, the findings may generate

opportunities for positive social change.

First, the study may prove helpful to local school and education policy makers by

providing new information useful for their compliance with the ESSA-required home-

school engagement compact for Title I schools. Further, school leaders and

teachers may gain guidance on how best to shift their family engagement practices and

resources towards investment in teacher professional development and app-based

strategies that inform parents how they can support specifically adolescent needs for

reading achievement: Student motivation and belief that they will improve are

particularly crucial for middle school student reading development (Fletcher, 2017).

In addition to more effective parent-school engagement policy and practices, the

study may add new data in the literature on how to improve local literacy intervention

practices. These may contribute to meeting learning needs of ethnically diverse

adolescents in the school, through home-based learning strategies and increased two-way, family-centric, culturally competent communication (Hamlin & Flessa, 2018; Hill et al., 2018). Closing these and similar gaps in local practice can provide new evidence that can inform and increase the efficacy of JSS middle school school-parent engagement efforts by using ICT apps to improve student reading proficiency and contribute to the literature on effective practices for urban adolescent literacy development.

Positive social change is another area to which this study may contribute. Expanded understandings of effective parent-school engagement through ICTs for literacy intervention can help shift the local and national drop out trends towards college and career readiness. With decreased dropout rates and increased college and career readiness performance, students can forge new pathways towards their postsecondary options. Albro and Turner (2019) found that starting in the upper elementary and middle school grades, literacy intervention grounded in career exploration and students' aspirations had a positive correlation to both improved self-identity and literacy skill development. Turner (2019) argued that for K-8 Black students' 21st century-readiness, literacy education must account for and incorporate both employment dreams and community knowledge. Equitable access for all students' postsecondary gainful employment, vocational training, or college admission is a priority, and the engagement in middle grades plays a pivotal role in the process.

Last, the findings of this study may present opportunities for positive social change that cascade into U.S. higher education and the workplace. Improved academic

achievement can lead to more college and career-ready, ethnically diverse students matriculating from urban Title I schools with equitable access to employment. With this access, students gain agency for 21st century workplace competencies in both hard (e.g., technical) and soft (e.g., communication and task management) employability skills (Fernandez & Liu, 2019; Hernandez-Gantes et al., 2018; Person et al., 2017). Thus, effective parent-school engagement can contribute toward an upward trajectory of student motivation and literacy achievement, with broad implications for positive social change in education and society as a whole, and forge an emerging society that can better leverage an increasingly diverse workforce for digital age adaptability (Hill et al., 2018, Yavuz et al., 2019).

Summary

In this chapter, I introduced the legislative background defining parent engagement and provided contextual information about the below-grade level JPSS middle school literacy performance, the subsequent deficits for college and career readiness, and the inequities supported by the data at the school and system levels. The central problem was presented as not knowing whether or how parents of struggling readers perceive ICT apps as a means for their engagement and its contribution to students' achievement. The chapter then addressed the study's significance. First, its findings may contribute to the literature on how schools can improve their engagement efforts with parents of striving readers by leveraging ICT apps. Second, the findings may help inform the school and system levels of policy and practice in areas such as ICT app-based parent engagement and literacy intervention. Last, the findings of this study were

connected to better potential outcomes for students' college and career readiness and more equitable access to employment in the digital age, positing that these shifts are indicative of positive social change for the learners and for society as it benefits from greater overall workforce diversity.

Chapter 2: Literature Review

The JPSS middle school reading performance at the state and city school system levels ranks among the lowest in the United States. On the 2018-19 National Assessment of Educational Progress, commonly known as the Nation's Report Card, JPSS eighth grade students tied with New Mexico and Alaska for the lowest state reading performance at seven points below the national average (NCESa, 2019). In addition to overall composite school scores, the inequity of student reading achievement—the majority of JPSS students are Black (60%) and are performing 64 points lower than their White peers at eighth graders in reading—is also of concern (NCESb, 2019). Moreover, only 13% of Black JPSS students met the SAT college and career-ready benchmark set by The College Board compared to 75% of their White peers (JSS [The School System OSSE, 2019).

One potential solution posed to address the disparity between the national average and JPSS students and the disparity between Black and White student scores is better school-parent engagement. Although there is agreement in the literature that parent engagement is an important factor for positive student outcomes, its capacity for improving urban Title I middle school literacy performance is unknown (Anthony & Ogg, 2019; Day & Dotterer, 2018). The problem in JPSS is that although ICT apps are available to engage parents with teachers and schools, it is unclear whether parents are aware of and use these apps to help them participate in and interact with the school to support student literacy achievement. The purpose of this qualitative study was to explore whether parents of struggling readers were aware of parent-school

communication apps, and if they perceived them as useful for partnering with schools to improve student academic success.

To contextualize the study, this literature review addresses recent findings addressing how ICT apps are used for school-parent engagement to support struggling readers' achievement. In the first section, I describe and defines connectivism, the study's conceptual framework, its origins as a learning theory from connectionism, and how it emerged and later diverged from its two primary contributing theories: behaviorism and social constructivism. The second section synthesizes current literature about school-parent engagement for middle school students' reading achievement and the effects of Title I requirements. Additionally, in this section, I review evidence in the literature characterizing the role of ICTs in recent school-parent engagement and within the target population. Next, I examine the documented barriers and effective engagement practices with ICT apps. In the last section, I address the gaps in the literature on parents' awareness and perspectives of these apps as engagement tools for partnering with the school in their students' efforts toward grade level reading performance.

Literature Search Strategy

This literature review was conducted using the following academic databases: ProQuest Central, SAGE Journals, ERIC, and EBSCO. Key search terms and term combinations for the review included the following: *parent engagement*, *struggling readers*, *cell phone apps*, *student achievement*, *connectivism*, *literacy intervention and middle school*, and *ICTs*. In my initial broad searches using ProQuest, ERIC, and EBSCO, I gathered data on student achievement, parent engagement, and

literacy interventions at any level, then narrowed those based on the target population.

SAGE and Google Scholar were primarily useful for findings on cell phone apps and

ICTs, as was mining references from journal articles located in these databases. Seminal

works on the connectivism learning theory and its predecessors were found using Google

Scholar, SAGE, and ERIC in addition to mining references of other sources. The review

is presented in two parts: (a) the conceptual framework, including its definition, origin as

a learning theory, limitations, and value to the current study; and (b) the current literature,

which is organized into themes of parent engagement for student reading achievement,

the ubiquity of ICT apps, and effective ICT parent-school engagement practices. These

themes and their subthemes address the prior knowledge in relevant scholarship on ICTs

and parent engagement aimed at reading student skills and its areas of agreement,

divergence, and gaps as they pertain to this study.

Conceptual Framework

The conceptual framework for this study was connectivism. This section (a)

provides a definition of the concept, its development, and applications as a theory of

learning; (b) presents examples of its limitations posed in the literature; and (c)

illustrates its value relevant to this study. Major, foundational theories are presented in

order of their relevance to the development of connectivism.

Definition of Connectivism

Published as a new theory describing how learning occurs in the digital age,

Siemens (2004) defined connectivism as learning through "actionable knowledge" (p. 5).

Viewed through this lens, the internet's continuous connections of humans

and technology have redefined knowledge itself (Siemens, 2004). Since its emergence, debate has continued about whether connectivism is a complete learning theory (Mattar, 2018; Pando, 2018). However, a recent meta-analysis by Downes (2019), one of the theory's contributors, posited that connectivism remains an important contributor online and within brick-and-mortar educational settings, spanning elementary to postsecondary and adult training, and in areas of society beyond institutions of learning (Madhok et al., 2018).

In the digital age, the information people need for accurate decision making is complex and changing so rapidly that reliance on learning via single source of static fact lists is obsolete. Instead, all points of connection, or nodes, within and among human brains, computers, and networked communities in (but not limited to) organizations, societies, and globally contribute to knowledge in the digital age, making it more relevant and therefore actionable and valuable (Siemens, 2004). These networked nodes, or learning communities, cultivate information that can be considered knowledge within a connectivism context.

Learning communities exist because one or more nodes share interest in similar information, which exists in a variety of formats, including text or images (Siemens, 2006.) Most recently, learning happens when multimedia data are shared through ICTs in real time and among nodes spanning human, cell phones, apps, and more. Connectivism reflects and describes the cyclical process of networked communities seeking information, sharing it, and creating new actionable knowledge (Siemens, 2006). These adaptive capacities are required for digital age learning because the volume and

complexity of knowledge humans need far outpaces past structures, such as textbooks, or other past systems of organizing ideas.

Development and Applications as a Learning Theory

Epistemologically, connectivism explains digital age learning as a phenomenon of continuous, networked knowledge sharing and decision making by which the network gains new, relevant knowledge and connections. These cyclical components are essential and ensure the relevance; efficiency; and, therefore, the survival of adaptable learning communities whose decision making thrives on, not despite global, accelerated change. Connectivism provides a way to understand how a community's diversity and the online information sharing and education among its members are integral to its capacity for adaptation (Siemens, 2004). Adaptation is maximized as the diversity of community members' experience or education increases. The community's ability to learn new, actionable knowledge is more valuable in the connectivism framework than knowledge within a node or shared across the network at any point in time (Goldie, 2016; Siemens, 2004). Approached with a connectivism lens, individual and societal learning needs are best served through networked communities' unbounded, perpetual learning.

Connectivism emerged from several theories—behaviorism, social constructivism, and connectionism—that predated the opportunities and challenges of today's technology, most crucially the internet, and therefore provided insufficient capacity for describing learning in the digital age (Duan et al., 2019). Foundational to all these approaches is the concept that learning is organized in a certain way within an individual or among a group. When understood from connectionism, the most recent

of these frameworks, the brain's neural organization and capacity to learn become the inspiration for these same elements in computer systems, such as when a computer uses its layers of circuity to learn new information, like recognizing a pattern (Downes, 2012).

Computer systems emerged in the late 1990s as networks expanded beyond intranets, or networks bounded within organizations, and authored in specialized web languages that put web-based creating and connecting in the hands of end users rather than only those of developers. As a result of this shift toward networked technology, this new technology and humans reorganized the world and human understandings of it. More specifically, these new connections among users and technologies created user-driven, cloud-based social media and web content authored by mainstream users in real time, which has come to be known as Web 2.0 (Downes, 2012). Connectionism, too, expanded to reflect these Web 2.0 global technology enhancements.

Likewise, these connections fueled advances in education by shifting siloed learning objects to shared learning artifacts to learning management systems. For example, in higher education, online or distance-based learning expanded beyond geographic constraints, and distributive learning added the capacity for learning synchronously or asynchronously (Downes, 2012). To address this expansion to learning technology and learning networks, Siemens originated the term "connectivism" to represent learning networks in 2004. His collaboration with Downes (2012) resulted in their global, free, e-learning course in 2008, which is considered the first Massive Open Online Course (MOOC).

In addition to connectionism, two other theories influenced Siemens as he developed connectivism: social constructivism and behaviorism (Goldie, 2016; Siemens, 2006). Published originally in 1935, Vygotsky's social constructivism theory of learning posits that the human brain creates knowledge first in the mind and then through social interaction, such as though a child's role playing (Vygotsky & Kozulin, 1986). Through these iterative processes, knowledge is constructed and reconstructed in relation to new experiences. However, for Siemens, social constructivism fell short as a reflection of learning in the digital age given his assertion that knowledge can exist outside the human mind in computers and networks, and those networked technologies allow learning to occur (Siemens, 2006). Social constructivism values learning itself and accounts for learning as a process inside a person but does not account for learning possibilities beyond it.

Siemens (2006) also took issue with behaviorism's limitations, finding it inadequate in describing evolving complexities of learning and knowledge-sharing among human learners, computers, and networks. According to behaviorism, learning is the objective, observable, measurable process that occurs when the human mind reacts to an external stimulus and can be altered with reinforcement (Kaya, 2019). What can be known is limited to what the senses and action expose to the external world; the brain's activities cannot be known—a black box in this paradigm (Kaya, 2019). In contrast, Siemens argued that learning is subjective and collaborative across networks comprised of both humans and computers. Further, as learning changes, so too do human brains, computers, the network, and societies globally in the process (Siemens, 2006). For

Siemens, social constructivism and behaviorism were unable to represent fully how

learning happens in the digital age. They differ from connectivism's assertions that the

learning process has evolved beyond the mind and that how learning happens—versus

what is learned—is valuable based on its relevance for the learner's decision making

amid an immensity of information. Overall, the intent of connectivism, then, is to reflect

the complexity of learning in the digital age and the importance of diverse networks'

expedient supply of relevant knowledge to learners for accurate decision making.

Limitations of Connectivism

Since the original MOOC by Downes and Siemens, connectivism and Siemens,

himself, have remained formative forces in the literature and in digital pedagogy

(Downes, 2012). True to connectivism's tenants, platforms like Coursera and webX have

facilitated decentralized, globally networked MOOCs on a wide range of topics that

evolve as millions of learners add to and interact with components, such as a video

summary of key concepts and with each other (Ekowo, 2017). Despite these applications

and those in the literature who have challenged it as a learning theory, connectivism has

been applied in multiple levels of education and in other areas of society,

including leadership development and healthcare personal learning networks

(Clarà & Barberà, 2014; Corbett & Spinello, 2020; Kop & Hill, 2008; Nattoch Dag,

2017; Sitti et al., 2013).

Value for the Current Study

The current study was positioned within a connectivism framework because it

best represented the significance of technology used to leverage the diverse knowledge of

a learning community's network, such as the knowledge shared through school and parent ICT apps for student success. Specifically, connectivism is used to underpin the study's investigation of both the technology and the networked learning community itself as conduits and creators of actionable knowledge for parent and school decision making (Utecht & Keller, 2019). Further, this study's examination of parent perspectives on how this network can facilitate more relevant connections for and because of the diversity of their contributions is a connectivist approach for understanding how ICTs can be leveraged for student achievement (see Brooks, 2015).

Looking beyond the connectivism framework and its grounding concepts of diverse networks as necessities for relevant digital age learning and decision making, I use this literature review to present an analysis of prior approaches and their respective strengths and weaknesses. Findings that shape the study's significance and scope are also discussed, as are topics for further study. The following section provides a review of the current academic literature around several major themes: parent engagement and student reading achievement, the ubiquity of ICT apps, and effective parent-school ICT practices. I then address the gaps in the literature on parents' awareness and perceptions of these apps for school communication that supports their students' progress toward grade level reading comprehension.

Themes in Literature Review

Four themes emerged during a review of the literature. The first theme was that parent engagement is associated with student achievement if tailored for the challenges of the middle school years. The second theme frames the Title I requirements for school-

parent engagement for middle school struggling readers. The third theme was that ICTs apps have been associated with both benefits and challenges in school-parent engagement leveraged for literacy intervention. Fourth, finally, I discuss the literature on barriers to effective ICT parent engagement for urban secondary struggling readers. This literature review closes with an analysis of my study's ICT and parent perspectives data contributions to the education field's gaps in terms of more effective school-parent engagement as a key driver of struggling reader academic improvement, particularly in Title I middle schools.

Parent Engagement and Student Achievement

Although parent engagement with schools has a positive influence on all student achievement, it is particularly important to middle school reading student performance (Fredricks et al., 2019; Gerzel-Short & Conderman, 2019). According to Crosby et al. (2015) and Scammacca et al. (2016), in the years prior to and during middle school, parent engagement is associated with literacy development. This positive influence has been found regardless of ethnicity, and, according to a large study of over 2,000 diverse, low-income students, has also been a predictor of stable academic skills into middle school (Tamis-LeMonda et al., 2019). Because of their proven import to students, however, engagement activities supporting positive literacy outcomes must change as students reach middle school, as parent engagement often dissipates during these years (JSS [The School System] OSSE, 2018a).

Effective Engagement and Secondary Level Schools

Effective engagement in the middle school years accounts for reading students'

developmental instructional, social, and emotional needs. For example, in a 12-week

mixed-methods study, Farkas and Jang (2019) found a correlation between

improved reading comprehension for struggling eighth grade readers and an instructional

design aligned with adolescent-specific learning needs. Specifically, this design should

include explicit strategy instruction and text-based collaborative discussion (Farkus &

Jang, 2019). Coombs and Howard (2017) found that developing metacognitive skills

boosted reading comprehension and autonomy. Fredricks (2019) found that in middle

school, unmet social needs such as peer acceptance and autonomy accelerate students'

disengagement from learning. Similarly, Orkin et al. (2017) found that although middle

school students exhibit a need for emotional support from parents, they most frequently

experience literacy intervention at home as intrusive, which is often due to students'

challenges with self-regulation. This downward engagement trajectory illustrates the

importance of effective parent-school engagement informed by students' developmental

needs, which differ from the more concrete, obvious needs of the early childhood and

elementary school years.

This decreasing trajectory means disengagement at the middle school level is

prevalent and not only due to instruction that is misaligned with students' developmental

needs, but also to students' emerging capacity for autonomy. For example, Houri et

al. (2019) found pervasive decline in reading motivation throughout middle school in a

large reading attitudes survey of 4,491 students in 23 states and the District of Columbia.

