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A QUALITATIVE STUDY OF LITERACY TUTORING IN VIRTUAL ENVIRONMENTS DURING THE COVID-19 PANDEMIC: INSTRUCTIONAL AND RELATIONAL PRACTICES TO SUPPORT LEARNERS WITH DYSLEXIA

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DURING THE COVID-19 PANDEMIC: INSTRUCTIONAL AND RELATIONAL

PRACTICES TO SUPPORT LEARNERS WITH DYSLEXIA

By

MEGAN G. HILLS

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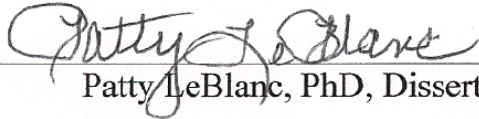
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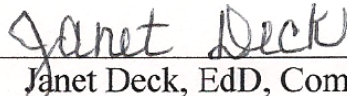
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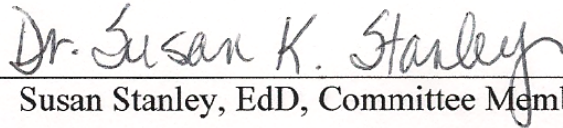
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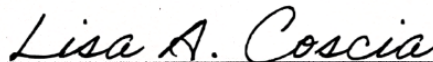
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DEDICATION

I would like to dedicate this work to the Lord. His abounding love has sustained me; He has guided me every step of the way. My heart echoes the words of Lamentations 3:22: "The steadfast love of the Lord never ceases; His mercies never come to an end; they are new every morning; great is Your faithfulness."

I would also like to dedicate this work to my family. My parents were my first and best teachers, and I thank them for their love and support. My sons Christopher, Nathaniel, and Spencer inspired me to dream big dreams and chase after lofty goals. I am thankful to my niece, Bridget, who gave me the gift of time when I most needed it. Finally, I dedicate this work to my beloved husband, Lee. We are truly a team, and I am blessed to have his love and encouragement.

ACKNOWLEDGMENTS

Abstract

This qualitative collective case study examined the relational and professional practices literacy tutors used to support learners with dyslexia in virtual learning environments during the COVID-19 pandemic. Through individual interviews, literacy tutors who rapidly transitioned to online teaching described their lived experiences during this historic time. Three themes were identified through cross-case analysis: adapting instructional practices to virtual environments, caring for students and parents, and reflecting on professional practice. The results of this study described evidence which suggests implications for future practice, including teacher preparation, virtual tutoring, and reflective teaching.

*Keyword*s: dyslexia, literacy, multisensory, teacher-student relationships, tutoring, virtual learning environments

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

The COVID-19 pandemic led to many changes in American society. Schools and businesses closed to slow the spread of the virus. Overnight, parents and caregivers began working online, and children attended school in virtual environments from their homes. Within days, extracurricular school activities were canceled, and daily instruction transitioned to computer-based platforms. Teachers, parents, and school administrators planned and implemented critical strategies and supports to ensure that students with special needs continued to make progress during virtual instruction. Educators realized that struggling readers would be vulnerable to challenges since virtual learning often relies on a student's ability to read and respond to instruction in writing. For learners with dyslexia, the transition to e-learning was especially difficult (Forteza-Forteza et al., 2021; Zawadka et al., 2021). Along with thousands of teachers nationwide, literacy tutors in Oregon rapidly switched to virtual environments to provide specialized, supplemental online tutoring for students with dyslexia.

Researchers have analyzed preliminary data to explore the shift from face-to-face (FtF) instruction to virtual teaching and learning, particularly in the area of literacy. According to Kaffenberger (2021), learning loss was expected to become apparent when children returned to school; most teachers were concerned that many students who fell behind during the pandemic might never recover from the losses. The National Association of School Psychologists (2020) predicted the possibility of learning loss associated with school closures, rapid deployment of

online delivery of instruction, and technical difficulties and likened the loss to the phenomena known as summer slide. Kuhfield et al. (2020) modeled projections for learning loss in literacy and mathematics during the pandemic based on studies of seasonal learning loss and interruptions in learning due to natural disasters; these early models indicated that learning loss due to school closures and virtual education might prove to be substantial and persistent.

Many educators, researchers, and policymakers looked to intensive tutoring as a possible solution for pandemic-related learning loss (Kraft & Goldstein, 2020; Slavin & Steiner, 2020). Johns and Mills (2021) wrote that "a crisis can provide opportunities for new methods to emerge" (p. 21). The unexpected changes to society and education during the COVID-19 pandemic were undoubtedly disruptive. Although teaching in an online environment shares many similarities with teaching in a physical classroom, the transition from FtF teaching and learning to virtual instruction presented both challenges and opportunities for educators and researchers.

Little research exists that explores ways literacy tutors navigated the change to online learning environments and the instructional and relational practices employed by tutors to support learners with dyslexia. This collective case study served to inform literacy leaders and pointed to effective practices for the future, allowing researchers to draw otherwise inaccessible conclusions (Lieberson, 2000). The current case study was designed to explore the relational and instructional practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic.