Further, McKenna et al. (2012) determined this trend of low engagement is perpetuated because middle school struggling readers often experience a lack of agency about how to initiate communication with parents and teachers while also responding to their rising need for independent decision making. By adapting their engagement and aligning with middle schoolers' needs, parents and schools can contribute to student performance improvement. For example, in their quantitative study of 150 diverse families, Hill et al. (2018) found the greatest achievement outcomes when schools and parents scaffolded middle school student academic independence by connecting current learning to future success. Additionally, Chen (2017) found that schools need to consider middle school students' self-regulation needs when designing intervention strategies. Such refocusing is necessary to ensure students are equipped with literacy expectations that are increasingly independent rather than teacher- or parent-facilitated (Chen, 2017).

Effective Engagement at Secondary Level and Home

More broadly in support of literacy achievement, a teachers prioritize equipping middle school students with the self-regulatory tools for academic autonomy and the role both parents and teachers play in communicating to students their ownership of their personal efficacy development (Herman et al., 2020; Turkyilmaz, 2015). Alley (2019) found that student motivation can increase over time when middle school instruction fosters and supports autonomous growth through choice, peer collaboration, and two-way communication with the teacher about students' thoughts and feelings regarding their learning. Jensen and Minke (2017) found improved outcomes when parents solicited the students' perceptions that include their planning input in how and when the

interventions were used. In their 693 participant follow up longitudinal analysis to the Canadian-based Concordia Longitudinal Analysis Project, Kingdon et al. (2017) found that although low-income males experienced greater reading challenges than females as they began secondary grade levels, those with a grandparent engaged the school demonstrated better academic performance. Parent involvement remains an important implementation factor of effective home-based literacy interventions, according to Bojczyk (2019), within an overall strong home-school connection. Considered in combination, although adolescents with reading difficulties confront significant developmental challenges and intervention barriers while working towards grade level reading. However, learners can improve their motivation and academic performance over time when parents and teachers intervene in developmentally appropriate ways, such as those which account for autonomy.

Title I Engagement Requirements and Literacy

In addition to evolving adolescent needs, Title I requirements also shape parent-school engagement in the target population and the challenges of measuring and correlating this engagement to student literacy achievement. To foster student achievement through parent engagement, the 2015 Federal Every Student Succeeds Act (ESSA) legislated that schools qualifying for Title I funds must allocate a percentage of funding for parent-school engagement. Key engagement requirements include two-way communication, specifying that this communication can be accessed equitably regardless of families' socioeconomic level (Kelty & Wakabayashi, 2020). However, despite this requirement and its proven benefit for middle school aged students, there are a limited

number of studies that examine how best to implement these parent-school engagement requirements at the secondary level around literacy intervention; even fewer are focused on middle school literacy achievement.

Although the literature skews toward examinations of Title I-based school-parent-engagement implementation at the elementary level, school-parent communication remains a central factor in middle schools. For example, in a large study of over 1,000 K-12 families, Schueler et al. (2017) garnered one-way, school-issued digital communication, such as a family newsletter, and found the engagement data underrepresented families of lower SES who tended to have limited online access. Fox (2016) examined literacy homework among Title I families and found the adults in the home valued both the connection to the curriculum and teacher feedback, as well as the intergenerational interactions that occurred when completing it. These positive connections also seem to lead to positive student achievement outcomes. Magwa and Mulgari (2017) found positive student academic outcomes were more likely when parent-school communication provided varied routes to engagement for parents with lower education levels, who otherwise were less likely to get involved at the school or with academics in the home.

School leaders and teachers are key contributors to effective, two-way school-parent communication. In their qualitative, phenomenological study, Aykac and Msengi (2019) found that middle school principals in Title I believed schools and parents are both responsible for the quality of the students' education and that parental involvement is important for academic achievement. Although a single

organization case study with a small sample size, Posey-Maddox and Haley-Lock's

(2016) analysis also indicated Title I funding is more effective when there is two-way

parent-school communication grounded in educator and school leader beliefs that parents

are assets, fostering inclusive engagement practices regardless of parental employment or

economic challenges. Overall, when parent-school communication required by Title I is

reciprocal and reflects school and broader community's perspectives and capacities, it

can be an important contributor to student academic achievement.

ICT Applications in Education

In addition to the literature's first and second themes: (1) the positive relationship

between parent engagement and student achievement, and (2) effective school-parent

engagement at the secondary level in Title I schools, the literature indicated also a third

theme that the use of ICT apps has become a prevalent approach for school-parent

engagement in education. According to the Pew Research Center (2017) based on

surveys from 2009 to 2019, 96% of Americans own a cell phone and the number of

smartphone owners is now 81%, an increase of 46% in the last ten years. Most relevant to

the study is the use of cell phones and communication apps for parent engagement for

home literacy intervention.

Parents prefer text messages from schools because cell phones provide

convenience for how and when they connect with school information (Lazeros, 2016;

Olmstead, 2013). In their mixed methods study of over 1300 parents, Thompson et al.,

(2015) found that parents used text messages to connect at least weekly with

their district's K-12 schools and that this trend was likely to continue. Included in this

trend were both K-12 general and special education populations (Gauvreau &

Sandall, 2019; Snell et al, 2020). Of these K-12 studies, rather than school-parent

engagement most focused on the use of ICT apps during instruction and teachers'

perceptions on integrating the technology (Camilleri & Camilleri, 2017; Pepe, 2016;

Snell et al., 2018, Thomas et al., 2014). Most studies that examined using cell phone text

apps to support literacy intervention targeted students before they enter middle school,

with Kraft and Monti-Nussbaum (2018) positing that in upper elementary grades the

texting with parents drove improved student literacy performance in a summer program

(Cabell, 2019; Doss et al., 2018; Kraft & Rogers, 2015). The literature on ICTs in literacy

education was limited primarily to elementary rather than secondary education.

Beyond the US, the literature contained studies on ICTs and achievement but did

not connect these to parent engagement. For example, in their study spanning over 56,000

students in 20 countries, Areepattamannil and Khine (2017) analyzed a database using

three-level hierarchical analysis and found a significant positive relationship between ICT

apps and student engagement and learning. Kuisma, 2018, found ICTs used with inquiry-

based instructional design benefits middle school student learning

outcomes. Liu and Ko (2019) found that using ICTs at the sixth grade supported middle

school students' shift towards reading to learn. Further research, particularly in US

education, is needed to understand how to leverage ubiquitous ICT apps for school-parent

engagement at the secondary level beyond early childhood and elementary grades'

literacy intervention efforts.

Barriers to Parent-School Engagement

The literature indicated several impediments in using ICT apps for supporting school-parent engagement. A fourth theme centers on the barriers parents experience when schools communicate home-based literacy interventions using these technologies, such as the cost of access and level of digital literacy required for timely, two-way communication. Baker (2016) used thematic analysis across elementary, middle, and high schools of varied diversity and found that parents asked for tech-based communication including emails and texts, but that other factors such as limited family budgets and conflicts with work schedules were as important or of greater importance for determining their capacity to engage with the school. Cost for schools and parents can deter using ICT apps for engagement. Kraft (2016) found that ICT apps built for school-parent communication may be free up to a certain number of users for both the school and the parents, but then can become cost-prohibitive for school budgets and parent data plans once the user base increases. The top education communication app, Remind, with 30 million users, is an example of this—despite citing how their product provides the ESSA-required two-way school-parent communication on their website (Newcomb, 2019).

Parents need to not only be able to afford access but also the digital literacy skills to navigate the school-selected platform and then analyze and act on the information the ICT app delivers (Buckingham, 2015; Statti and Torres (2020). Nemer (2015) found that when using ICTs in varied SES contexts, schools must provide financial, cultural, and technological differentiation such the hardware and Wi-Fi when needed. In contrast, a large quantitative study of over 1,300 parents of children up to 18 years of age Rudi et

al. (2015) found that ICTs help parents stay connected with their supportive school and social networks, but the study's demographics reflected usage by nearly all Caucasian, highly educated parents. Further research is needed about ICTs apps and the needs families experiencing low SES identify for themselves for school engagement.

In this last section of the reviewed literature, I present studies whose findings indicated further investigation of parents' ICT app perceptions struggling readers' academic success and their limitations as compared to the study's secondary Title I school focus. Several studies in the literature indicated that after the middle grades, school texts to parents yielded findings supporting further investigation for performance improvement. Bergman and Chan (2017) found that a large, urban school system school can text parents with enough frequency to indicate a reduction in absences from class and failing grades for low-performing students, but they did not account for how other existing parent online information systems contribute to these results. In their field study, Kraft and Rogers (2015) found that a weekly text to parents specifying what high school students working on credit recovery needed to improve had the greatest effect on student performance. Castleman and Page (2017) found that texting did not improve the engagement of parents in students' college admission process. In contrast, Deutschlander (2019) found texting parents did contribute to higher post-secondary follow through by students and that they remained responsive intro their second college year. Considering the ubiquity of ICT apps in education, there is an opportunity for further research exploring how Title I secondary schools can differentiate their engagement practices with parents for improving students' reading outcomes.

The synthesis of the literature revealed that school-parent engagement is positively associated with academic achievement, including when the engagement is two-way and facilitated ICT apps through consistency and timeliness. However, there are few ICT app studies school-parent engagement studies. Of the limited number of studies in the literature, most skew toward the younger grades, particularly when they examine literacy intervention for struggling readers in Title I schools. The study's research questions align with the data needed to learn from parents about how these schools can better communicate and, therefore, differentiate their ICT app engagement efforts to support struggling readers.

Summary and Conclusions

This chapter presented the background, approach, and conceptual framework for this qualitative study and explained its Connectivism framework to contextualize using technology productively in a diverse learning community. The literature reviewed in this section described the academic benefits and the barriers when using school-parent engagement uses ICT apps, but the experiences and understandings of parents whose students attend Title I middle schools were only minimally represented. There is a gap in the research describing how to align communication around reading intervention strategies that involve parents and is therefore a matter of educational equity the study was designed to address.

Chapter 3: Research Method

This chapter contains the qualitative research design and rationale for the study that focused on understanding how parents of middle school struggling readers perceive the role of ICT apps in their engagement in students' achievement. The purpose of this qualitative study was to explore whether parents of struggling readers in an urban Title I middle school are aware of parent-school communication apps and whether they perceived them as useful for partnering with schools to improve student academic success. Next, I provide a description of the study's methodology, including a description of the participants, how they were selected, my role as the researcher, and related ethical issues. Last, this chapter includes an explanation of the semistructured interview questions that were used to collect data aligned to my research questions, how the data were coded and analyzed, threats to the data's validity, and ways in which these aspects of the study were mitigated so that the study's findings are reliable and useable.

Research Design and Rationale

The central concept or phenomenon of the study was the parents' perceptions of their ICT apps use for school communication and engagement. The research questions for the study were as follows:

1. What experiences do parents report in using communication apps as a tool for increasing their connection to the school, other parents, and school engagement efforts to support struggling readers?

2. What changes in student academic progress do parents describe when connecting to the school with communication applications?

In this study, I used a qualitative methodology. According to Mohajan (2018), in general, qualitative research should describe the experiences of people in text and then uncover the meaning of the participants' words relative to the focus of the study. Further, the qualitative research tradition is used to focus on the opinions of a group so that they can be better understood or to explore a problem deeply through trends that emerge among the group's thoughts (Byrne, 2001). Concerning qualitative research, Moustakas (1994) posited that "hermeneutic science involves the art of reading a text so that the intention and meaning behind appearances are fully understood" (p. 10). Therefore, a qualitative design was appropriate because the purpose of the study was to describe the phenomena or the participants' understandings.

Planning for this study began by asking what it was intended to achieve. Because my goal was to explain and understand the phenomena, positivistic traditions that examine causality or relationships between one or more variables, such as qualitative or mixed methods, were not appropriate (see Maxwell, 2012. I addressed personal subjectivity and bias throughout the data collection and interpretation phases for this study. In contrast to a typical quantitative study, the participant group was small. Last, the study was positioned to capture description specific to the participants' lived experiences, mitigate biases, and obtain confirmable findings rather than a generalized understanding. According to Cho and Trent (2006), ensuring validity is both the process and goal of a qualitative study.

Role of the Researcher

In this qualitative study, I was an observer. Lobe (2020) noted several characteristics that aligned with this study, including the use of video calls for social distancing and the interpretation of the behaviors of a small number of participants of whom some or all were aware of me and my role. As such, I explored iteratively the experiences of the participants, converted them to text, analyzed the data, and used these findings to revise my understanding of their experiences (see Flick, 2019). The role of the qualitative researcher is to recognize and, to the greatest extent possible, question personal biases to understand the participants' responses (Gadamer, 1976, as cited in Thirsk & Clark, 2017). The researcher interprets experience and builds comprehension of the phenomenon's meaning through impartial, reflexive interpretation (Creswell & Creswell, 2017; Titelman, 1979). Lichtman (2013) noted that a reflexive approach requires the researcher to look beyond preconceived ideas about a phenomenon. Ultimately, as the researcher, my intention was to understand the parents' perspectives by making their thinking visible through the iterative data collection and analysis.

The study had two ethical considerations concerning the researcher's role and the participants. First, I was a reading intervention teacher in a middle school within the same school system. To mitigate any affinity bias, I excluded parents of my current and past students as well as any other family members I taught (see Collins & Stockton, 2018). Second, to support valid interpretation and analysis of the data, it was important that I monitored and mitigated how my prior experiences with a similar parent population may

have predisposed me to verbal and nonverbal biases during the interviews and as I analyzed the data.

Methodology

Participant Selection

The population for this qualitative study was parents of struggling readers who were enrolled in a reading intervention program in a Title I middle school. A qualitative approach was most effective in this context because it emphasizes the "essence of the experience" of the parents (see Lichtman, 2013, p. 77). A convenience sample was used for the study because the study was positioned to gain understanding of the parents' perspectives as representative of the school's reading intervention parent group (see Etikan et al., 2016). Additionally, a convenience sample was selected because it is cost effective and because as members of the school community, the parents are located with geographic proximity to the school (see Etikan et al., 2016).

Participant selection criteria included the clear and repeatable recruitment and selection steps such as the digital communication to parents at a Title I school who had a student enrolled in a reading intervention course and vetting each potential participant when they contacted me as an ICT app user. To help ensure participants understood accurately the questions I asked, questions about ICT use were phrased in terms familiar to the parents. Likewise, member checking was used to help ensure accurate representation of parent perceptions and to support an authentic opportunity for participants to explain their thoughts and motivations (see Namey & Trotter, 2015). Member checking after each interview helped to ensure the collected data were

authentic to the target population and was sufficient to answer the research questions (see Welch & Piekkari , 2017).

The sample size of nine participants was monitored for thematic saturation. A second round of invitations was not required (Leech, 2005; Mason, 2010). The school system Research Review Board approved the Title I middle school where I taught reading intervention courses as the site for the study. My principal was approved to initiate the participant recruitment process. Upon receipt of Walden approval, I began the recruitment process by emailing a letter to the principal requesting access to participants for the study and the recruitment ad. The ad included my Walden email and personal cell phone number for prospective participants to contact me. The principal included the ad in the school's weekly digital parent newsletter for 2 months. Respondents to the ad were screened and excluded if they did not align to the study's limitations, which included cell phone use for school communication and a student enrolled in an appropriate reading intervention program. Prospective participants were recruited from respondents who met the study's criteria and were emailed an invitation to participate and the study's details, two example interview questions, and a selection of interview dates and times (see Appendix A for the interview protocol and questions). According to each parent's preference, interview Zoom calls were scheduled via email or phone at time convenient for the parent. A list of all interview questions was attached to each email confirming the participant's interview video call date and time. Participant consent statements uploaded to my Walden MS OneDrive for storage and saved with a numeric file name for anonymity.

Although this approach presents researcher and participant bias, the validity of the study was maintained through my reflexive journal and by performing a member check of my initial conclusions following each interview. According to Hopman (2021), a researcher using a reflexive process describes one's understandings and beliefs, evaluates them critically, and then uses the emerging perceptions for further research actions. In this study, I used a reflexive journal process by writing questions and new understandings within a day of each interview in the chat tool of Quirkos, the study's data collection software. However, this became difficult to manage along with the coding, so I moved it to an MS Excel spreadsheet in my Walden account.

A possible power differential was mitigated by ensuring that none of the participants' students nor their relatives have been nor will be in my classes. The latter was reasonable because I did not teach in the school following the current school year. My identity, school role, the study's goal, and the interview questions were provided to prospective participants for their review, as well as a clear statement that their participation was voluntary, and they may choose to withdraw at any time for any reason.

Instrumentation

For this study, I created a set of open-ended, flexible interview questions using a protocol as a guide. The interview questions are presented in Appendix A and were given at the beginning of the interview session. The interview questions were asked verbally during face-to-face Zoom video calls in semistructured interviews. The responses were recorded using two audio devices and saved using both cloud-based and external drive

storage. I made anecdotal notes throughout the interviews using the chat tool in Quirkos,

my data collection software and an MS Excel spreadsheet. I used the same interview

questions and interview protocol in each interview to ensure the interviews allowed for

sufficient data collection and were aligned to the research questions.

Interview Protocol

For qualitative interviews, Rubin and Rubin (2012) recommended that researchers

use a protocol to guide the interview process, which can be shared with potential

participants and institutional review boards. The protocol helped to ensure the interview

questions collected data sufficient to answer each of the study's research questions. The

protocol consisted of main questions, follow-up questions, and probing questions to be

used if further details or examples were needed (see Rubin & Rubin, 2012). It included

both the interview questions and the procedures I scripted in advance to help ensure they

were used uniformly and without omission of important information (see Jacob

& Furgerson, 2012).

For example, I began each interview session by introducing myself and the study

to build rapport and provide information to help mitigate any concerns the participant

may have. I initiated informal conversation to set a welcoming tone. To build on this, the

least intrusive and most accessible interview questions were asked first. For Research

Question 1, I gathered data on parental awareness and experiences with ICT apps in

terms of their connection with school to support their struggling readers. Data for

Research Question 2 were collected towards the end of the interview questions, which

gathered data on the parent's perspectives on two-way, ICT app communication with the

school and requested what reading support and student performance information they may like to have but is not available currently from the school. At the end of each interview session, I provided each participant an opportunity to amend their answers and recorded any changes in my Excel sheet during the session. Additionally, I included information on how the participant could contact me with questions. To help with validity, I member checked my initial understanding after reviewing their responses. All participants confirmed the accuracy of my initial understandings. I ended by requesting if I could follow up with any clarifying questions and what the parent's preference would be for that follow up. All participants agreed to this possible follow up, but none was needed because their responses were clear when I reviewed their recordings and the interview transcripts.

To help with validity, I monitored my understanding for any questions or gaps in interview responses during each interview and performed a member check before the end of each session. No gaps nor discrepancies were found in my initial conclusions during the data analysis phase. Additionally, to help ensure the rigor of the study, I used a reflexive journaling process to monitor and address my personal biases during and after each interview, and as I compiled the interview transcripts during my data collection in my qualitative software program, Quirkos.

Procedures for Recruitment, Participation, and Data Collection

Recruitment and data collection required the approval of the study from the Walden University Institutional Review Board (IRB). The school system Research Review Board accepted the study and approved my Title I middle school principal and

the school's parent community for the recruitment process. One school provided a sufficient participant sample.

Participation

Following receipt of the Walden IRB approval, I requested that the school principal include an announcement and recruitment ad requesting study participants in the school's family-facing digital newsletter. Among the target participant criteria, the announcement specified participant cell phone use for school communication. Potential participants used my Walden email and personal cell phone number provided in the ad to convey their interest in the study.

Participants were parents whose students are on the 2020-21 reading intervention course rosters who use their cell phones for school communication. First, following the recruitment process, I emailed or called prospective participants to introduce myself and the study, to confirm that they met the criteria, and to request their permission to email an invitation to participate in the study and its consent form. The invitation letter recapped the introductory information about me and the study, explained the role of the participant, provided two example interview questions, and presented a timeframe for confirming their willingness to participate in the study. After the time for each interview was confirmed, I emailed each participant a list of the interview questions to mitigate possible anxiety about what parents would be asked and support any literacy needs. Because I had enough participants, I did not need to use any attrition mitigation strategies, such as requesting that the principal extend the time the recruitment ad was placed in the school's digital newsletter.

Data Collection

As participants were vetted and added to the sampling pool, I contacted each one

to schedule their interview. I asked each participant to schedule the interview at a time

that was convenient and when distractions would be minimal. The interview questions

were structured with the most-accessible, general ones first to build rapport. Next, I asked

questions about ICT app use. The ICT portion of the interview captured data on

participant ICT use for school engagement and supporting student reading achievement

using open ended questions and probing questions as needed. Last, I asked

the two demographic questions with the hope that participants would be more at ease

sharing this personal information by that point in the interview. The demographic

questions requested the participant to indicate an age range they felt was most descriptive

of themselves and to indicate a word from a list that described their relationship to the

student, such as "parent" or "grandparent." After each interview, I performed a member

check; this and its results were included in each recording and its transcription. I used the

Zoom video conferencing platform to record an audio file of each interview. As a back-

up, I also recorded the audio on a cell phone. Before each session, I checked the

functionality of the Zoom platform and cell phone's recording app. After the interviews, I

downloaded the recording of each call and emailed it to an online transcription service. I

received each transcription within 24 hours, and then I imported each transcription file

into my Quirkos cloud-based Computer Assisted Qualitative Data Analysis Software. I

also saved each file to my Walden MS 365 account for cloud-based back-up storage.

At the beginning of the interview session, I established rapport by welcoming each participant and engaging in a few minutes of casual conversation to create a welcoming tone. Next, I reviewed the purpose, duration, and method of recording and transcription, and was careful to ask if the participant had any concerns or questions with using Zoom. I explained the confidentiality and my numbering plan for anonymity to identify each participant rather than names. Each participant was offered a list of the interview questions to support any literacy needs (see Ross et al., 2018). Next, I used my protocol's opening script to introduce the interview structure (see Appendix A).

To start the interview questions, I built rapport by beginning with a general request for the parent to tell me about their cell phone use for school communication then asked the rest of the ICT app questions (see Ramírez-Rueda et al., 2021). To help with validity, I was careful to maintain a neutral tone and posture to avoid conveying any leading verbal or nonverbal information. If more detail, an example, or a clarification was needed after hearing a response to the structured question, I asked a follow-up and/or probing question for more information. I provided each participant with an opportunity to amend any of their responses if they wished. One participant added details about the challenges she experienced with the school's multiple communication platforms. At the end of the interview, I used the closing script in the protocol and thanked the participant for their time and perspectives. I closed by summarizing for each participant my initial findings, asked if there were any information the participant would like to add or change, and requested a follow-up phone conversation should there be any misunderstandings the participant or I felt should be clarified.

Data Analysis Plan

The data analysis plan for this study involved collecting interview data from the parents of students in grades six through eight enrolled in a reading intervention course in a Title I, urban middle school. The interview questions aligned with the ICT apps and school engagement topics in Research Question 1. The interview data helped explore the education-related uses described in Research Question 1 and the parents' perceptions about ICT apps and two-way communication described in Research Question 2. The remainder of this section presents how the data were transcribed and organized, and the sequential, iterative procedure used to analyze it.

Transcription

I enabled the cloud recording option in my private Zoom account to record and the audio interview data. After each interview, I received an automated emails altering me that my recording was available, which I accessed via links. I used these links to download the recording file and email it to an online transcription service. The transcripts were emailed to me within 24 hours as an MS Word file. I uploaded them to my qualitative research software, Quirkos, and to my Walden MS 365 cloud storage as back up. The video recordings and the transcriptions were time stamped and organized by naming them by a number such as "Participant 1." I ensured the transcriptions are accurate by comparing them the interview recordings and corrected three misspelled names. There were no corrections needed in the responses of the participants. I used Quirkos to analyze the transcriptions and to reflect iteratively on the data.

Organization

I selected Quirkos for my data organization, coding, retrieval, and analysis because it has a simple user interface, is cost effective, and its latest version has a new chat feature for taking wide margin notes (Quirkos, 2019). During the data analysis process, however, I found it was more efficient to use my Walden MS Excel spreadsheet to take anecdotal notes and to respond to my reflexive journal questions after coding each interview transcript. My notes and journal entries included inductive data analysis of my emerging understandings and my monitoring of my personal biases which may stem from my background and past teaching experiences, (Creswell & Creswell, 2017). I also tested and refined my understanding of preliminary themes and relationships in the data along with information gathered from my post-interview member checks (Hammersley, 2018; Shin & Miller, 2022).

Analytical Procedures

The data for interview questions one to five were used to answer Research Question 1. This research question focused on the participant's general ICT app awareness and use for communication from the school. Interview questions six to 10 collected data aligned to Research Question 2 and provided information about the information the participant would like to send to the school using the ICT app and what academic literacy support or related engagement activity information the parent would like to have to support the student's progress. The last two questions focused on demographics and gathered an age range of the participant and the relationship to the student to help contextualize the participant's perspectives and understandings.

The data were coded and analyzed using an inductive process. Bloor (1978) described an inductive analysis process for qualitative researchers that moves from collection and description of the data to tentative understandings that the researcher tests and retests against new data. First, I loaded each interview transcript MS Word document into Quirkos and begin the coding process by assigning provisional keywords and phrases, or quirks. I ensured the coding reflected the respondents' exact words (Bloor, 1978; Saladana, 2016). I inserted into Quirkos the survey categories and data, such as age range and gender, using the program's properties function. This allowed me to examine and interpret the perspectives of the parents based on responses using these descriptors.

Next, in Quirkos I used colors to identify general patterns, trends, or ideas that emerge. I noted common characteristics of these in my reflexive journal. When steps one and two were complete for all the interview transcripts, I conducted additional analysis cycles with an added purpose to identify and code any themes and discrepant terms or patterns and the characteristics of each (Bloor, 1978; Saladana, 2016). I found three discrepant cases that involved parents using their cell apps to remain in contact with their students' elementary school teachers for social rather than current middle school academic reasons (See Table 1 in Appendix B for discrepant code information). This is notable, however, because it indicates the value the parents placed on their cell apps for communication and their interest for maintaining positive relationships with schools from which their students had already matriculated.

I used this iterative data coding procedure and reflection process until thematic saturation was reached. Although the small sample size and the convenience sampling risk of bias imply limited transferability, these were mitigated by my reflexive journaling throughout the data collection and analysis process with a goal of thick description that aligns with the participants' perspectives (Poos, 2017).

Trustworthiness

It is the responsibility of the researcher to protect the participants while also thoroughly investigating and accurately interpreting what is observed (Sanjari et al., 2014). In qualitative research, trustworthiness is the system for determining the value of findings, and it is grounded on the researcher demonstrating this at each stage of the study (Schreier, 2012). Guba and Lincoln (1985) define credibility, transferability, credibility as the four criteria for determining trustworthiness.

Credibility

Credibility of the study was founded on the accuracy of the collected information (Guba & Lincoln, 1985; Rubin & Rubin, 2012). The study and its findings will be credible because its qualitative design is intended to gather information about the phenomena directly from the parents using the ICT apps with the school. Additionally, the data collection and analysis steps were provided in detail and open for review before, during, and after study. Last, the interview questions were carefully aligned to the research questions, developed using an interview protocol, and designed for open-ended responses and researcher probing to better capture the authentic experiences of the parents.

Transferability

The study was designed to examine the perspectives of a subgroup within a school. Because of this and its small sample size, the study has limited transferability. Several methods were used to help with transferability by recording rich, thick description (Rubin & Rubin, 2012). First, respondent identifying information was replaced with a number to build a more equitable, trusting connection with each person and to increase the likelihood of accurate data (Rubin & Rubin, 2012). Then, during the data collection and analysis phases I created a reflexive journal to mitigate bias and to help me develop my understanding of each interview's data and process. After each interview, I invited each participant to member check my initial findings. Last, I ensured the transcripts I coded and analyzed are accurate by reviewing each interview recording and correcting any errors in its transcript, however, no substantial errors were found.

Dependability

The dependability of the study was founded on using the appropriate, qualitative design that is structured correctly to be repeated with similar findings (Given, 2008). Specifically, this included an overlap of several data sources to triangulate and test the validity of the themes and findings (Given, 2008). These included the interview data, supported with reflexive journaling and member checks, as Denzin (2009) described, because data are more reliable when collected and compared using more than one method.

Confirmability

Confirmability refers to retracing the steps in the study and examining them to be sure the findings and recommendations are supported by the data and the overall methodology (Given, 2008). In addition to the strategies presented in this section such as member checks and transparency before, during, and after the study, the study used in vivo coding to help ensure the respondent transcripts reflected accurately their perceptions. Further, I monitored and made iterative adjustment in my use of probing during each interview based on my reflexive journaling responded to help ensure the data captured any the clarification of terms or symbolism specific to each parent (Rubin & Rubin, 2012).

<p style="text-align:center">Ethical Procedures</p>

Rubin and Rubin (2012) emphasized the importance of fidelity to all ethical procedures in all aspects of the research relationship with participants. To ensure the study's data collection was performed prior to end of the school year 2020-21, I submitted a draft proposal which the school system Research Review Board approved to conduct the study at the Title I middle school where I taught. A possible power differential was mitigated by excluding respondents whose students were my students. My identity, school role, the study's goal, and the interview questions were provided to prospective participants for their review, as well as a clear statement that their participation will be voluntary, and they may choose to withdraw at any time for any reason.

Upon Walden University Research Review (URR) approval, I scheduled my first committee oral defense phone conference and sent the school system's MOA to the Walden IRB for review. Upon receipt of IRB approval (07-02-21-0745648), I began recruitment, data collection, and data analysis. During these stages, I ensured that all commitments to participants, such as member checks, were completed as described. I also ensured that at no time were any potential participants pressured to engage with the study nor were respondents pressured to answer a question if he or she felt hesitant to do so (Rubin and Rubin, 2012).

To mitigate other potential ethical issues, the school principal, and all participants were provided clear information about who I am and the purpose of the study, its potential benefits, and their right to withdraw at any time. All participation required informed consent in writing. Participants and the school principal were informed that identifying information would be replaced with pseudonyms for anonymity. A relatively small sample size was needed, and enough participants agreed to be interviewed. Additionally, all technology used in data collection was tested prior to each interview. All data were stored in my Walden cloud files up to five years after publication of the study then destroyed. Finally, all participants will be provided with the findings of the study and with my contact information and encouraged to contact me with any questions or concerns after the study.

Summary

In Chapter 3, I discussed the research rationale and qualitative design, the researcher's role, procedures for participant selection, and instrumentation for this study.

This chapter explained the steps I took for respondent recruitment, participation, data collection, and analysis. I explained the issues of trustworthiness and how the selected mitigation strategies align to support a valid, qualitative study.

A qualitative design was selected for this study because it aligned to the study's purpose to understand the phenomena of how parents perceive the connection of ICT apps to school engagement and student achievement. Additionally, this chapter presented research indicating the validity of a qualitative design through focusing on the experiences of a small convenience sample, such as the parents of struggling readers in a Title I middle school and reaching saturation. Additionally, a qualitative design was selected because the data were collected using interviews supported by member checks and my research reflexive journal was used to manage my biases. After receiving approval for recruitment and data collection, I completed the data collection and analysis. The next chapter will present these processes and the findings of the study.

Chapter 4: Results

The purpose of this qualitative study was to explore whether parents of struggling readers in an urban Title I middle school are aware of parent-school communication apps and whether they perceive them as useful for partnering with schools to improve student academic success. The conceptual framework for the study was connectivism, which also framed the following research questions:

1. What experiences do parents report in using communication apps as a tool for increasing their connection to the school, other parents, and school engagement efforts to support struggling readers?

2. What changes in student academic progress do parents describe when connecting to the school with communication applications?

This chapter presents the findings of this study. I describe the setting, participant demographics, and the data collection process. Next, I present my data analysis, the evidence of trustworthiness, and the findings organized for each research question by theme. The chapter ends with a summary of my data analysis and findings.

Setting

The setting for this qualitative study was a Title I urban middle school located in the northeastern United States. The reading intervention program at the school is required by the school system for students whose reading performance is 2 or more years below grade level, with the lowest level being emergent readers. A factor that influenced the data collection process and direct experiences of the participants were the local impacts of the COVID-19 health crisis. These impacts included school compliance with federal

and local health protocols, participant loss of employment, and participants reporting

new, challenging caretaking roles due to their family members ill with COVID-19 during

the interviews. Because my proposal indicated Zoom video calls would be used for the

interviews, I was able to schedule the interviews regardless of the local government

safety and social distancing protocols. By the time the interviews took place, several

participants described the emerging role the health crisis had in their ICT-based school

communications.

Demographics

The participants were nine parents of students enrolled in the school's reading

intervention program who used ICT apps to communicate with the school to support their

learners. The ages of the participants included the following quantities and age groups:

two parents were in the 25-to-34-year range, three parents were 35 to 44, two parents

were 45 to 54, and two were over 55. All the participants identified their relationship to

the student as "parent," though two offered additional descriptors: "great aunt" and

"grandmother." Within the context of this study, because all participants identified

themselves as the parent serving as the primary caretaker for the student, all participants

were referred to as the parent.

Data Collection

Data collection took place in August and September of 2021. I began the data

collection process by emailing the school principal a request to access prospective

participants who would be appropriate for the study and requested inclusion of the

recruitment ad for the study in the weekly digital school newsletter. The criteria for

respondents to participate in the study were the following:

1. Participants must have had a student enrolled at the school at the time of the

   study.

2. Participants must have used cell phone apps for school communication.

3. Participants must have been the parent or a caregiver of a student enrolled the

   school's reading intervention program at the time of the study.

4. Only participants whose students did not have me as their reading teacher

   could participate in the study.

The ad generated 12 respondents who contacted me via email or my personal cell phone

(call or text). I conducted 12 introductory conversations via phone and email in which I

explained the purpose of the study. I also screened the respondents to ensure they met the

inclusion criteria. Two did not qualify because their students were not in the reading

intervention program.