Diagnosis of Dyslexia

Identification of the inability to read is typically the first step toward remediation. Educators identify learners at-risk for dyslexia using the definition from H.R. 6051-READ Act (2020, Definitions section):

The term "dyslexia" means a condition that is characterized by difficulty with accurate or fluent word recognition and by poor spelling and decoding abilities that typically results from a deficit in one or more processes related to the phonological component of language; is often unrelated to other cognitive abilities and the provision of effective classroom instruction; and may result in problems in reading comprehension and reduced reading experience that may impede the growth of vocabulary and background knowledge.

Children at-risk for dyslexia can frequently be identified at a relatively young age. For example, a family history of dyslexia increases risk by four times (Norton et al., 2015). In addition, early screening for dyslexia can help to identify children's problems in the areas of phonological awareness, rapid automatic naming (RAN), letter-sound association, and phonological memory (Catts et al., 2015). Screening in the early elementary years typically includes oral vocabulary, word recognition, word identification (real and nonsense words), and oral reading fluency (International Dyslexia Association, 2017b).

Reading entails complex linguistic, visual, and attentional processes (Norton et al., 2015). Recent advances in neuroimaging and neurological science help researchers understand the processes of reading through observations conducted during brain studies (Munzer et al., 2020). Neurobiological evidence has also contributed to an understanding of dyslexia and the best practices for educational programming (Shaywitz & Shaywitz, 2020). Emerging research points to commonly observed structural brain differences and functions among prereading children who are at-risk for dyslexia; these differences are believed to be causes rather than correlates or consequences of dyslexia (Al Dahhan et al., 2020; Norton et al., 2015). Furthermore, brain imaging studies revealed that dyslexics' brain activity was similar regardless of their native

language (Kronbichler et al., 2006; Martin et al., 2016; Paulesu et al., 2001; Shaywitz & Shaywitz, 2020). Advances in cognitive neuroscience hold great promise for early diagnosis and intervention for children who struggle to learn to read (Al Dahhan et al., 2020; Norton et al., 2015).

The benefit of early intervention for learners with dyslexia is supported by research related to the neuroplasticity of the human brain (Lebel et al., 2019). Neuroplasticity can be observed as the brain changes and adapts as a result of experience and learning (D'mello & Gabrieli, 2018). Lebel et al. (2019) suggested that interventions should take place when the brain's white matter is under development as neuropathways are reorganized. Norton et al. (2019) recommended effective instruction before readers experience prolonged failure. The question then arises: What types of interventions assist learners who have or who are at risk for dyslexia? Fortunately, a number of studies exist to address this question, and they are discussed in the literature in Chapter 2.

Oregon schools returned to physical classrooms in the fall of 2021 after more than one academic year of disruptive learning and virtual instruction. Many educators and researchers anticipated COVID-19-related learning loss for struggling readers and readers with dyslexia. During COVID-19 lockdowns in Oregon, highly trained literacy tutors continued to conduct supplemental, online tutoring sessions in literacy with students with dyslexia. For many of the tutors and their students, online tutoring was a totally new instructional delivery method. Therefore, a case study of tutors' experiences and the strategies tutors used to meet the academic and relational needs of the students presented a unique opportunity to examine new avenues of assisting learners with dyslexia. The section that follows provides an overview of the theoretical frameworks undergirding the study.

Theoretical Frameworks of the Study

Creswell and Poth (2018) defined interpretive frameworks as the theoretical orientations that guide a study and the beliefs that researchers bring to the process. Clear explication of the theories that guide research provides structure and "a common lens to support one's thinking on the problem and analysis of data" (Grant & Osanloo, 2014, p.15). In addition, beginning a study with a theoretical framework helps guard against bias. The theoretical frameworks that guided the current study were Chall's (1967, 1983) developmental stages of reading and Vygotsky's social constructivism (Vygotsky & Cole, 1978).

Chall's Stages of Reading Development

Jeanne Chall, a developmental psychologist at Harvard University, conducted and supervised seminal research on reading development for more than 50 years. Chall's (1983) research led to the development of a six-stage model of reading acquisition and growth. Chall's six stages (see Table 1) build upon one another in a hierarchical fashion; lack of reading mastery at one stage impedes progress in higher stages (Farrell, 2012). Learners move through the stages of reading at different rates in response to exposure to effective instruction and supportive environments. Chall (1983, 2000) was an enthusiastic proponent of direct (explicit) reading instruction, intensive and early remediation of at-risk and failing readers, and reading instruction based on solid evidence from research.

The second edition of *Stages of Reading Development* (1996) discussed the influence of Chall's research on the development of reading curricula and instruction for typical readers and readers with special needs, including learners with dyslexia. Spear-Swerling and Sternberg (1994) referred to Chall's developmental view of reading in their theoretical model of reading disability and noted the need to describe typical reading development in order to be able to

identify ways children with reading disabilities vary from typical readers. Chall (1983) clearly

articulated her seminal research on reading development, provided a framework for structured

and systematic instruction, and helped instructors to understand atypical reading development.