Next, I emailed 10 parents a brief message explaining the purpose of the study

and attached the consent form and the questions I would ask in the interview (See

Appendix A for interview information). All 10 parents returned their consent and

scheduled interviews, which approached my goal of 12 participants. One parent did not

attend the interview and did not respond to a follow-up email. Although the vetted nine

participants were one less than my planned convenience sample of 10 to 12, all nine

agreed to scheduled interviews and completed them. After nine interviews, I began to

hear the same patterns in responses and felt comfortable that I had achieved data saturation and determined that no further recruiting was needed.

Interviews

To schedule each interview, I scheduled a time that was convenient for each parent. I offered the questions for use during each interview, but none of the parents wanted to use them. I used the interview protocol including the opening and closing script with the member check.

After each interview, I checked the Zoom and the back-up recordings on my cell phone's audio app for completeness. To convert each recording to an MS Word file, I used Rev.com, an online transcription service, which provided time-stamped, verbatim transcriptions of all interviews. Upon receipt of each transcription, I reviewed it with its recording for accuracy. I corrected misspelled names in two of the transcripts; however, in all transcripts, the participant responses were transcribed correctly. Because the transcriptions were complete, all participant response content was accurate, and each participant confirmed my initial findings were accurate, no further follow up was needed with participants for clarification. The consistency of my interview protocol helped to ensure that the interview data were well-organized and understandable.

<div align="center">

Data Analysis

</div>

To analyze the interview data, I began by reading each transcript again but without taking notes or coding in Quirkos. I created a coding table and audit trail in a Word document before I coded the first interview (see Appendix B). Next, I began the coding process by labeling the transcript files by a number to protect each participant's

anonymity, such as Participant 1, and uploading them to Quirkos. Although I loaded

reflexive journal questions into Quirkos, this quickly became too time consuming, so I

created an MS Excel file where I recorded my responses in a separate tab after I coded

each interview. For each transcript, I took a screen shot of the Quirkos canvas of codes

before and after I added my reflexive journal entries as part of my audit trail. I created my

audit trail using the following process: (a) I coded each transcript, (b) I answered my

seven reflexive journal questions, (c) I compared iteratively the current transcript's codes

to all prior coding and made any adjustments such as consolidating codes or adding new

ones, and (d) I coded the next transcript.

Important data patterns emerged using the following steps. First, I coded

important concepts in each transcript and answered my reflexive journal questions, then I

checked the codes and made any necessary changes indicated by my journal responses.

The journaling included a check for consistent coding within each transcript and among

prior transcripts. Next, I added important codes to my coding table and recorded each

change that I made in the coding cycle, including creating new important codes, merging

codes, and deleting codes that were not needed. Based on common words and phrases, I

created 65 codes such as "parent perceptions of ICTs" (77 quotes), "cell communication

parent wants from school" (75 quotes), "cell communication and academic progress" (40

quotes), and "cell communication to/from school that doesn't exist" (31 quotes). Three

codes that could not be merged with others were left on the Quikos canvas, which were

"non cell perceptions (e.g., iPad or laptop)," "siblings attended same school," and "other

reasons parent contacted school."

I repeated this process for each transcript and had 10 important categories and four themes. The important codes, themes, and the categories within each theme are provided in Appendix B. There was a low number of discrepant codes that informed the data analysis. These included ICT app use for "other reasons parent contacted school" and "cell use after student matriculates." For example, three participants described the value ICTs had for staying in touch with prior teachers, even after students matriculated to other schools. Whereas these experiences were not shared by most participants and fell beyond the scope of the research questions, they indicated additional ICT-based communications parents prioritized with prior schools.

Findings

In this section, I present the findings of my analysis. A table containing the codes I attributed to the data, their consolidation into categories, and the resulting themes is provided in Appendix B. While coding the nine parent interviews, four themes emerged. First, I present each of the four themes and their data. Next, I connect the themes to the research questions and contextualize my findings relative to the literature and to connectivism, the study's conceptual framework. A summary of my findings is provided at the end of this section.

Theme 1: Preference of ICT for Connecting with Other Parents

The first theme that emerged from the parent interviews was a preference of ICT texting and apps for connecting with other parents. Parents reported a clear preference for communicating with other parents about school matters via text using their cell phone short message service (SMS), followed by their Gmail cell app. Regarding texting via

cellphone, Participant 3 (P3) said, "I use it as the most expedient way to get in touch with teachers or . . . other parents, and it is a tool, a necessary tool in my toolbox." All participants stated a clear preference for using their ICT SMS to connect with other parents when they need academic information, such as for assignment completion and current grades, and for general information, such as confirming upcoming parent-teacher conference logistics. Referring to texting about parent-teacher conference logistics and their role in helping students complete missing assignments, P1 said, "It's like gentle reminders for you to keep yourself updated, because sometimes we just forget as parents." P3 described her cell phone as "extremely useful" for contacting other parents about school information.

Most frequently (52 instances), parents reported texting to ask—and to share proactively—information with other parents about homework assignments. As P4 explained, "If the kids are in the same classroom, I recall doing a check in, like 'Hey when is this assignment due?'" Parents described frequent texting with other parents for coordinating transportation to and from school and extracurricular activities among families who live in the same neighborhood. P4 said she texted regularly with other parents regarding "an after-school program or [if they] should be going to an activity we did check ins because we as parents have different work schedules. And we would also connect and maybe do a pickup for that parent." In addition to texting other parents to support student achievement and to mitigate barriers such as transportation challenges, all parents reported at least one example of texting other parents for engagement with the school, including telling a parent to check their email for an important school

announcement and gathering resources when a teacher requested food donations for a family literacy night event. Although texting via SMS was the clear preference when connecting with other parents, a significant number of participants reported also using Gmail on their cells for obtaining and sharing school information.

After texting, the second most frequent preference for communicating with other parents about school information was Gmail via a cell phone (23 instances). Most parents ($n = 8$) explained that although they have both MS Outlook and Gmail on their cells, they preferred Gmail as it is "helpful" and "easy to use." One parent said she used Gmail and Outlook equally for school communication with other parents. Due to the high volume of school email and from their jobs, three Gmail users preferred it for all school-related emails including parent communications but used MS Outlook for work email. Parents most frequently described using Gmail with other parents to support student achievement. For example, P1 said,

> Gmail keeps me updated and it helps me to remember things that maybe I might
> have forgotten or overlooked. And it's like, "Okay, I need to take a look into this."
> Or, "Okay . . . the grades are posted. Let me take a look at that right now."
> Another parent said, "I have four children . . . it puts the information at my
> fingertips. I feel this is, this is paramount because if you slip by one semester, one
> quarter, it may be something that you can't get back." All eight parents who use
> Gmail recommended it for sharing school information with other parents.

In addition to texting, Gmail, and Outlook, my interview protocol asked about the use of GroupMe and WhatsApp; however, neither of these were used by the participants

for school communications with other parents. The one parent said she only texted using her cell's SMS but wished the parents would form a parent group for her student's grade level in the GroupMe text app to share school information. Some ($n = 4$) parents were aware of WhatsApp, and of these, three stated they had used it in the past for church activity communications. Overall, most parents preferred using their cell phones to text or using Gmail to communicate with other parents about academics, parent meetings like conferences, and to coordinate school-related transportation within their communities to mitigate work schedule conflicts.

Theme 2: Preference for ICT Apps for School Communication

The second theme that emerged from the parent interviews was a clear preference for ICTs apps for school communication. All parents described daily cell phone use and a clear preference for using cell apps for school communication. P5 said that she uses her cell because her it is always with her. Similarly, parents explained that their cell phone was the best choice because in their experience, school staff always have their cell phones with them. Further, P9 said, "The convenience of it being on the phone is, is simply wonderful." All parents noted the high volume of information sent by the school, with eight citing the COVID pandemic (21 instances) as an exacerbating factor when the school shifted to virtual learning and the volume of digital information increased. P2 said, "The school's changing with this pandemic and all that. I think it would be very helpful to just add an app pertaining to updates and pertinent and important information." All parents mentioned one or more of the following reasons for frequent cell phone text or email communication with the school during the pandemic: (a) communicating with

teachers about academics or student behavior, (b) communicating with the main office

about attendance excuse notes, and (c) communicating with school administration when

teachers did not respond in a timely manner. Parents preferred text-based communication

rather than leaving or receiving voice mail in these instances because they could more

easily read and respond in real time while at work or otherwise multitasking, such as

parenting the student's siblings or providing care to an ill family member.

Although eight of the parents preferred to use their cell phones for SMS texting

and Gmail to communicate with the school, the only texting cell app parents said they use

and would recommend was the Remind app ($n = 4$). Of these, one parent said that

Remind was helpful because it was separate from their many Gmail school-related

messages, so she did not have to screen Gmail for their Remind messages. Another parent

said she "appreciated" the Remind messages because multiple teachers used it and

included links to student assignments or helpful attachments. Parents were more likely to

prefer Remind if at least one teacher used it not only to communicate to a class or a grade

level but also to support a specific student. Three parents liked the "direct," individual,

student-centered reading support using links at least through Remind. As P7 explained, "I

know this is dedicated to my student and his growth and it's nothing else coming through

there that's not related to school and him." Similarly, P8 preferred the Remind app

because

> "teachers are able to send over resources. So if, I guess the kids are reading this
>
> chapter book and I get a message stating that he's struggling with comprehension,

then a lot of times that enables the teachers to say, hey, here are a couple of extra

exercises that are sent directly, it's not in my email, that I can open up.

In contrast, when Remind was not used for group and student-centered communication,

one parent said that although she used Remind, she disliked automated group message

from the school, a teacher, and multiple teachers.

Although my interview protocol asked if parents used apps the school employed

such as Canvas and Teams, none of the parents reported using these on their cells. One

parent said she had used Teams for school communication via her laptop but found it

difficult to use. Finally, whether using Gmail or Remind on a cell phone for school

communication, when asked if there were any other ways parents would like to receive or

send school communication, parents stated a clear preference for using their cell phones.

Theme 3: Value of Two-Way Communication

The third theme that emerged from the parent interviews was the value of two-

way communication. All participants stated that timely, two-way communication was a

priority via their cell phone apps. P7 said she relies on "a bunch of emails to help get the

fastest responses as it seems that cell phones are often on teachers and administrators."

Timely communication was described typically as the same school day, that evening, or

the next day so that the parent could follow up with the student at home. The most

common reason parents said they wanted two-way communication with the school was

for academic progress monitoring and support when there were performance concerns. P4

said that having "immediate access" with the teachers is important so that she can "follow

through," with the student even if later, more detailed conversation with a teacher is

needed later. The next most frequently stated reasons ($n = 5$) were when there was a

behavior concern, such as the student getting into a fight, and when there was a school

emergency, such as a lockdown due to a security threat.

It is important to note that the most frequent topic of two-way communication

parents of struggling readers reported was student achievement (44 instances).

Supporting academic achievement was the primary concern for each parent. P8 described

frequently using her cell phone apps for clarification from teachers such as "How many

assignments are missing? What does he need to do to catch up?" P2 explained that two-

way communication was important for her struggling reader because the teacher would

contact her when the student began "falling behind" for extra support on certain days

when the school resumed its partial instructional schedule in the second semester of the

pandemic: "I love that on Wednesday because we get a lot more individual attention."

Student-centered intervention was identified also by P9 who said,

I can say, "Hey, how's he doing?" And if they, I can get a message back saying,

"Hey, he's struggling in this," and that can lead to further communication, versus

me trying to draw my own conclusions from a different platform.

Identifying academic challenges and interventions beyond the classroom was a clear

value for all of the parents, with one parent indicating that this was a concern among the

broader parent community.

P1 said that she valued timely, two-way communication with the school when her

student was "missing assignments" and "falling behind" and believed other parents need

help to support their engagement: "I believe it would, help parents be more engaged in

their children and what they're missing, and catch it before it's too late or they're too far behind." Overall, parents expressed a clear desire for two-way school communication via their cell phones in which teachers initiate communication about academic concerns as they arise along with specific resources or other information the parent can use to support the student. Similarly, parents placed a high value on timely and actionable school responses when parents initiated academic concerns.

Theme 4: Desire for Accountability in Communication

The fourth theme that emerged from the parent interviews was a desire for accountability in communication. All parents expressed a clear desire for accountable communication with the school. The issue of accountability was a concern for all parents (25 instances). All participants described a pattern of the school not responding in a timely manner and not responding at all whether the parent used their cell SMS or Remind for texts or their Gmail app for email. This pattern occurred whether the parent initiated the communication or if the parent responded to a communication from a teacher. The data in this theme clustered around two subthemes: (a) communication challenges and (b) recommendations to improve accountability.

In speaking about communication challenges, all parents reported difficulties when trying to communicate with the school. The resulting breakdown in communication added to the challenges and concerns parents reported when trying to support their struggling readers as articulated in the themes presented in this section. For example, as P7 explained, timely academic communication is paramount but when communication breaks down, "that teacher can then be accountable. Because there are a lot of parents

who have a vested interest in seeing their children grow and progress and be successful. But if that teacher is not communicating and then at the tail end of that reporting period your child has [a failing grade] that is very concerning." The participant added that using her cell phone in this context is important and "would kinda help. Because I mean, modern day, no one's really using paper." Likewise, P4 said that accountability is needed because her "most important communication with the teachers happens outside of the normal parent teacher conferences." Further, as P9 detailed,

It's not good to wait for the end of the semester, or advisory, and you find out your child failed. No, let me know the first couple of weeks they're struggling. I should know what my baby is [in need of] in order to pull the grade up, if they need mediation, or they need a tutor, or whatever. You don't want to wait to the end of something to get [the] final status of where your child is academically or socially or emotionally, because everything is not academic.

Although data indicated that while parents differed in the type of information they wanted to exchange with the school, all parents said they wanted better reliability and accountability via their cell phone apps.

In addition to describing communication challenges, each of the parents provided one or more recommendations to improve their school communication through accountability. Some ($n = 3$) participants described a desire for an automated system that would alert the principal to intervene when communication with a teacher was insufficient or nonexistent. Additionally, four parents said they wished the middle school used Class Dojo cell phone app like their elementary schools did for updating or

responding to parents about the academics and student behavior—both positive and disciplinary concerns.

All participants felt accountability could be improved if the school simplified the communication approach, ideally using one app for all communication. As P2 explained, "My best friend is a teacher, so I know a lot of the pressures that are put on them, but if all teachers can just be connected through that app, even if that's their first choice for communication." Two parents said accountability could be increased was to add more frequent "benchmark" communication via the school cell app, which one parent suggested should occur every two weeks and "really prevent a lot of the email." The same parent said that this would equip her to be better informed and engaged when talking to or meeting with teachers " . . . just to remind myself of how to continue to help my child, um, as I'm trying to recall. Sometimes when we get into these meetings we're taking notes and we're trying to absorb all of this information."

Like using a school-wide app with frequent, scheduled updates, P7 said that the school needs to "streamline" information in a cell app that shows particularly for the reading intervention class but also all classes " . . . exactly, you know, where the disconnect is and why the student is not progressing." Finally, accountability was described as an important part of effective engagement and partnering with the school when the school uses cell apps "So that parents can really kinda be abreast of the situation and can kinda have that little collaboration, because I don't like the thought of kids going to school and parents just thinking, oh now they're yours. No, it's a collaboration." In addition to recommending that the school mitigate school

communication challenges via a simplified, unified cell app approach, the data indicated two additional ways accountability should be expanded to support their learners' success.

All parents described extending accountability to support achievement was for the school to use a more simplified cell app approach that includes regular communication when student performance was on track or exemplary, as well as to support relationships among school staff and families beyond the classroom. Participant 1 said, "Maybe if the students are doing something extracurricular outside of the school, or teachers might want to come and join." Participant 9 described how impactful teachers are when they reinforce student achievement via the parent's cell app saying, "You're great. You're doing a good job. Keep doing what you're doing. And just give them that extra little push. So I love that." Further, P6 said, when students see their teacher supporting them outside the classroom, it conveys "hey thought enough of me to come out and say congratulations. I just think that means a lot for a student." Although all parents had difficulty communicating with the school via their cell apps, there was significant interest in simplifying their communication and increasing its reliability through greater accountability within the school. Further, parents expressed a desire for expanding this accountability to include teachers sharing students' iterative gains and for mutual sharing of opportunities for teachers to connect and support students beyond the classroom.

To summarize the findings, parents said they preferred to use their cell phone for connecting with other parents and with the school, with texting via their SMS followed by their Gmail app as their most frequently used tools. All parents reported that timely, two-way communication about student achievement was of paramount importance

because they wanted to act with their learners to support them at home as well as to

engage with the school during conferences and other meetings about to coordinate

support for their struggling readers. However, all parents reported difficulty when

communicating with the school. To mitigate this challenge, parents recommended that

the school simplify its communication via one cell phone app, and that the school

improve its communication by implementing accountability measures. These measures

would help ensure communications are elevated from teacher to administrator, for

example, to ensure timeliness to support the learner. Last, parents identified that

accountability can further support learners' achievement if the school extended its timely,

reliable communication practices to include frequent teacher reporting of student gains

and two-way communication for teachers to connect with students beyond the classroom.

In the following section of this chapter, I discuss how each of the four themes answers

the study's research questions and provide a context for my findings within the relevant

literature and with respect to Connectivism, the study's conceptual framework.

Thematic Connections to Research Questions

The purpose of this qualitative study was to explore whether parents of struggling

readers in an urban Title I middle school are aware of parent-school communication apps

and whether they perceive them as useful for partnering with schools to improve student

academic success. The study had two research questions:

1. What experiences do parents report in using communication apps as a tool for

    increasing their connection to the school, other parents, and school

    engagement efforts to support struggling readers?

2. What changes in student academic progress do parents describe when connecting to the school with communication applications?

Research Question 1

Research Question 1 was answered by the findings from all nine parents who collectively identified 274 important experiences of connecting with the school using their cell phone apps to support their struggling readers; specifically, their experiences clustered around themes one and two. Theme 1, preference of ICT texting and apps for connecting with other parents, and Theme 2 preference for ICTs apps for school communism. These themes indicated a pattern of parent experiences in which they used their cell phone for SMS texting (their most frequent choice) and their Gmail app for connecting with the school. Similarly, all parents reported a clear preference for using these two strategies when they needed to connect with other parents to support their school engagement. The most prevalent experiences parents reported with the school described using one or more cell phone apps (77 codes), followed by academic or behavioral information about their struggling reader they wanted from the school (75 codes), and academic or behavioral information they wanted to share with the school (19 codes) in a timely, reliable manner.

These findings align with the studies that indicated positive influence parent-school engagement has on all student achievement, and particularly regarding middle school reading student performance (Fredricks et al., 2019; Gerzel-Short & Conderman, 2019). Further, studies by Crosby et al. (2015) and Scammacca et al. (2016) found a positive association between parent engagement and middle school literacy development.

My findings, however, extended beyond the literature in two ways. First, my findings indicated parents of struggling readers prioritized and relied on their cell phone SMS texting and apps to engage with the school, and, in their experience, using their cell phones for this texting or emailing with other parents regarding school matters was integral to sustaining their school engagement. Second, my findings indicated there is substantial parent interest in using cell phone texting and apps for home literacy intervention, which may be a helpful consideration given the contrasting trend in the literature that middle school students found such home-based interventions intrusive, in part because it conflicted with their developmental need for autonomy (Alley, 2019; Fredricks, 2019; McKenna et al., 2012).

Research Question 2

Research Question 2 examined to what extent parent perceptions involved two-way communication with the school to support their struggling readers' achievement. Theme three indicated that the parents had a clear *value of two-way communication* and, because of the challenges they reported, theme four captured their desire for accountability in communication. All parents prioritized two-way communication with the school regarding their struggling readers' achievement (63 codes). They described their communication with multiple points of contact at the school, including some or all the relevant teachers, school office staff, and the principal—and that they relied on these connections for information to make decisions that support their struggling readers. Parents prioritized using their cell phone SMS texting and apps for asking the school academic questions about assignments, grades, and tutoring during and after school

hours. Related to academics, several parents reported that they felt it was important to inform the school of a student's emotional needs so that they would be better supported for learning during the school day. Equally important to parents was receiving via their cell phone texts and apps reliable responses from the school that answered their questions and that informed parents when academic challenges arose rather than waiting until the student was further behind or for parent-teacher conferences. All parents reported frustration when learning of academic issues after grades were placed in the grading system, particularly when they found their cell phone SMS texts and apps so convenient. Further, all parents described a need for the school to simplify all communication and recommended ways to consolidate it and increase accountability for reliable two-way communication via one school-based cell phone app.

These findings supported the literature that found parents prefer cell phone texts for school information (Lazeros, 2016; Olmstead, 2013), although Thompson et al. (2015) found that the preferred frequency was weekly for general school information versus my findings were more specific, with an academic update preference that was most frequently daily or the next day. Gauvreau and Sandall (2019) Snell et al. (2020) found that parents of students with special needs also preferred cell phone texting for school communication, and this aligned with the parents of these learners in my study. My findings extended the literature on parent perspectives of ICTs for supporting struggling readers, as nearly all of literature on ICTs in literacy US education was limited primarily to elementary rather than secondary education (Kraft & Monti-Nussbaum (2018) or on ICT use during instruction (Camilleri & Camilleri, 2017; Pepe, 2016; Snell

et al., 2018, Thomas et al., 2014). Last, my findings that all parents valued reliable, frequent, two-way school communication via their SMS and cell phone apps possibly refutes prior studies indicated the cell phone technology is a barrier to effective school-parent communication (Buckingham, 2015; Statti and Torres (2020). Specifically, the clear parent preferences for cell phone communication may refute Nemer's (2015) study that indicated schools in SES contexts must provide financial, cultural, and technological differentiation such the hardware and Wi-Fi.

According to Connectivism, the conceptual framework for the study, digital age knowledge is valuable when it is communicated with expediency. The tenants of timeliness and actionable information were echoed in the first theme by all participants with an average of 30 meaningful cell app experiences per participant. Additionally, Connectivism posits that timely information is most valuable when it originates from diverse perspectives nodes (which may be people or computers) and shared throughout the network—the greater the network diversity, the greater probability the information will be reliable and actionable. Connectivism provides a digital age context that helps explain why all parents described clear preferences for SMS texting and cell phone apps for timely, reliable, two-way communication with the school and among each other to support student achievement.

Evidence of Trustworthiness

To help with trustworthiness of the study, I implemented the approach described in Chapter 3 Methodology such as placing the recruitment ad in the school's digital newsletter, screening for participants who had students in the reading intervention

program, and mitigating personal biases by excluding current or potential students. In the last part of this chapter, I discuss further evidence of my methodology's implementation, and how I adjusted for credibility, transferability, dependability, and confirmability.

Credibility

To support credibility, I triangulated the results of my member checks from the end of each interview, my transcript reviews, and my reflexive journaling as part of each coding cycle and did not find any gaps nor discrepancies. All parents reported during the member check that my initial understandings were accurate. This process supported the accuracy of my interview data prior to coding it. During coding, I followed my methodology and coded the participants' demographics which were gender, the age category and the participant's relationship to the student. When coding reached saturation, I ran queries in Quirkos comparing the responses of youngest and oldest age categories, but the findings were not significantly different, nor were comparisons of different relationships to the students. All participants were female.

There were two changes in my data collection that may impact the study's credibility. First, I found when recording my reflexive journal responses that I accidentally missed a question in each of the first two interviews, and I noted this in my journal. This self-reflection helped me to become aware of this omission and to correct it for the remaining seven interviews. Another adjustment was that some participants wanted to only speak via a cell phone call rather than a Zoom video call, but this did not affect the recordings nor the resulting transcripts.

Transferability

In addition to the accurate member checks and reviews of the data, my interview protocol helped with transferability by providing open-ended and probing follow up questions for thick, rich data description from direct interviews from participants. All participants were provided anonymity in the data collection and analysis process and their confidentiality was maintained. I maintained a welcoming tone and found each participant to be highly engaged. The interview data were sufficiently detailed for this qualitative study, which can support transferability to similar school contexts and reading intervention programs.

Dependability

Dependability for this study is based on a repeating its qualitative design and obtaining similar findings in a comparable population (Givens, 2008). The findings are dependable because there is consistency and alignment when the data were compared among the accurate member checks, transcript reviews, and reflexive journaling and the themes (Denzin, 2009). Further, the coding table in shows the initial codes, categories and resulting provides transparence and supporting evidence of how the data were analyzed (See Table 1 in Appendix B).

Confirmability

In addition to transparency, the study's confirmability is supported by the multiple reflexive journal questions which examined personal bias during my in vivo coding and throughout the analysis process. I recorded responses for all nine interviews as well as my decisions based on my journal reflections in the coding table, the journal or both.

Prompted by these journal questions, I created codes for parent and researcher responses that indicated assumptions, ethical challenges or biases and monitored these throughout the process, noting that the volume of data decreased significantly after the third interview. The data are confirmable by retracing the steps I took in my data collection and analysis.

Summary

In summary, in this chapter I discussed my data collection, analysis and findings. The findings clustered around four themes, and these were used to answer each research question. Research Question 1 was answered by themes one and two, which indicated a pattern of parent experiences in which they had a clear preference for using their cell phone for SMS texting and apps for connecting with the school and with other parents to support their school engagement. None of the parents used Canvas or Teams on the cell phones—the two official platforms on which the school and school system based their virtual learning. Research Question 2 was answered by the unanimous explanation that all parents value two-way cell phone SMS and app-based communication with the school to support their learners, and that the school needs to simplify their communication and increase its accountability, preferrable via one cell phone app. In the next chapter, I will discuss my study's limitations, interpret the findings, and provide recommendations for possible social change and future research.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to explore whether parents of struggling readers in an urban Title I middle school were aware of parent-school communication apps and whether they perceived them as useful for partnering with schools to improve student academic success. This qualitative study explored parent awareness and perspectives about their use of ICT apps for engagement that supports the academic achievement of struggling readers in a Title I urban middle school. Examining these perspectives is important because parental engagement has been shown not only to affect K-12 student achievement but to have a significant positive relationship (Houri et al., 2019; Jensen & Minke, 2017; McCoy et al., 2017). The study had two research questions. The first question asked the experiences of the parents in using their ICTs apps as a tool for increasing their connection with the school to support their struggling readers. The second question asked the parents about their perceptions about their ICT app use for two-way communication with the school to support their learners.

I interviewed nine parents and then coded and analyzed the data. Key findings for Research Question 1 indicated a clear parent preference for using their cell phone for SMS texting and apps for connecting with the school and with other parents to support their school engagement. Findings for Research Question 2 showed that all parents valued two-way cell phone SMS and app-based communication with the school but that the school needed to simplify their ICT app communication and increase its accountability.

Interpretation of the Findings

The findings of the study illustrate the lived experiences of parents whose students are struggling readers in a Title I urban middle school. The findings contribute to new understandings about how parents in this context perceive their use of ICT apps for effective, two-way school communication, and how this supports meaningful school engagement, which can have a positive effect on student achievement. Elements of connectivism, the conceptual framework for the study, were seen in the parents' experiences, which occurred within a network comprised of diverse people and technology nodes. These experiences centered around using their ICT apps for mitigating barriers to timely and effective school communication and for creating new knowledge they needed to make decisions and take action that supported their learners' achievement. According to connectivism, this network is vital for digital age communication given the high volume and rapid evolution of information. Similarly, the parents described relying on their ICT apps for school communication for managing a high volume of rapidly evolving information, saying that they experienced an unprecedented surge of information during the COVID health crisis when the school was required to shift to virtual learning for the prior academic year and half of the preceding one.

Research Question 1: Findings Related to Past Literature

Findings from Research Question 1 indicated the parents' preference for texting and using Gmail on their cell phone for school communication and with other parents about academics and other matters contributing to student access to their learning. These were also the most important apps for connecting with other parents to support their

school engagement. Prior studies indicated the positive relationship between parent-school engagement has on all student achievement, including middle school reading student performance (Fredricks et al.; 2019; Scammacca et al., 2016). Building on this, my findings revealed that in the digital age, parent engagement of struggling readers in an in urban, Title I middle school is grounded cell phone SMS texting and apps. The parents' engagement had two primary forms that shared a common objective of supporting their learners consistently over time: The parents used their cell phone SMS texting and apps to communicate (a) with the school and (b) with other parents regarding school matters. Further, my findings added to past studies on parental interest in home literacy interventions by clarifying not only was this interest unanimous among the parents but that there was substantial interest in using cell phone texting and apps for home literacy intervention (see Bippert, 2019).

Research Question 2: Findings Related to Past Literature

My findings for Research Question 2 showed that all parents valued two-way cell phone SMS and app-based communication with the school but that the school needs to simplify their ICT app communication and increase its accountability. These findings extended the existing literature beyond using ICT apps during instruction and elementary literacy support to include the parent perspectives of secondary struggling readers and their intent to engage in timely, two-way communication with the school to support their learners (Kraft and Monti-Nussbaum, 2018; Snell et al., 2018).

Limitations of the Study

The first limitation to the reliability of this study was presented in Chapter 1, where I described my reflexivity practices designed to mitigate my personal biases, particularly as a teacher in the middle school (Johnson et al., 2020). To help trustworthiness, I addressed potential personal bias by placing the recruitment ad in the school's digital newsletter so that respondents learned about the study as part of the school's communications rather than from me. The study was limited also in that I screened the respondents to ensure they met all study criteria, such as having a student enrolled in the school's reading intervention program. Personal bias was addressed by using a research-based interview protocol that helped with trustworthiness by providing a consistent structure for the interviews, which was important for me as a novice researcher. Last, my seven reflexive journal questions supported the trustworthiness of the study by prompting me to reflect on each transcript and evaluate it for evidence of bias. This process revealed examples of personal bias, a pattern of empathetic comments outside of my interview protocol, in the first interview. As a result, I reflected in my journal on my beliefs about myself, the interview questions, and the participants. I decided to mitigate this by creating a new code for bias and tracking it in Quirkos and when answering my reflexive journal's iterative personal bias questions. I observed a steady decline in the number of bias related codes while coding the next two transcripts and journaling about my coding and analysis process. After finding no further evidence of bias in fourth through ninth transcripts, I interpreted this change to indicate that the

interview protocol and my journaling had mitigated this type of personal bias and increased the trustworthiness of my study.

The second limitation of this study discussed in Chapter 1 was its sample size of nine participants, which addressed by reaching thematic saturation and supported by the methodology detailed in Chapters 3 and 4. Braun and Clarke (2021) defined saturation as the qualitative researcher's evaluative process of continually questioning, reflecting on, and evaluating the data to determine when an amount sufficient to interpret its meaning has been collected and analyzed. The thematic saturation was reached through my iterative data coding, and analysis was supported by my reflexive journaling that I completed after coding each transcript. My journal questions prompted me to audit my data coding process and to challenge my assumptions about what the codes meant within each transcript and iteratively by comparing my coding and journal responses preceding transcripts. This iterative process generated thick description that increased the reliable representation of the participants' perspectives (see Poos et al., 2017).

Additional study limitations include the possible bias within the participant sample, which was comprised of parents who volunteered to be interviewed and who therefore may be more involved with their learners and the engaged with the school than others. Further, although none of the parents said they used the two primary software platforms issued by the school system through the school, because the study was limited to ICT apps in the form of cell phones, it was beyond the scope of the study to examine the parents' awareness and possible perspectives on these and other digital tools they may have used on devices such as a laptop or iPad.

Recommendations

The findings of this study indicated that parents of struggling readers in an urban Title I middle school are not only aware of ICT apps but that they perceive them as a necessity for connecting with the school and with other parents to support their school engagement. Further, parents unanimously prioritized two-way cell phone SMS and app-based communication with the school. Similarly, all parents in the study described difficulties in navigating the multiple communication information streams initiated by the school. All of the parents recommended that the school needs to simplify their ICT app communication, preferably via one ICT app, and to increase its accountability for timely and reliable communication that supports student achievement. It is important to note that the majority of parent perceptions also specified a need for increased accountability through timely and reliable communication regarding students' emotional and behavioral needs, citing that this need was heightened during COVID pandemic health crisis.

The following recommendations are based on the findings of this current study and its contextualization in the literature of Chapter 2, such as the positive relationship between parent engagement and academic success for struggling readers and developmental needs of adolescents. First, a recommendation for future research is to explore the perspectives of parents struggling readers and to consider adding the parents of other struggling subgroups within other Title I middle school populations. By doing so, researchers can evaluate the themes that emerge from the parents' experiences to determine if ICT apps are valued for effective, two-way engagement with the school that supports academic improvements.

In addition to exploring the perspectives of parents with students at Title I middle schools, I recommend investigating the perceptions of Title I secondary teachers of struggling readers who, along with the parents, share the responsibility of ensuring all students learn to read proficiently. Although the literature included findings related to cell phones and literacy outcomes, these were limited to early childhood and elementary teachers. Because the decision making for a school's communication policies and funding reside beyond the scope of parents and teachers, future studies should also examine the perspectives of Title I secondary school leaders regarding user-friendly ICT app-based communication that provides their parent populations with reliable and timely academic, emotional, and behavioral information as recommended by the parent in this current study. A final recommendation for future studies is to examine the perspectives of struggling readers in Title I secondary schools and how their experiences may inform leveraging the connection ICT apps can provide to them, their parents, teachers, and school leaders to support their emotional well-being and academic success.

Implications

The findings of this current study indicated the clear preference of parents for using ICT apps to support the academic achievement of their struggling readers in a Title I middle school. The implications of these findings provide guidance for Title I school leaders and teachers on how best to shift their family engagement practices and resources to comply with the ESSA-required home-school engagement compact through policy-making that provides accountability for timely and consistent two-way parent-school communication.