Table 1

Chall's Stages of Reading Development

Stage	Approximate Age/Grade	Characteristics	Supports for Acquisition of Skills
Stage 0: Prereading	Birth to 6 Years	• "Pretending" to read; retelling familiar stories while looking at a book • Names letters of the alphabet • Recognizes/ "reads" familiar signs (e.g., McDonald's Golden Arches) • Prints own name • Plays with books and writing materials	• Access to books and writing materials in the home • Exposure to rich vocabulary • Pleasant and regular reading experiences • Opportunities to play • Joyful interactions with adults who foster learning (background knowledge)
Stage 1: Initial Reading and Decoding	6-7 Years / 1st & 2nd Grades	• Begin to understand the alphabetic principle and makes sound-symbol connections • Reads simple books with high frequency words and phonetically regular words • "Sounds out" new words using decoding skills	• Direct and explicit phonics instruction with regular opportunities to practice • Decodable books • Read alouds of high interest books to build vocabulary, background knowledge, interest, and to provide strong models of skillful reading.
Stage 2: Confirmation and Fluency	7-8 Years / 2nd & 3rd Grades	• Reads simple, familiar stories • Fluency increases	• Direct instruction in advanced decoding skills • Promotion of fluency through extensive reading of familiar and engaging texts • Reading above independent level to build/develop language comprehension
Stage 3: Reading for Learning the New	8-14 Years / 4th – 8th Grades	• Instruction shifts from learning to read to reading to learn • Read to gain knowledge and to learn new concepts • Reading from one viewpoint (usually)	• Studying informational texts which reflect new ideas and unfamiliar vocabulary and syntax • Systematic word study • Responding to the text in discussion and writing • Making thinking visible through Q & A • Exposure to increasingly complex texts
Stage 4: Multiple Viewpoints	15-18 Years / 9th-12th Grades	• Reading a variety of increasingly complex texts (e.g., expository and narrative) • Reading a variety of viewpoints (compare/contrast)	• Wide reading of texts from a variety of disciplines and areas of interest • Systematic word study (e.g., Greek and Latin roots, affixes)
Stage 5: Construction and Reconstruction	18+ Years / College and Beyond	• Skillful reading for professional and personal purposes • Fluent reading; strong comprehension; reading is rapid & efficient • Intertextuality (Text-to-Text, Text-to-Self, Text-to-World) • Integration and synthesis lead to the development of new knowledge	• Broad reading of increasingly difficult texts • Reading for pleasure, interest, and personal growth • Considering and integrating varied knowledge and points of view to write essays and papers and to take tests

Note. Adapted from *Stages of Reading Development* by J. S. Chall, 1983, McGraw-Hill Book Company. Copyright 1983 by McGraw-Hill.

Social Constructivism

Russian psychologist Lev Vygotsky studied the cognitive and linguistic development of young children (Vygotsky & Cole, 1978; Vygotsky, 1999). Based on his research, Vygotsky wrote and published emerging ideas regarding his theories on the influence and mediation of language and social interaction on the cognitive development of children. Vygotsky held that children's cognitive development depended on interactions with sign systems: oral and printed language, the alphabet, words, reading, speaking, and writing. In other words, language development played a vital role in cognitive development and vice-versa. In addition, language development was critical to reading acquisition and development. Vygotsky maintained that mastery of sign systems was critical to children's mastery of language, text, and thinking. Sign systems connect people to the human community—past, present, and future. Vygotsky further described writing as a mediational tool for thinking; the ability to encode and decode language was a means of conveying thoughts.

The zone of proximal development (see Figure 1) was defined by Vygotsky as the developmental level between the cognitive processes children use to accomplish tasks independently and the cognitive processes that learners have not yet developed in order to accomplish tasks independently (Vygotsky & Cole, 1978). According to Vygotsky, the zone of proximal development is the ideal level at which students can successfully learn with timely support from a more knowledgeable other (MKO) until they are able to complete a task independently.

One of the key tenets of Vygotsky's theory was the importance of a more MKO to influence the learning and development processes by means of greater knowledge, skill, or experience (Vygotsky & Cole, 1978). The MKO might be a teacher, another student, a family

member, a mentor, or a computer program. Vygotsky held that cognitive development progresses

in sequential order and that the MKO's role was to support movement from one level to the next

higher level. Vygotsky proposed that developmental levels were hierarchical and could not be

skipped; however, a well-taught student would be capable of progressing more effectively and

confidently with sufficient support from an MKO.