To implement such policies, the findings of the current study indicated the importance of investment in teacher professional development and app-based strategies to foster connections with parents in ways that support secondary students' reading achievement. Last, the findings of the current study may generate opportunities for positive social change by leveraging the ICT app communication preferred by parents of struggling readers and thereby amplify their voices among those of other stakeholders. Increased equitable parent access to two-way communication the school may expand understandings of effective, culturally competent parent-school engagement and expedite learner progress toward college and career readiness.

Conclusion

In this study, I explored the lived experiences of parents of struggling readers in a Title I middle school. Although federal Title I funding requires two-way parent-school engagement, the overall trend is that parent engagement declines at the secondary level, and with it often the academic benefits with which their engagement is associated (Alley, 2019). Schueler et al. (2017) found that parents experiencing lower SES tended to have limited online access and that their engagement was lower when the school issued one-way communication. However, in the digital age, ubiquitous ICT apps on cell phones provide timely, consistent, and reliable text messaging and email that was clearly preferred by the parents in this study. Federal and state lawmakers need to reframe Title I funding requirements to include evidence of parent ICT preferences for how two-way communication is structured for effective parent-school engagement. It is the responsibility of school leaders and teachers to prioritize ICT app-based approaches for

leveraging the benefits of parent engagement. The equitable collaboration of all voices

can contribute to the academic gains of struggling readers, their progress toward college

and career readiness, and the life choices their academic success can cultivate.

References

Alameda-Lawson, T., & Lawson, M. A. (2019). Ecologies of collective parent

    engagement in urban education. *Urban Education, 54*(8), 1085-

    1120. https://doi.org/10.1177%2F0042085916636654

Albro, J., & Turner, J. D. (2019). Six key principles: Bridging students' career dreams

    and literacy standards. *Reading Teacher, 73*(2), 161-

    172. https://doi.org/10.1002/trtr.1823

Alley, K. M. (2019). Fostering middle school students' autonomy to support motivation

    and engagement. *Middle School Journal, 50*(3), 5-

    14. https://doi.org/10.1080/00940771.2019.1603801

Anthony, C. J., & Ogg, J. (2019). Parent involvement, approaches to learning, and

    student achievement: Examining longitudinal mediation. *School Psychology,*

    34(4), 376-385. https://doi.org/10.1037/spq0000282

Areepattamannil, S., & Khine, M. S. (2017). Early adolescents' use of information and

    communication technologies (ICTs) for social communication in 20 countries:

    Examining the roles of ICT-related behavioral and motivational

    characteristics. *Computers in Human Behavior, 73*, 263-272.

    https://doi.org/10.1016/j.chb.2017.03.058

Atkinson, P., & Hammersley, M. (1994). Ethnography and participant observation. In N.

    K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 248–

    261). Sage.

Aykac, S., & Msengi, C. (2019). Influence of parental involvement on students' success

in Title I charter school in Texas as perceived by middle school principals. *School Leadership Review, 14*(1), 78-90. https://bit.ly/3txhwOQ

Baker, T. L., Wise, J., Kelley, G., & Skiba, R. J. (2016). Identifying barriers: Creating solutions to improve family engagement. *School Community Journal, 26*(2), 161-184. http://www.schoolcommunitynetwork.org/SCJ.aspx

Barrs, M. (2017). Rediscovering Vygotsky's concept of the ZPD: Stanley Mitchell's new translation of "The Problem of Teaching ['Obuchenie'] and Mental Development at School Age." *Changing English: Studies in Culture and Education, 24*(4), 345-358. https://doi.org/10.1080/ 1358684X.2017.1376448

Baxter, J., & Eyles, J. (2004). Evaluating qualitative research in social geography: Establishing 'Rigour' in interview analysis. *Transactions of the Institute of British Geographers*, 505-525. https://doi.org/10.1111/j.0020-2754.1997.00505

Beecher, C., & Buzhardt, J. (2016). Mobile technology to increase parent engagement. *IxD&A, 28*, 49-68. https://bit.ly/3edKg8N

Benner, A. D., Boyle, A. E., & Sadler, S. (2016). Parental involvement and adolescents' educational success: The roles of prior achievement and socioeconomic status. *Journal of Youth and Adolescence, 45*(6), 1053-64. https://doi.org/10.1007/s10964-016-0431-4

Bergman, P. (2015). *Parent-child information frictions and human capital investment: Evidence from a field experiment*. CESifo Working Paper Series No. 5391, 1-65. https://ssrn.com/abstract=2622034

Bippert, K. (2019). Perceptions of technology, curriculum, and reading strategies in one

middle school intervention program. *RMLE Online: Research in Middle Level Education, 42*(3), 1-22. https://doi.org/10.1080/19404476.2019.1565600

Bloor, M. (1978). On the analysis of observational data: A discussion of the worth and uses of inductive techniques and respondent validation. *Sociology, 12*(3), 545-552. https://doi.org/10.1177/003803857801200307

Bojczyk, K. E., Haverback, H. R., Pae, H. K., Hairston, M., & Haring, C. D. (2019). Parenting practices focusing on literacy: A study of cultural capital of kindergarten and first-grade students from low-income families. *Early Child Development and Care, 189*(3), 500-512. https://doi.org/10.1080/03004430.2017.1328416

Bojczyk, K., Rogers Haverback, H., Pae, H., Davis, A., & Mason, R. (2015). Cultural capital theory: A study of children enrolled in rural and urban Head Start programmes. *Early Child Development & Care, 185*(9), 1390-1408. https://doi.org/10.1080/03004430.2014.1000886

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health, 13*(2), 201-216. https://doi.org/10.1080/2159676X.2019.1704846

Brooks, R. (2015). Social and spatial disparities in emotional responses to education: Feelings of 'guilt' among student-parents. *British Educational Research Journal, 41*(3), 505-519. https://doi.org/10.1002/berj.3154

Byrne, M. M. (2001). Evaluating the findings of qualitative research. *AORN Journal,*

73(3), 703. https://doi.org/10.1016/s0001-2092(06)61966-2

Cabell, S. Q., Zucker, T. A., DeCoster, J., Copp, S. B., & Landry, S. (2019). Impact of a

parent text messaging program on pre-kindergarteners' literacy

development. *AERA Open, 5*(1), 1-16. 2332858419833339

Cabrero, R. S., & Román, O. C. (2018). Psychopedagogical predecessors of connectivism

as a new paradigm of learning. *International Journal of Educational Excellence,*

4(2), 29-45. https://bit.ly/3ehIN13

Caldas, S. J., Gómez, D. W., & Ferrara, J. (2019). A comparative analysis of the impact

of a full-service community school on student achievement. *Journal of Education*

for Students Placed at Risk, 24(3), 197-217.

https://doi.org/10.1080/10824669.2019.1615921

Camilleri, M. A., & Camilleri, A. C. (2017). Digital Learning Resources and Ubiquitous

Technologies in Education. *Technology, Knowledge and Learning, 22*(1), 65-

82. http://dx.doi.org/10.1007/s10758-016-9287-7

Cappello, M., Wiseman, A., & Turner, J. (2019). Framing equitable classroom practices:

potentials of critical multimodal literacy research. *Literacy Research: Theory,*

Method, and Practice. 68(1), 205-225. https://doi.org/10.1002/trtr.1823

Carnevale, A., Strohl, J., Ridley, N., and Gulish, A. (2018). *Three educational pathways*

to good jobs: High school, middle skills, and bachelor's degree. Georgetown

University Center for Education and the Workforce and McCourt School of

Public Policy. https://cew.georgetown.edu/cew-reports/3pathways/

Castleman, B. L., & Lindsay C. (2017). Parental influences on postsecondary decision

making: Evidence from a text messaging experiment. *Educational Evaluation and Policy Analysis 39*(2), 361-377. https://bit.ly/3dvojTy

Cavanagh, S. (2012). Parental Engagement Proves No Easy Goal. *Education Week, 31*(27), 16-17. http://www.edweek.org/ew/toc/2012/04/04/index.html

Cho, J., & Trent, A. (2006). Validity in qualitative research revisited. *Qualitative Research, 6*(3), 319-340. https://bit.ly/3gkTiDH

- Christ, T., Chiu, M. M., Rider, S., Kitson, D., Hanser, K., McConnell, E., . . . & Mayernik, H. (2018). Cultural relevance and informal reading inventory performance: African-American primary and middle school students. *Literacy Research and Instruction, 57*(2), 117-134. https://doi.org/10.1080/19388071.2018.1424274

Clarà, M., & Barberà, E. (2014). Three problems with the connectivist conception of learning. *Journal of Computer Assisted Learning, 30*(3), 197–206. https://doi.org/10.1111/jcal.12040

Coffin, C. & Meghjani, T. (2020). *Transition to College or Career for the District's High School Students*, D. C. Policy Center. https://bit.ly/3hps4fG

Collins, C. S., & Stockton, C. M. (2018). The central role of theory in qualitative research. *International Journal of Qualitative Methods, 17*(1), 1-10. https://tarjomefa.com/wp-content/uploads/2019/10/F1449-TarjomeFa-English.pdf

Consolidate communication for your organization, 2021. https://www.remind.com/plans

Coombs, D. L., & Howard, C. (2017). "What kind of reader are you?" Self-regulating

middle school reading practices. *Voices from the Middle, 25*(2), 70–76.

https://www.proquest.com/docview/1975980226/fulltextPDF/F7E4C7EDE2574F

BDPQ/1?accountid=14872

Corbett, F., & Spinello, E. (2020). Connectivism and leadership: Harnessing a learning

theory for the digital age to redefine leadership in the twenty-first

century. *Heliyon, 6*(1). https://doi.org/10.1016/j.heliyon.2020.e03250

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and*

mixed methods approaches. Sage.

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing*

among five approaches. Sage.

Crosby, S. A., Rasinski, T., Padak, N., & Yildirim, K. (2015). A 3-year study of a school-

based parental involvement program in early literacy. *The Journal of Educational*

Research, 108(2), 165-172. https://10.1080/00220671.2013.867472

Cross, F. L., Marchand, A. D., Medina, M., Villafuerte, A., & Rivas, D. D. (2019).

Academic socialization, parental educational expectations, and academic self-

efficacy among Latino adolescents. *Psychology in the Schools, 56*(4), 483–496.

https://doi-org.ezp.waldenulibrary.org/10.1002/pits.22239

Curry, K. A., & Holter, A. (2019). The influence of parent social networks on parent

perceptions and motivation for involvement. *Urban Education*, *54*(4), 535-563.

https://doi.org/10.1177/0042085915623334

Day, E., & Dotterer, A. M. (2018). Parental involvement

and adolescent academic outcomes: Exploring differences in beneficial strategies

across racial/ethnic groups. *Journal of Youth and Adolescence, 47*(6), 1332–1349.

https://psycnet.apa.org/doi/10.1007/s10964-018-0853-2

DeCino, D. A., & Waalkes, P. L. (2019). Aligning epistemology with member

checks. *International Journal of Research & Method in Education, 42*(4), 374–

384. https://doi-org.ezp.waldenulibrary.org/10.1080/1743727X.2018.1492535

Denzin NK. (2009). The elephant in the living room: or extending the conversation about

the politics of evidence. *Qualitative Research. 9*(2):139-

160. https://doi.org/10.1177%2F1468794108098034

DeSpain, S. N., Conderman, G., & Gerzel-Short, L. (2018). Fostering family engagement

in middle and secondary schools. *Clearing House, 91*(6), 236–242. https://doi-

org.ezp.waldenulibrary.org/10.1080/00098655.2018.1524743

Deutschlander, D. (2019). Enhancing engagement with faculty and staff to facilitate

student success: An evaluation of a parent intervention. *Educational*

Evaluation and Policy Analysis, 41(3), 239-259.

https://doi.org/10.3102%2F0162373719845653

DeVoss, Betsy. US Secretary of Education. (2019, October 30) Statement from

Secretary DeVoss on 2019 NEAP Results [Press release].

https://www.ed.gov/news/speeches/prepared-remarks-secretary-devos-2019-

national-assessment-educational-progress-results

Downes S. (2012). Connectivism and connective knowledge. Essays on meaning and

learning networks.

https://www.oerknowledgecloud.org/archive/Connective_Knowledge-

19May2012.pdf

Downes S. (2019). Recent work in connectivism. *European Journal of Open, Distance and e-Learning. 22*(2). https://10.2478/eurodl-2019-0014

Duan, J., Xie, K., Hawk, N. A., Yu, S., & Wang, M. (2019). Exploring a Personal Social Knowledge Network (PSKN) to aid the observation of connectivist interaction for high- and low-performing learners in connectivist massive open online courses. *British Journal of Educational Technology, 50*(1), 199–217. https://doi-org.ezp.waldenulibrary.org/10.1111/bjet.12687

Durkin, J., Jackson, D., & Usher, K. (2020). Qualitative research interviewing: reflections on power, silence and assumptions. *Nurse Researcher*, *28*(4). https://hdl.handle.net/1959.11/36599

Ekowo, M. (2017, August 23). George Siemens and David Wiley join forces for a MOOC about open eEducation. EdSurge News. EdSurge. https://bit.ly/3stsOlD

Elish-Piper, L. (2016). Parent involvement in reading. *Illinois Reading Council Journal, 45*(1), 41-44. https://bit.ly/3efsZvN

Erdener, M. A., & Knoeppel, R. C. (2018). Parents' perceptions of their involvement in schooling. *International Journal of Research in Education and Science, 4*(1), 1–13. https://doi.org/10.21890/ijres.369197

Escobar, A. M. (2019). Affecting reading comprehension through ICTs in question-answer relationship in EFL classroom. *Revista Electrónica TicALS, 1*(5), 71-117. https://intellectum.unisabana.edu.co/handle/10818/31910

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling

and purposive sampling. *American journal of theoretical and applied statistics,*
5(1), 1-4.

Eutsler, L., & Antonenko, P. (2018). Predictors of portable technology adoption
intentions to support elementary children reading. *Education and Information*
Technologies, 23(5), 1971-1994.

http://dx.doi.org.ezp.waldenulibrary.org/10.1007/s10639-018-9700-z

Fan, W. & Williams, C. (2018). The mediating role of student motivation in the linking
of perceived school climate and achievement in reading and
mathematics. *Frontiers in Education, 3*. https://doi-
org.ezp.waldenulibrary.org/10.3389/feduc.2018.00050

Fantuzzo, J., Tighe, E., & Childs, S. (2000). Family involvement questionnaire: A
multivariate assessment of family participation in early childhood
education. *Journal of Educational Psychology, 92*(2),
367. https://psycnet.apa.org/doi/10.1037/0022-0663.92.2.367

Farkas, W. A., & Jang, B. G. (2019). Designing, implementing, and evaluating a school-
based literacy program for adolescent learners with reading difficulties: A mixed-
methods study. *Reading & Writing Quarterly, 35*(4), 305-
321. https://doi.org/10.1080/10573569.2018.1541770

Fernandez, F. & Liu, H. (2019). Examining relationships between soft skills and
occupational outcomes among U.S. adults with—and without—
university degrees. *Journal of Education and Work, 32*(8), 650-664, https://doi-
org.ezp.waldenulibrary.org/10.1080/13639080.2019.1697802

Fletcher, J. (2017). What can we do to support reading for young adolescent

students? *Education, 45*(2), 258-271.

https://doi.org/0.1080/03004279.2016.1170064

Flick, U. (2019). Managing Quality in Qualitative Research. (n.d.).

https://dx.doi.org/10.4135/9781529716641

Foley, K., Alturkistani, A., Carter, A., Stenfors, T., Blum, E., Car, J., ... & Meinert, E.

(2019). Massive open online courses (MOOC) evaluation methods: protocol for a

systematic review. *JMIR research protocols, 8*(3),

e12087. https://doi.org/10.2196/12087

Fox, K. R. (2016). Homework as a family literacy practice: What counts as best practices

for children deemed as high risk for academic failure due

to socioeconomic status. *School Community Journal, 26*(2), 215-236.

http://www.schoolcommunitynetwork.org/SCJ.aspx

Fredricks, J. A., Parr, A. K., Amemiya, J. L., Wang, M.-T., & Brauer, S. (2019). What

matters for urban adolescents' engagement and disengagement in school: A

mixed-methods study. *Journal of Adolescent Research, 34*(5), 491–527.

https://psycnet.apa.org/doi/10.1177/0743558419830638

Froiland, J. & Worrell, F. (2017) Parental autonomy support, community feeling and

student expectations as contributors to later achievement among

adolescents*, Educational Psychology, 37*(3), 261-271.

https://doi.org/10.1080/01443410.2016.1214687

Glatthorn, A. (1998). Writing the Winning Dissertation: A Step-by-Step Guide. (1st ed.).

Corwin Press.