Figure 1

Vygotsky's Zone of Proximal Development
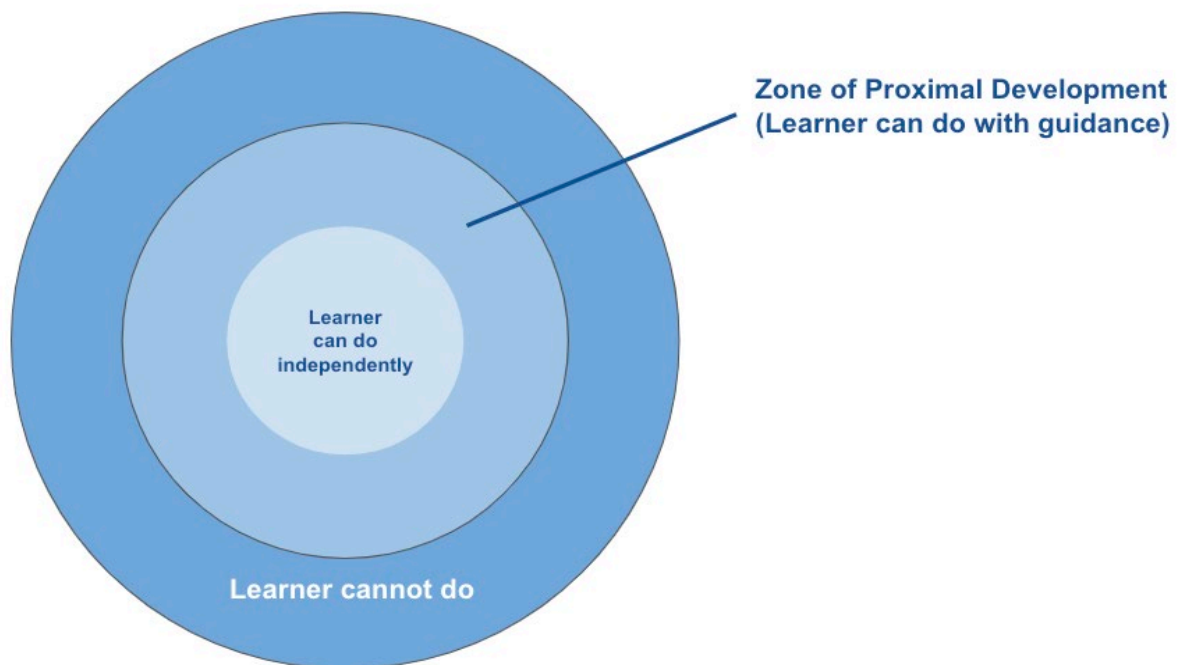
Within Vygotsky's developmental framework, the primary role of an MKO was to

provide scaffolding to learners (Vygotsky & Cole, 1978). Scaffolding might include "clues,

reminders, encouragement, breaking down the problem into steps, providing an example, or

anything that allows the student to grow in independence as a learner" (Slavin, 1997, p. 48).

Scaffolding strategies provide context and building blocks upon which higher levels of thinking

and skill can grow and develop. Expert tutors who provide one-to-one intensive interventions for students with dyslexia closely analyze and monitor student learning and scaffold instruction to meet the specific needs of tutees as emerging readers grow and develop. In these contexts, instructional tutors become de facto MKOs.

According to Kozulin and Gindis (2007), Vygotsky's work with special needs children led him to develop a theory of disontogenesis or distorted development. Vygotsky clearly defined cultural and natural development as the two axes of development and stressed the importance of finding the true source of a perceived disability (Vygotsky & Cole, 1978). Vygotsky fought against a deficit view of learning and development and promoted the recognition of children who "developed differently" with help from MKOs (Vygotsky, 1993, p. 30). Highly trained literacy tutors have recognized that students with dyslexia learn differently, and they strive to implement research-based strategies to support learning for neurodiverse children. Many researchers hold that with appropriate support, all children can learn (Darling-Hammond et al., 2020; Spear-Swerling & Sternberg, 1994; Vygotsky & Cole, 1978).

Chall's (1983) stages of reading development and Vygotsky's learning theories form the theoretical frameworks upon which this study was built (Vygotsky & Cole, 1978; Vygotsky, 1999). Chall's (1983) work on the hierarchies of reading skills and stages is foundational to decades of reading research, development of reading curricula and assessments, and instructional practices. Vygotsky's depiction of the MKO accurately describes the role of an expert literacy tutor who provides individualized instruction, scaffolds learning, monitors progress, and offers immediate feedback. Vygotsky's understanding of the individual needs of learners and the importance of language development informs the current instructional practices of differentiation and the holistic development of diverse learners. New research from neurobiology can extend

educator's knowledge of the brain's interactions during reading. Understanding the stages of reading development and the progress of typically developing readers helps educators understand and pinpoint the difficulties faced by atypical readers and points to the need for specific interventions to facilitate growth.

Purpose Statement

The purpose of this qualitative collective case study was to examine the relational and professional practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. In the current study, professional practices included the literacy tutors' use of teaching strategies, curricula, and instructional planning to advance students' reading achievement. Relational practices refer to practices that express empathy, build trust, and promote students' positive self-image (Frelin, 2013). Within the context of the current study, virtual learning environments (VLEs) were described as the use of online delivery tools for one-to-one, real-time instruction of reading by expert literacy tutors.

Research Question

What instructional and relational practices did literacy tutors implement to support students with dyslexia in virtual environments during the pandemic?

Overview of Methodology

Research Design

The current study was a non-experimental, qualitative, collective case study. This case study was bounded by place and time: supplemental tutoring in reading via a VLE during the COVID-19 pandemic. Cases were analyzed and compared by means of within-case and cross-case analyses (Creswell & Poth, 2018).

Participants

The study included a known group of five literacy tutors from rural Oregon who provided

supplemental, intensive support in reading to learners with dyslexia during the COVID-19

pandemic. The purposeful sample included participants with a minimum of 5 years of teaching

experience who provided one-to-one instruction to learners with dyslexia in virtual environments

from March 2020 until September 2021 during the COVID-19 school closures in Oregon.

Data Collection

After approval by Southeastern University's Institutional Review Board, a non-random,

known group of five literacy tutors was recruited for the study (see Appendix A). After obtaining

informed consent (Appendix B), the researcher scheduled mutually agreeable times for

individual, semi-structured interviews, which were conducted either FtF or virtually (see

Appendix C for the intake form and Appendix D for the interview protocol). The interview

questions addressed the professional and relational strategies the literacy teachers used during

virtual instruction in order to address the research question. The interviews were audio-recorded

for transcription.

Data Analysis

Audio-recordings of the interviews were transcribed and submitted to the participants for

validation. After validation, the researcher conducted multiple readings of the interview data. The

data were subsequently categorized into key words and quotes to examine individual within-

subject themes. The researcher compiled a codebook to examine the common categories and

themes observed within the group of literacy tutors to determine overarching themes identified

by this sample of literacy tutors.

Limitations

Several limitations common to qualitative research constrained this study. The first limitation was related to the composition of the research sample, which was small, non-random, and not generalizable to the wider population of literacy tutors. The second limitation related to the bounded nature of the case study and its snapshot of virtual literacy tutoring among learners with dyslexia. The tutors' methods and strategies during the bounded time of pandemic lockdowns beginning in March 2020 and continuing until September 2021 may not reflect the continued use of those strategies in FtF environments or future virtual environments. Another limitation was related to the nature of human subject research; the researcher must assume that interviewees accurately described their perceptions and recollections of the bounded case. Additionally, the study focused on literacy tutors' perceptions of a specific type of literacy tutoring (i.e., structured literacy). Finally, the researcher's subjective views and experience may have influenced data collection, analyses, and reporting when working with known groups (Merriam & Tisdell, 2009). The researcher made every effort to bracket her ideas to address the research question accurately.

Definition of Key Terms

The following words and phrases are key terms for the study.

- **content area reading:** the ability to read and comprehend information for learning in the content areas (e.g., math, science, social studies, etc.).

- **decoding:** the act of translating written words into vocal or subvocal speech (Henry, 2010).

- **dyslexia:** a specific learning disability that is neurobiological in origin. Dyslexia is characterized by difficulties with accurate and/or fluent word recognition and by poor

spelling and decoding abilities. These difficulties typically arise from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge (International Dyslexia Association, 2002).

- **literacy tutor:** a trained literacy specialist with deep content and pedagogical knowledge who uses research-based curricula and strategies to further students' learning in one-to-one tutoring environments.

- **phonics:** paired associations between letters and sounds; an approach to teaching reading and spelling that emphasizes sound-symbol relationships, especially in early instruction (Birsh, 2011, p. 313).

- **phonological awareness:** the ability to recognize and manipulate the spoken parts of sentences and words (Cowen, 2016).

- **semantics:** the meaning of a word, phrase, sentence, or text.

- **structured literacy:** explicit, systematic teaching that focuses on phonological awareness, word recognition, phonics and decoding, spelling, semantics, and syntax at the sentence and paragraph levels. Structured literacy is systematic and explicit, cumulative, and diagnostic (Cowen, 2016).

- **syntax:** the set of principles that dictate the sequence and function of words in a sentence to convey meaning. These principles include grammar, sentence variation, and the mechanics of language (Cowen, 2016).

- **synthetic phonics:** a part-to-whole approach; explicitly converting letters into sounds

(phonemes) and then blending the sounds to form recognizable words (National Reading Panel, 2000).

- **virtual learning environments:** online spaces (e.g., Zoom, Google Meet) utilized for teaching and learning in real time.

- **whole language instruction:** an approach to reading and writing instruction that emphasizes recognizing whole words within the context of meaningful, authentic texts without systematic, phonics-based reading instruction.

- **word recognition:** the swift identification of a previously learned word and its meaning (Henry, 2010).

Significance of the Study

The current case study adds to the body of literature on effective practices for one-to-one literacy tutoring for students with dyslexia in virtual environments. Examining the work of tutors during this unique period in history provided valuable insight into effective strategies and modalities for meeting the needs of struggling readers and readers with dyslexia through virtual tutoring.

II. REVIEW OF LITERATURE

The purpose of this qualitative collective case study was to examine the instructional and relational practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. The literature review describes recent studies of evidence-based instructional and relational practices that support reading development among learners who struggle to read.