Gauvreau, A. N., & Sandall, S. R. (2019). Using mobile technologies to communicate with parents and caregivers. *Young Exceptional Children, 22*(3), 115–126. https://doi.org/10.1177%2F1096250617726530

Gerzel-Short, L., & Conderman, G. (2019). Family engagement and tiered approaches for middle and secondary students. *Clearing House: A Journal of Educational Strategies, Issues and Ideas, 92*(4–5), 135–142. https://doi.org/10.1080/00098655.2019.1625855

Given, L. M. (2008). The SAGE encyclopedia of qualitative research methods (1), Sage. https://bit.ly/3ebRqua

Goldie, J. G. S. (2016). Connectivism: A knowledge learning theory for the digital age?. *Medical teacher, 38*(10), 1064-1069. https://doi.org/10.3109/0142159X.2016.1173661

Gutiérrez, M., Tomás, J. M., Romero, I., & Barrica, J. M. (2017). Perceived social support, school engagement and satisfaction with school. *Revista de Psicodidáctica (English ed.)*, *22*(2), 111-117. https://revistadepedagogia.org/wp-content/uploads/2019/01/REP_272_Perceived-social-support-and-school-engagement.pdf

Gutman, L. & McLoyd, V. (2000). Parents' management of their children's education within the home, at school, and in the community: An examination of African American families living in poverty. *The Urban Review 32*(1), 1-24. https://psycnet.apa.org/doi/10.1023/A:1005112300726

Hamlin, D., & Flessa, J. (2018). Parental involvement initiatives: An analysis. *Educational Policy, 32*(5), 697-727. https://doi.org/10.1177/0895904816673739

Hampden-Thompson, G., Guzman, L., & Lippman, L. (2013). A cross-national analysis of parental involvement and student literacy. *International Journal of Comparative Sociology, 54*(3), 246–266. https://doi.org/10.1177%2F0020715213501183

Henderson, L. J., Williams, J. L., & Bradshaw, C. P. (2020). Examining home-school dissonance as a barrier to parental involvement in middle school. *Preventing School Failure: Alternative Education for Children and Youth, 64*(3), 201–211. https://doi.org/10.1080/1045988x.2020.1719964

Herman, K. C., Reinke, W. M., Dong, N., & Bradshaw, C. P. (2020). Can effective classroom behavior management increase student achievement in middle school? Findings from a group randomized trial. *Journal of Educational Psychology*. 1-18. https://doi-org.ezp.waldenulibrary.org/10.1037/edu0000641

Hernandez-Gantes, V. M., Keighobadi, S., & Fletcher Jr., E. C. (2018). Building community bonds, bridges, and linkages to promote the career readiness of high school students in the United States. *Journal of Education & Work, 31*(2), 190–203. https://doi-org.ezp.waldenulibrary.org/10.1080/13639080.2018.1434871

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45(*3), 740–763. https://doi.org/10.1037/a0015362

Hill, N. E., Witherspoon, D. P., & Bartz, D. (2018). Parental involvement in education

    during middle school: Perspectives of ethnically diverse parents, teachers,

    and students. *The Journal of Educational Research, 111*(1), 12–

    27. https://doi.org/10.1080/00220671.2016.1190910

Lobe, B., Morgan, D., & Hoffman, K. A. (2020). Qualitative data collection in an era of

    social distancing. *International Journal of Qualitative Methods*, *19*.

    https://doi.org/10.1177%2F1609406920937875

Hopman, J. (2021). Fieldwork supervision: supporting ethical reflexivity to enhance

    research analysis, *International Journal of Research & Method in*

    Education, 44(1), 41-52. https://doi-

    org.ezp.waldenulibrary.org/10.1080/1743727X.2019.1706467

Houri, A. K., Thayer, A. J., & Cook, C. R. (2019). Targeting parent trust to enhance

    engagement in a school–home communication system: A double-blind experiment

    of a parental wise feedback intervention. *School Psychology, 34*(4), 421–432.

    https://psycnet.apa.org/doi/10.1037/spq0000318

Hung, M., Smith, W. A., Voss, M. W., Franklin, J. D., Gu, Y., & Bounsanga, J. (2020).

    Exploring student achievement gaps in school districts across the United

    States. *Education and Urban Society, 52*(2), 175–193.

    https://doi.org/10.1177%2F0013124519833442

Hutchison, K., Paatsch, L., & Cloonan, A. (2020). Reshaping home-school connections in

    age: Challenges for teachers and parents. *E-Learning and Digital Media, 17*(2),

    167–182. https://doi.org/10.1177%2F2042753019899527

Jacob, S. & Furgerson, S. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *The Qualitative Report 2012, T&L Art. 6*, 1-10 http://www.nova.edu/ssss/QR/QR17/jacob.pdf

Jahani Yalmeh, Z., Zainalipour, H., & Zarei, E. (2020). Designing a higher education curriculum framework based on Connectivism approach. *Iranian Evolutionary and Educational Psychology Journal, 2*(1), 1-12.

https://www.frontiersin.org/articles/10.3389/fpsyg.2021.647948/full

Jensen, K. L., & Minke, K. M. (2017). Engaging families at the secondary level: An underused resource for student success. *The School Community Journal, 27*(2), 167–191. https://sedl.org/connections/resources/rb/rb3-Secondary.pdf

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education, 42*(1), 82–110. http://dx.doi.org/10.1177/0042085906293818

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A Review of the Quality Indicators of Rigor in Qualitative Research. *American Journal of Pharmaceutical Education, 84*(1), 138–146. https://doi-org.ezp.waldenulibrary.org/10.5688/ajpe7120

JSS [The School System] Office of the State Superintendent (JSS [The school system] OSSE) (2013) State Literacy Plan. https://osse.JSS [the school system].gov/sites/default/files/JSS [the school system]/sites/osse/publication/attachments/State.Literacy.Plan_Edited_03.14.13_1

.pdf

JSS [The School System] Office of the State Superintendent (JSS) [The school system]
OSSE) (2019). JSS [The school system] School Report Card 2018-19. https://JSS
[the school system]schoolreportcard.org/state/99999-0000/college-career-
readiness

JSS [The School System].gov. (2018a). Parent and family engagement under ESSA:
Requirements and resources. https://osse.JSS [the
school system].gov/page/parent-and-family-engagement-under-essa-
requirements-and-resources

JSS [The School System].gov. (2018b). The key to my child's success in school? Parent
involvement! MAEC. (2018, Sept. 10). https://osse.JSS [the school
system].gov/event/JSS [the school system]-fifth-annual-parent-and-family-
engagement-summit

Kaya, Z. (2019). Development and learning. *Journal of Educational and Instructional
Studies in the World. 9*(3), 1–17. ISSN: 2146-7463

Kelty, N. and Wakabayashi, T. (2020). Family Engagement in Schools: Parent, Educator,
and Community Perspectives. Sage Open, 10. https://doi-
org.ezp.waldenulibrary.org/10.1177/2158244020973024

Kingdon, D., Serbin, L. A., & Stack, D. M. (2017). Understanding the gender gap in
school performance among low-income children: A developmental trajectory
analysis. *International Journal of Behavioral Development, 41*(2), 265-274.
https://doi.org/10.1177%2F0165025416631836

Kolowich, S., (2014, January 17). George Siemens Gets Connected. Chronicle of Higher

   Education. https://library.iliauni.edu.ge/wp-content/uploads/2017/04/January-17-

   2014

Kop, R., & Hill, A. (2008). Connectivism: Learning theory of the future or vestige of

   the past?. *The International Review of Research in Open and Distributed*

   Learning, 9(3). https://doi.org/10.19173/irrodl.v9i3.523

Korstjens, I. & Moser, A. (2018) Series: Practical guidance to qualitative research. Part 4:

   Trustworthiness and publishing. *European Journal of General Practice, 24*(1),

   120-124. https://doi.org/10.1080/13814788.2017.1375092

Kraft, M. A. (2017). Engaging parents through better communication

   systems. *Educational Leadership, 75*(1), 58–62.

   https://scholar.harvard.edu/files/mkraft/files/kraft_monti-

   nussbaum_2017_can_schools_enable_parents_to_prevent_summer_annals.pdf

Kraft, M. A., & Monti-Nussbaum, M. (2017). Can schools enable parents to prevent

   summer learning loss? A text-Messaging field experiment to promote literacy

   skills. *The Annals of the American Academy of Political and Social*

   Science, *674*(1), 85–112.

Kraft, M. A., & Rogers, T. (2015). The underutilized potential of teacher-to-parent

   communication: Evidence from a field experiment. *Economics of Education*

   Review, 47, 49–63.

   https://scholar.harvard.edu/files/todd_rogers/files/empirical_in_press.kraft_rogers.

   pdf

Kuisma, M. (2018). Narratives of inquiry learning in middle-school geographic inquiry

    class. *International Research in Geographical & Environmental Education, 27*(1),

    85–98. https://doi-org.ezp.waldenulibrary.org/10.1080/10382046.2017.1285137

Lam, B. & Ducreux, E. (2013) Parental influence and academic achievement among

    middle school students: Parent perspective. *Journal of Human Behavior in the*

    Social Environment, *23*(50), 579-590.

    https://doi.org/10.1080/10911359.2013.765823

Langley, A., & Meziani, N. (2020). Making interviews meaningful. *The Journal*

    of Applied Behavioral Science, 56(3), 370–391.

    https://doi.org/10.1177%2F0021886320937818

Latunde, Y. & Clark-Louque, A. (2016). Untapped Resources: Black Parent Engagement

    that Contributes to Learning. *The Journal of Negro Education, 85*(1), 72-81.

    https://doi.org/10.7709/jnegroeducation.85.1.0072

Lazaros, E. J. (2016). Using email-based text messaging to effectively communicate with

    parents and students. *Tech Directions, 76*(1), 23.

    http://www.omagdigital.com/publication/?i=333226&article_id=2568239&view=

    articleBrowser&ver=html5

Leech, Nancy L. (2005). The role of sampling in qualitative research. *Academic*

    Exchange Quarterly. https://www.qualitative-

    research.net/index.php/fqs/article/view/1428/3028

Lewin, D. S., Wang, G., Chen, Y. I., Skora, E., Hoehn, J., Baylor, A., & Wang, J. (2017).

    Variable school start times and middle school student's sleep health and academic

performance. *Journal of Adolescent Health, 61*(2), 205-211.

Lichtman, M. (2013). *Qualitative research for the social sciences*. Sage.

Lincoln, S. Y. & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage.

Liu, I.-F., & Ko, H.-W. (2019). Roles of paper-based reading ability and ICT-related

skills in online reading performance. *Reading and Writing:* An *Interdisciplinary*

Journal, 32(4), 1037–1059. https://doi.org/10.1007/s11145-018-9892-z

Madhok, R., Frank, E., & Heller, R. F. (2018). Building public health capacity through

online global learning. *Open Praxis, 10*(1), 91–97.

https://www.learntechlib.org/p/182379/

Madjar, N., Shklar, N., & Moshe, L. (2016). The role of parental attitudes in children's

motivation toward homework assignments. *Psychology in the Schools, 53*(2), 173-

188. https://doi.org/10.1002/pits.21890

Marschall, M. J., & Shah, P. R. (2020). Linking the process and outcomes of parent

involvement policy to the parent involvement gap. *Urban Education, 55*(5), 699–

729. https://doi.org/10.1002/JAAL.00027

Martinez, G. (2011). Literacy success: Fifty students from areas throughout the United

States share their stories. *Journal of Adolescent & Adult Literacy, 55*(3), 221–231.

https://doi.org/10.1002/JAAL.00027

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative

interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social*

Research, 11(3), Art. 8. https://doi.org/10.17169/fqs-11.3.1428

Mattar, J. (2018). Constructivism and connectivism in education technology: Active,

situated, authentic, experiential, and anchored learning. *RIED:*

Revista Iberoamericana de Educación a Distancia, 21(2), 201-217.

https://doi.org/10.5944/ried.21.2.20055

Maxwell, J. A. (2012). Qualitative research design: An interactive approach (Vol. 41).

Sage.

Mayer, S. E., Kalil, A., Oreopoulos, P., & Gallegos, S. (2015). Using behavioral insights

to increase parental engagement: The parents and children together (PACT)

intervention. (NBER Working Paper No. 21602).

https://www.nber.org/system/files/working_papers/w21602/w21602.pdf

McCoy, D. C., Yoshikawa, H., Ziol-Guest, K. M., Duncan, G. J., Schindler, H. S.,

Magnuson, K., Shonkoff, J. P. (2017). Impacts of early childhood education

on medium- and long-term educational outcomes. *Educational Researcher, 46*(8),

474–487. https://doi.org/10.3102/0013189X17737739

McElhaney, K. B., Allen, J. P., Stephenson, J. C., & Hare, A. L. (2009). Attachment and

autonomy during adolescence.

McKenna, M.C., Conradi, K., Lawrence, C., Jang, B.G. and Meyer, J.P. (2012). Reading

attitudes of middle school students: Results of a U.S. survey. Read Res Q, (47),

283-306. https://doi:10.1002/rrq.021

McWayne, C. M., G. Melzi, M. C. Limlingan, and A. Schick. 2016. Ecocultural patterns

of family engagement among low-income Latino families of preschool

children. *Developmental Psychology 52* (7):1088–102.

https://psycnet.apa.org/doi/10.1037/a0040343

Mendez, J. L., & Swick, D. C. (2018). Guilford Parent Academy: A Collaborative Effort to Engage Parents in Children's Education. *Education and Treatment of Children, 41*(2), 249–268. https://doi-org.ezp.waldenulibrary.org/10.1353/etc.2018.0011

Merriam, S. B., & Tisdell, E. J. (2016). Qualitative research: A guide to design and implementation (4th ed.). Jossey Bass.

Meyer, K., & Willis, R. (2019). Looking back to move forward: The value of reflexive journaling for novice researchers. *Journal of Gerontological Social Work, 62*(5), 578–585. https://doi.org/10.1080/01634372.2018.1559906

Minkel, J. (2017). Welcome families by focusing on strengths. *Educational Leadership, 75*(1), 71-74. https://www.ascd.org/el/articles/welcome-families-by-focusing-on-strengths

Mohajan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People, 7*(1), 23-48. https://doi.org/10.26458/jedep.v7i1.571

Moustakas, C. (1994). Human science perspectives and models. *Phenomenological Research Methods*. (1-24). Sage. https://dx.doi.org/10.4135/9781412995658

Namey, E. & Trotter, R. (2015). Qualitative research methods. *Public Health Research Methods* (442-482). Sage. https://dx.doi.org/10.4135/9781483398839

National Center for Education Statistics (NCES)a, (2019). U.S. Department of Education. 2019 Reading Trial Urban District Snapshot Report Grade 8. https://osse.JSS [the school system].gov/sites/default/files/JSS [the school system]/sites/osse/publication/attachments/[THE SCHOOL

SYSTEM]%20%28TUDA%29%208%20Read%20Snapshot.pdf

National Center for Education Statistics (NCES)b, (2019). U.S. Department of Education. State Achievement Results 2019 NEAP Report Card: Reading, Grade 8. https://www.nationsreportcard.gov/reading/states/achievement/?grade=8

National Center for Education Statistics (NCES)c. (2019). District of Columbia (JSS https://www.nationsreportcard.gov/profiles/districtprofile/overview/XW?cti=PgTab_ScoreComparisons&chort=2&sub=RED&sj=XW&fs=Grade&st=AP&year=2019R3&sg=Gender%3A+Male+vs.+Female&sgv=Difference&ts=Single+Year&sfj=NL

Nattoch Dag, K. (2017). A scholar-practitioner perspective on a leadership development program in health care: Integrating connectivism theory. Advances in Developing Human Resources, 19(3), 295–313. https://doi.org/10.1177/1523422317712671

Nemer, D. (2015). From Digital Divide to Digital Inclusion and Beyond. *The Journal of Community Informatics, 11*(1). http://ci-journal.net/index.php/ciej/article/view/1030/1131

Núñez, J. Epstein, J., Suárez, N., Rosário, P., Vallejo, G., & Valle, A. (2017). How do student prior achievement and homework behaviors relate to perceived parental involvement in homework? *Frontiers in Psychology*, 8. https://doi-org.ezp.waldenulibrary.org/10.3389/fpsyg.2017.01217

Oddone, K., Hughes, H., & Lupton, M. (2019). Teachers as connected professionals: A model to support professional learning through personal learning networks. *International Review of Research in Open and Distributed Learning,*

20(3), 102–120. https://files.eric.ed.gov/fulltext/EJ1223631.pdf

Orkin, M., May, S., & Wolf, M. (2017). How parental support during homework contributes to helpless behaviors among struggling readers, *Reading Psychology, 38*:5. https://psycnet.apa.org/doi/10.1080/02702711.2017.1299822

Padilla, G., Guerra, F., & Zamora, R. (2021). Effective school leadership: School staff and parent perceptions. *International Journal of Arts Humanities and Social Sciences Studies*. http://www.ijahss.com/Paper/06042021/1179451402.pdf

Pando, V. F. (2018). Teaching trends in virtual eEducation: An interpretative approach. *Propósitos y Representaciones, Ene.-Jun. 2018, 6*(1), 463-505. http://dx.doi.org/10.20511/pyr2018.v6n1.167

Park, S., & Holloway, S. D. (2017). The effects of school-based parental involvement on academic achievement at the child and elementary school level: A longitudinal study. *The Journal of Educational Research, 110*(1), 1–16. https://psycnet.apa.org/doi/10.1080/00220671.2015.1016600

Person, D., Dawson, R., García, Y., & Jones, A. (2017). The Intersectionality of gender and race-programs to support men of color in education. *New Directions for Community Colleges*, (179), 67–76. https://doi-org.ezp.waldenulibrary.org/10.1002/cc.20263

Pew Research Center. (2021). Mobil fact sheet, who owns cellphones and smartphones. https://www.pewresearch.org/internet/fact-sheet/mobile/

Poos, J. M., van den Bosch, K., & Janssen, C. P. (2017). Battling bias: Effects of training and training context. *Computers & Education*, 111, 101-113.

https://doi.org/10.1016/j.compedu.2017.04.004

Posey-Maddox, L., & Haley-Lock, A. (2020). One size does not fit all: Understanding
parent engagement in the contexts of work, family, and public schooling. *Urban
Education, 55*(5), 671–698. https://doi-
org.ezp.waldenulibrary.org/10.1177/0042085916660348

Quirkos. https://www.quirkos.com/index.html

Ramírez-Rueda, M. del C., Cózar-Gutiérrez, R., Roblizo Colmenero, M. J., & González-
Calero, J. A. (2021). Towards a coordinated vision of ICT in education:
A comparative analysis of preschool and primary education teachers' and parents'
perceptions. *Teaching & Teacher Education*, 100, N.PAG. https://sci-
hub.se/10.1016/J.TATE.2021.103300

Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual,
theoretical, and methodological*. Sage.