Many of the instructional and relational practices found in recent literature were directly influenced by Vygotsky, an early theorist and advocate for differentiated learning (Vygotsky & Cole, 1978; Vygotsky et al., 1993). Vygotsky founded the Experimental Institute for Special Education in Moscow in 1929 for the purpose of studying children from "a unified clinical, psychological, and pedagogical perspective" (Vygodskaya, 1999, p. 331). According to Vygotsky, teaching must be modified for atypical learners; the learning goal is the same, but the pace, means, and methods of teaching and learning may be different. Vygotsky (1993) advocated for special learners based on children's potential to meet learning needs, whether in whole class, small group, or one-to-one instruction. As a researcher, Vygotsky supported the need for research-based tools, specialized methods, and expert instruction delivered by specially trained teachers (Kozulin & Gindis, 2007). When working with learners with special needs, the importance of highly trained teachers who knowledgeably and strategically select strategies and employ learning materials tailored to the specific needs of each learner is paramount. These

expert teachers must demonstrate the requisite skills necessary to support the internalization of learning and the transfer of learning to other contexts. Vygotsky's (1993) emphasis on instructional practices and the effective development of learners with special needs paved the way for modern special education.

<div align="center">**Instructional Practices**</div>

Most schools in the United States have implemented a response to intervention framework as a multitiered, systematic plan to provide academic and behavioral supports for all learners (Shaywitz & Shaywitz, 2020). Tier 1 support refers to regular classroom instruction using district-approved, general curricula. Tier 2 support entails differentiated, small-group instruction for students who do not make adequate progress during regular classroom instruction. Tier 3 support requires the use of intensive, individualized interventions for students who do not demonstrate improved achievement with Tier 2 interventions over time (Dexter & Hughes, n.d.) Unfortunately, many teachers and paraeducators lack the necessary training and skills to implement evidence-based strategies for teaching reading within the response to intervention framework (Al Otaiba et al., 2019; Balu et al., 2015). Expert reading instruction relies on effective and experienced teachers who implement evidence-based strategies that have been thoroughly researched and validated (Wijekumar et al., 2019). The sections that follow summarize relevant research on widely used instructional and relational practices that have been supported by recent research evidence.

Structured Literacy Instruction

Hollis Scarborough (2001) created a visual analogy for skilled reading by illustrating many strands in a reading rope. The lower strands represent the elements of word recognition: phonological awareness, decoding, and sight word recognition. The lower strands work together

as learners develop more accurate, automatic, and fluent reading skills. The upper strands of the reading rope represent elements of language comprehension: background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge. Over time, the strands weave together a rope that describes a skilled reader. Scarborough defined skilled reading as fluent execution and coordination of word recognition and text comprehension. However, many children and adults struggle to acquire the basic skills needed to read; they require explicit, systematic, cumulative, and multisensory reading instruction (Johnston, 2019). Scarborough (2001) clearly called for a structural approach to reading instruction.

Structured literacy is an evidence-based approach to teaching reading to all learners through explicit skill instruction in phonology, decoding, and spelling using decodable texts (Spear-Swerling, 2019). Reading skills are taught in a logical order, with important prerequisite skills taught first. Cumulative practice and ongoing review ensure that students retain skills and develop automaticity. In structured literacy approaches to reading, students and teachers have high degrees of interaction as teachers provide direct instruction, immediate feedback, and clear correction. Additionally, structured literacy teachers utilize multisensory strategies to include visual, auditory, tactile, and kinesthetic activities that activate different areas of the brain (Johnston, 2019). The International Dyslexia Association (2017a) and the National Reading Panel (2000) have recommended structured literacy practices for struggling readers and students with dyslexia.

Systematic and Cumulative Phonics Instruction

Phonics instruction is an evidence-based practice that provides the foundation for reading development, especially among early learners. A literate individual decodes writing; derives meaning from the text; considers the ideas proposed and inspired by the written word; and makes

text-to-self, text-to-text, and text-to-world connections. To enable the progression from symbols to ideas, reading instructors must empower students to move from "cracking the alphabetic code" to understanding and engaging with the text (Castles et al., 2018, p. 8). Systematic phonics instruction follows a scope and sequence so that concepts build upon one another as students come to understand the elements of literacy and the ways the elements fit together to form a whole (Moats, 2019). Prerequisite skills are typically mastered before advanced skills are introduced (Spear-Swerling et al., 2019). "When skillfully implemented, systematic code instruction is most effective for problem readers" (Moats, 1994).

Taylor et al. (2017) conducted an experimental study of 24 English-speaking adults ($n = 21$ females, $n = 3$ males) to determine the behavioral and neurological differences during two methods of reading instruction: print-to-sound (phonologically mediated pathway or O-P) and print-to-meaning (direct pathway or O-S). The subjects ranged in age from 18-30 years, were right-handed, and worked at or attended Royal Holloway, University of London. None of the participants had hearing or vision problems or learning disabilities. The researchers investigated the learners' behavior related to two types of reading instruction: systematic, phonics-based instruction and whole-word reading instruction. The researchers employed artificial languages to create a novel learning experience designed to replicate the process of learning to read an alphabetic language. Artificial languages were created to mimic transparent orthographies since sound-symbol correspondence is highly regular in transparent orthographies; therefore, texts are easily decodable, and spelling is logical (Borleffs et al., 2019). Over a period of 2 weeks, the subjects learned to read two sets of novel words written in unfamiliar symbols using the two methods of instruction. One training method focused heavily on print-to-sound (O-P; phonics-based); the other training method emphasized the association of print-to-meaning (O-S;

semantics-based). Oral reading and comprehension assessments were administered to all participants to measure reading performance. In addition, functional magnetic resonance imaging data were collected to provide neurological information. To measure reading performance, the researchers asked participants to read familiar and unfamiliar items aloud, say the meaning of words, and identify whether or not a selection of trained and untrained items were familiar to determine whether whole-word forms were recognizable. The two artificial languages were presented separately; each training method utilized a unique language.