Ross, M. W., Iguchi, M. Y., & Panicker, S. (2018). Ethical aspects of data sharing and
research participant protections. *American Psychologist, 73*(2), 138.
https://psycnet.apa.org/doi/10.1037/amp0000240

Rubin, I. S., Rubin, H. J. (2012). *Qualitative Interviewing: The Art of Hearing
Data*. India: Sage.

Rudi, J., Dworkin, J., Walker, S., & Doty, J. (2015). Parents' use of information and
communications technologies for family communication: differences by age of
children. *Information, Communication & Society, 18*(1), 78-93.
https://psycnet.apa.org/doi/10.1080/1369118X.2014.934390

Saldaña, J., & Omasta, M. (2016). *Qualitative research: Analyzing life*. Sage.

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014).
Ethical challenges of researchers in qualitative studies: the necessity to develop a
specific guideline. *Journal of Medical Ethics and History of Medicine, (7,)* 14.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/

Scammacca, N. K., Roberts, G. J., Cho, E., Williams, K. J., Roberts, G., Vaughn, S. R., &
Carroll, M. (2016). A century of progress: Reading interventions for students in
grades 4-12, 1914-2014. *Review of Educational Research, 86*(3).
https://10.3102/0034654316652942

Schreier, M. (2012). Qualitative content analysis in practice. Thousand Oaks, CA: Sage.

Schueler, B. E., McIntyre, J. C., & Gehlbach, H. (2017). Measuring Parent Perceptions of
Family-School Engagement: *The Development of New Survey Tools. School
Community Journal, 27*(2), 275-301.
https://files.eric.ed.gov/fulltext/EJ1165635.pdf

Selwyn, N., Nemorin, S., & Johnson, N. (2017). High-tech, hardwork: An
investigation of teachers' work in the digital age. Learning, Media and
Technology 42(4): 390–405. https://doi.org/10.1080/17439884.2016.1252770

Shaban, R. (2009). Robert K. Yin Case Study Research: Design and Methods, Fourth
Edition, Australasian Emergency Nursing Journal, 12(2), 59–60. https://doi-
org.ezp.waldenulibrary.org/10.1016/j.aenj.2009.01.

Shin, S. Y. ., & Miller, S. . (2022). A Review of the Participant Observation Method in
Journalism: Designing and Reporting. *Review of Communication Research*, *10*.

Retrieved from https://rcommunicationr.org/index.php/rcr/article/view/13

Siemens, G. (2004). Connectivism: A learning theory for the digital

age. http://www.elearnspace.org/Articles/connectivism.htm

Siemens, G. (2006). Knowing knowledge. ISBN 978-1-4303-0230-8. Creative

Commons.

Siemens, G. (2019). Learning analytics and open, flexible, and distance

learning, *Distance Education, 40*:3, 414-

418, DOI: 10.1080/01587919.2019.1656153

Sitti, S., Sopeerak, S., & Sompong, N. (2013). Development of instructional model based

on connectivism learning theory to enhance problem-solving skill in ICT for daily

life of higher education students. *Procedia - Social and Behavioral Sciences*, 103,

315–322. https://doi.org/10.1016/j.sbspro.2013.10.339

Smith, T. E., Reinke, W. M., Herman, K. C., & Huang, F. (2019). Understanding family–

school engagement across and within elementary- and middle-school

contexts. *School Psychology, 34*(4), 363–

375. https://doi.org/10.1037/spq0000290

Smith, T. E., Sheridan, S. M., Kim, E. M., Park, S., & Beretvas, S. N. (2020). The effects

of family-school partnership interventions on academic and social-emotional

functioning: A meta-analysis exploring what works for whom.

Educational *Psychology Review, 32*(2), 511–544.

https://psycnet.apa.org/doi/10.1007/s10648-019-09509-w

Smythe-Leistico, K., & Page, L. C. (2018). Connect-text: Leveraging text-message

communication to mitigate chronic absenteeism and improve parental engagement

in the earliest years of schooling. *Journal of Education for Students Placed at*

Risk, 23(1–2), 139–152. https://doi.org/10.1080/10824669.2018.1434658

Snell, E. K., Hindman, A. H., & Wasik, B. A. (2018). Exploring the use of texting to

support family-school engagement in early childhood settings: Teacher and

family perspectives. *Early Child Development and Care*. 1–14.

https://sites.temple.edu/emilyksnell/files/2014/04/Snell-Hindman-Wasik-2018.pdf

Stake, R. E. (2010). *Qualitative research: Studying how things work* (Illustrated ed.). The

Guilford Press. https://evaluationcanada.ca/system/files/cjpe-entries/26-1-088.pdf

Statti, A., & Torres, K. M. (2020). Digital literacy: The need for technology integration

and its impact on learning and engagement in community school

environments. *Peabody Journal of Education, 95*(1), 90-100.

https://doi.org/10.1080/0161956X.2019.1702426

Strambler, M. J., Linke, L. H., & Ward, N. L. (2013). Academic identification as a

mediator of the relationship between parental socialization and academic

achievement. *Contemporary Educational Psychology, 38*(1), 99–106. https://doi-

org.ezp.waldenulibrary.org/10.1016/j.cedpsych.2012.11.001

Swanson, E., Wanzek, J., Vaughn, S., Fall, A., Roberts, G., Hall, C., & Miller, V.

(2017). Middle school reading comprehension and content learning intervention

for below-average readers, *Reading & Writing Quarterly, 33*(1), 37-53.

https://psycnet.apa.org/doi/10.1080/10573569.2015.1072068

Szabo, S. (2019). Parental involvement: It looks different for middle-school

students. Delta Kappa Gamma Bulletin, 85(3), 42-51.

https://www.dkgnj.org/uploads/2/2/3/1/22313516/2019_jour_85-3.pdf

Tamis-LeMonda, C. S., Luo, R., McFadden, K. E., Bandel, E. T., & Vallotton, C. (2019). Early home learning environment predicts children's 5th grade academic skills. *Applied Developmental Science, 23*(2), 153–169. https://doi-org.ezp.waldenulibrary.org/10.1080/10888691.2017.1345634

Technopedia. (2021). https://www.techopedia.com/dictionary

Tham, J., Duin, A. H., Veeramoothoo, S. C., & Fuglsby, B. J. (2021). Connectivism for writing pedagogy: Strategic networked approaches to promote international collaborations and intercultural learning. *Computers and Composition*, 102643. https://doi.org/10.1016/j.compcom.2021.102643

Thirsk, L. & Clark, A. (2017). Using qualitative research for complex interventions: The contributions of hermeneutics. *International Journal of Qualitative Methods 16*: 1–10ª https://journals.sagepub.com/doi/pdf/10.1177/1609406917721068

Thomas, V., Muls, J., De Backer, F., & Lombaerts, K. (2020). Middle school student and parent perceptions of parental involvement: Unravelling the associations with school achievement and wellbeing. *Educational Studies, 46*(4), 404-421 https://doi.org/10.1080/03055698.2019.1590182

Titelman, P. (1979). Some implications of Ricoeur's conception of hermeneutics for phenomenological psychology. *Duquesne studies in phenomenological psychology*, 3, 182-192. https://psycnet.apa.org/doi/10.1037/1082-989X.6.1.3

Treiman, R. (2018). What research tells us about reading instruction [Review of What

Research Tells Us About Reading Instruction]. *Psychological Science in the Public Interest: A Journal of the American Psychological Society, 19*(1). https://journals.sagepub.com/doi/10.1177/1529100618772272

Turkyilmaz, M. (2015). The relationship between reading attitude, metacognitive awareness of reading strategies, personality and self-regulation: A sStudy of modeling. *Education, 136*(1), 11–18.

Turner, J. D. (2019). Improving black students' college and career readiness through literacy instruction: A Freirean-inspired approach for K-8 classrooms. *Journal of Negro Education, 88*(4). https://www.muse.jhu.edu/article/802570

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (n.d.). 2019 NAEP assessment reading highlights. https://www.nationsreportcard.gov/highlights/reading/2019/

Utecht, J., & Keller, D. (2019). Becoming relevant again: Applying connectivism learning theory to today's classrooms. *Critical Questions in Education, 10*(2), 107–119. (n.d.). https://files.eric.ed.gov/fulltext/EJ1219672.pdf

Vygotsky, L. and Kozulin, A. (1986). *Thought and Language*. (2nd ed.). The Massachusetts Institute of Technology.

Wallace, T. L., & Kuo, E. (2020). Publishing qualitative research in the journal of educational psychology: Synthesizing research perspectives across methodological silos. *Journal of Educational Psychology, 112*(3), 579–583. https://doi-org.ezp.waldenulibrary.org/10.1037/edu0000474

Wang, M.-T., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student

achievement and mental health in high school? *Child Development*, 85, 610–625.

doi:10. 1111/cdev.1215 https://doi.org/10.1111/cdev.12153

Wang, M.-T., Hill, N., & Hofkens, T. (2014). Parental involvement and African

American and European American adolescents' academic, behavioral, and

emotional development in secondary school. *Child Development*, 85, 1–18.

https://doi.org/10.1111/cdev.12284 84

Watson, T. N., & Bogotch, I. (2015). Reframing parent involvement: What should urban

school leaders do differently? *Leadership & Policy in Schools, 14*(3), 257–278.

https://doi-org.ezp.waldenulibrary.org/10.1080/15700763.2015.1024327

Welch, C., & Piekkari, R. (2017). How should we (not) judge the 'quality' of qualitative

research? A re-assessment of current evaluative criteria in International

Business. *Journal of World Business*, *52*(5), 714-725.

ttps://doi.org/10.1016/j.jwb.2017.05.007

Yan, W. (1999). Successful African American students: The role of parental

involvement. Journal of Negro Education, 68(1), 5–22.

https://doi.org/10.2307/2668206

Yavuz, O., Parzych, J., & Generali, M. (2019). A systematic approach to exploring

college and career readiness program needs within high-poverty urban public

schools. *Education and Urban Society, 51*(4), 443–473. https://doi-

org.ezp.waldenulibrary.org/10.1177/0013124517727054

Yin, R. K., (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks,

CA: Sage.

York, B. N., Loeb, S., & Doss, C. (2019). One step at a time: The effects of an early

   literacy text-messaging program for parents of preschoolers. *Journal of Human

   Resources, 54*(3), 537–

   566. https://annenberg.brown.edu/sites/default/files/TBT_Brief_One_Step_at_a_T

   ime.pdf

Ziden, A., Rahman, M., & Ching. T., (2020). Exploring the use

   of mobile instant messaging for parent-teacher communication. *International

   Journal of Interactive Mobile Technologies, 14*(04), 152–165. https://doi-

   org.ezp.waldenulibrary.org/10.3991/ijim.v14i04.12403

Appendix A: Interview Protocol and Questions

The following research questions guided the study:

1. What experiences do parents report in using communication apps as a tool for increasing their connection to the school, other parents, and school engagement efforts to support struggling readers?

2. What changes in student academic progress do parents describe when connecting to the school with communication applications?

Opening Script

Thank you for agreeing to be interviewed as part of this study. This interview should last about 30 to 45 minutes. This study will provide a better understanding of your perspectives as a parent of a struggling reader and how you use your cell phone to engage with the school. This study will be anonymous and confidential.

This interview consists of 12 questions. I sent you the questions via email, and they are in the chat area if you need to reference them. The first 10 questions focus on how you use your cell phone for school communication. The last two questions will request some basic identifying information about you.

Tell me about how you use your cell phone for communication with the school and school personnel.

I am going to name a few cell phone apps used for parent-school communication. After each one, please tell me if you have heard of it, used it, and if you have used it, if you would recommend it. I may ask you for more information about why you use or do not use an app and your reasons for recommending or not recommending it. The apps are

Email (Gmail, Outlook or others), Remind, WhatsApp, GroupMe, Canvas Parent app, and MS Teams. If there are any apps you use for school communication but was not listed, please name them.

How important is your cell phone app for understanding your child's academic progress?

How valuable for you is an app(s) that lets you receive school information that you can use to support your student's reading progress?
(follow ups) Tell me a little more about what kinds of information you would like to receive. If it is not valuable, what would be a better way to receive this information?

How important is your cell app(s) to send the school information that can be used to support your student's reading progress.

Tell me a little more about what kinds of information you would like to send. (If it is not valuable) What would be a better way to send this information?

How useful is your cell phone app(s) for connecting with other parents in your school community?

Tell me how your cell app(s) help you engage with school activities.

If your cell app(s) are not helpful, what would help you get the information you need to participate in school communication about reading supports or other engagement activities?

What kinds of information about your student's reading progress is or would be most helpful for you to receive from the school via your cell phone?

The last two questions will ask for some demographic details to help me understand the information I am learning during our interview.

What category best fits your age: under 20; 20-24; 25-34; 35-44; 45-54; or over 55?

What is your relationship to the student: parent; caregiver; other (please specify)?

Closing Script

Thank you for your participation in this interview session. Your time and perspectives are appreciated. Is there anything this interview did not capture about your experiences that you would like to add? I will now summarize my initial understandings and provide you with your responses so that you can clarify or add to them to help me ensure I have understood your input accurately. If needed, I would like to follow up with you to review your responses. What is your preferred way I may contact you?

Appendix B: Coding Table

Themes	Categories	Codes based on common words and phrases
		benefits of using cell device
		descriptors of Gmail
		duration Gmail use
		family connections to school
		family demographics
		Gmail and emotions
		GroupMe
		ICTs to connect with other parents
		Outlook and emotions
		parent education
		parent used Outlook at work
		parent using social media for school info
		perceptions and uses of cells in general
		perceptions and uses of texting
		perceptions of Gmail
	ICTs used to connect with other parents for academic and general school information	perceptions of Outlook
		reasons why parents like cell apps
		relationship to student, other family
		Remind
	ICTs mitigate barriers such as limited time and forgetting information, work schedule conflicts, and new pandemic challenges exacerbate demands on time and capacity	student needs
1. preference of ICT apps for connecting with other parents		Teams
		time awareness
		uses of Gmail
		uses of Outlook
		WhatsApp
		about reading progress
		age
		Canvas assignments
		parent feelings about school
		parent preferences in general
		parent relational expressions
		perceptions & uses of non cell devices in general &/or school
		perceptions and uses of all other cell apps
2. preference for ICTs apps for school communication	preference for ICTs for school communications because it is real-time or same-day, two-way, actionable, and / or relevant	with school
		share strategies that help their student
		share student's accomplishments
		strategies for use at home

Themes	Categories	Codes based on common words and phrases
		after school academic support
		assignments, all subjects
		assist students
		assist teachers
		attendance: ASPEN, contact school office
		attributes & needs of MS students
		cell communication & academic progress
		cell communication and reading progress
		cell communication parent wants from school
	strong desire to partner with school	cell communication parent wants to tell school
	desire for integrated, comprehensive ICT app approach from the school described uses such as: all academic assignments frequent (e.g. when gap appears or at least weekly) progress monitoring—especially regarding special needs/IEPS	contact specific teacher
		contact teachers, general
		grades
		gratitude
		IEP meeting logistics
		other courses
		other reasons parent contacted school
		parent communication with school about assignments
3. value of two-way communication	teacher communication about behavior, main office information for logistics, and extra-curricular information	parent concerns for overloading teachers
		provide donations to teachers
		school activities
4. desire for accountability in communication	Importance of ICT communication that helps all parties remain in touch and accountable, e.g. process that ensures unanswered communication gets elevated within days so parent can take action.	cell communication to/from school parent wants but doesn't exist
		non cell communication parent wants from school
		non cell perceptions & uses (iPad, laptop)
		teacher accountability
	Discrepant Codes	
		parent cell uses w/ school after student matriculates
		parent stays in contact with prior teachers/school
		siblings attended same school

Note. This table presents the codes I attributed to the interview data, their consolidation into categories, and the resulting themes.