Taylor et al. (2017) conducted analyses of variance (ANOVA) to compare the participants' accuracy and response times during each of the training sessions. The results of the experiments revealed that, overall, response times were significantly faster and more accurate after phonics-based training ($p < .001$) than whole-word training. The phonics training method facilitated the adults' ability to read aloud both trained and untrained items. The whole-word training benefited the discrimination of trained versus untrained items and the ability to state word meaning, although the differences in performance were not significant.

Taylor et al. (2017) also observed neurological differences during brain imaging. Data from brain scans helped the researchers understand the brain mechanisms related to the two methods of instruction. Scans were conducted at the mid-point and end of the training sessions. Participants read aloud 24 trained and untrained items from each language set while their neural activity was measured. During the first functional magnetic resonance imaging scan, participants demonstrated specific patterns of brain activity when reading aloud after training in the systematic phonics-focused method (print to sound). Different patterns of brain activity were observed among the readers who were training using the whole language method (print to meaning/saying meaning). These results pointed to distinct neural pathways when the adult

participants learned sound and meaning associations for novel words. During brain imaging, the researchers also observed similar brain activation patterns for the artificial words and English words, thus identifying language pathways in both artificial and real word applications. When the participants completed training that focused on semantics in the artificial languages, which emphasized whole-word reading for meaning rather than phonics, the subjects' behavior revealed that greater effort was required when asked to read aloud. Although brain scan activity differed during the oral reading tasks based on the training methods, the results suggested that brain activity during training methods was not different when the tasks required participants to name the meanings of words.

Taylor et al. (2017) concluded that brain imaging confirmed the efficacy of systematic phonics-based instruction compared to semantics-based instruction ($p < .001$). The benefits of print-to-sound training of artificial languages among adults were evident: faster, more accurate word reading, faster reading of untrained words, and more accurate comprehension of unfamiliar written words. The brain imaging results increased the researchers' confidence in the use of artificial language studies to understand the cognitive, language, and neural systems involved in language learning and reading. The researchers concluded that phonics-based, systematic instruction enabled adult learners to quickly understand sound-symbol relationships necessary for reading aloud and comprehension.

Levlin and von Mentzer (2020) conducted a quasi-experimental study of 49 primary-age children in Sweden to examine the use of systematized phonics instruction on the word reading skills of struggling readers. Swedish schools required a focus on the alphabet, phoneme-grapheme correspondence, decoding, and comprehension strategies in early literacy instruction; however, no specific system or guidelines designated a sequence or strategies for instruction for

struggling readers. The students were selected for inclusion in the study based on word reading and reading comprehension assessments conducted at the end of Grade 1 or the beginning of Grade 2. The children ranged in age from 7.6 to 9.3 years. The researchers divided the participants into ability groups (i.e., severe, moderate, or mild word reading difficulty) based on percentile scores from pseudoword and sight-reading tasks. For the quasi-experimental design study, the children in each ability group were assigned to one of two groups. During the first intervention period, Group 2 received regular classroom instruction. In addition to regular classroom instruction, children in Group 1 (experimental group) participated in individualized, systematic phonics instruction 30 minutes a day for 6 weeks (a total of 15 hours of instruction). The reading intervention consisted of instruction on phoneme-grapheme correspondence, word recognition, and phonemic awareness. Concepts built upon one another and were addressed in developmental order. A fourth component, on-level text reading, was added after the third week of the intervention based on the teachers' evaluations of reading readiness. An engaging, game-based curriculum was conducted with fidelity by trained specialists.

Levlin and von Mentzer (2020) collected reading data at three points during the study: initial (T1), mid-point (T2), and end of the study (T3). Letter naming and phonemic awareness were assessed at T1; pseudoword reading and sight word reading were assessed at T1, T2, and T3. ANOVA tests were used to determine whether significant differences existed within and between groups after the experimental intervention. Pretest and posttest reading scores were compared for individual subjects (within subjects), and the experimental and control groups were also compared (between groups). No significant differences were observed between the experimental and control groups at the beginning of the study (i.e., T1), which indicated that the groups were similar prior to the intervention. After receiving systematic phonics instruction

22

during the first intervention period, the mid-point (i.e., T2) pretest and posttest scores of Group 1 and Group 2 were significantly different on the variables of pseudoword reading (*p* < .001) and sight word reading (*p* < .001). The researchers concluded that individualized, systematic phonics instruction led to gains for the experimental group (Group 1) during the intervention period. Comparable results were found when the control group (Group 2) participated in the experimental treatment between T2 and T3.

Levin and von Mentzer (2020) concluded that intensive, one-to-one systematic phonics-based interventions were effective in promoting reading development among young struggling readers. However, the researchers noted several limitations of the study. For example, the transfer of learning, particularly the transfer of pseudoword reading to real word reading, was not measured. The researchers recommended further studies to determine long-term improvements in word reading.

Explicit Instruction

During explicit reading instruction, key skills are "directly taught, modeled, and clearly explained by the teacher" (Spear-Swerling, 2022, p. 4). Although explicit instruction of alphabetic coding skills supports all early readers (Chall, 1967), direct instruction is especially critical for struggling readers and readers with dyslexia (Shankweiler & Fowler, 2004; Snow and Juel, 2005; Vaughn & Fletcher, 2021). Students who struggle with reading and spelling typically need explicit instruction in language structures; therefore, literacy instructors must have deep content knowledge of spoken and written language and the knowledge, skills, and dispositions needed to deliver effective instruction (Foorman et al., 2016; Moats, 1994).

According to Spear-Swerling (2022), practitioners of explicit instruction explain concepts clearly through direct instruction. Instructional routines are established and followed, and

students are involved in frequent, guided practice. Complex skills are broken into component parts to avoid cognitive overload and to ensure mastery. Once mastered, the components of decoding and comprehension are synthesized into a whole. In addition, teachers conduct frequent, cumulative reviews to support the retention and synthesis of learning (Spear-Swerling, 2022). The instructor monitors the student's application of new concepts and provides immediate feedback and correction (Archer & Hughes, 2011; Odegard, 2020). According to Odegard (2020), the instructor's goal is to maximize error-free practice. Explicit instruction demands a high level of student-teacher interaction (Spear-Swerling, 2022). A number of studies have demonstrated that explicit teaching practices help support learning for struggling readers (Ehri & Flugman, 2017; Ehri et al., 2001; The National Reading Panel, 2000).

Ryder et al. (2007) conducted a quantitative study of struggling early readers in New Zealand to determine whether explicit instruction in phonemic awareness and phonics was an effective intervention for children who struggled to read because reading instruction was strictly regulated in New Zealand. From teacher preparation to curriculum selection to professional development, uniformity of reading instruction based on whole language principles was mandated. The researchers confirmed the constructivist practices employed by classroom teachers during the intervention through interviews and teacher observations. During regular classroom instruction, struggling readers were encouraged to self-correct and prompted to reread sentences and search for clues to the meaning of words in the context of the text or illustrations as well as visual information or syntax (a three-cueing system). "Sounding out" of words was not encouraged. The researchers believed that New Zealand's uniform commitment to whole language instruction would provide an excellent sample of readers for whom explicit phonemic awareness and phonics instruction would be a unique experience for the treatment group.

Ryder et al. (2007) selected a sample of convenience consisting of 24 six- and seven-year-old students in the second year of elementary school. The children had been placed in the lowest level reading groups by their classroom teachers and were selected to participate in the study based on low scores on the Burt Word Reading Test, New Zealand Revision (Gilmore et al., 1981, as cited in Ryder et al., 2007). Throughout the intervention period, all the subjects participated in whole language reading instruction delivered by teachers in the general education classroom. The researchers randomly assigned 12 closely matched pairs to treatment and control groups. The intensive intervention consisted of 56 sequential, explicit lessons delivered in small groups (3:1) to the experimental group by a trained instructor over a 24-week period. The intervention was conducted by a teacher's aide (TA) who was trained in delivering phonics and phonemic awareness instruction to struggling readers. The TA learned to pronounce sounds correctly and to deliver the semi-scripted lessons exactly as written. The TA met regularly with the school's resource teacher of literacy (RTLit) to review the intervention material, prepare for instruction, and discuss any problems the children might have. Close monitoring by the RTLit ensured fidelity of delivery of the intervention. Each structured reading lesson consisted of a review of prior learning (1-2 minutes), phonemic awareness exercises (5 minutes), a letter-sound correspondence lesson (10-15 minutes), guided practice (5 minutes), and reading of decodable texts (after the 28th lesson). The children read decodable books independently at least twice between lessons. Phoneme-grapheme correspondence was introduced in a fixed order across the lessons. The control group received whole language-based instruction in the regular classroom.

Ryder et al. (2007) administered reading assessments to both the control and experimental groups prior to the intervention and immediately following the intervention period. Phoneme segmentation, phoneme blending, phoneme deletion, and phoneme substitution were

measured using the Phonological Awareness Test (Robertson & Salter, 1997, as cited in Ryder 2007). Phonological decoding was measured using a pseudoword decoding task from Richardson and DiBenedetto's (1985, as cited in Ryder, 2007) Decoding Skills Test. Accuracy and comprehension were measured using subtests of the Neale Analysis of Reading Ability, revised (Neale, 1988, as cited in Ryder, 2007), which required the children to read increasingly difficult passages with accuracy and to answer comprehension questions. After the intervention period, the researchers measured context-free word recognition skills among the control and treatment groups using the Burt Word Reading Test, New Zealand revision (Gilmore et al., 1981, as cited in Ryder, 2007). The context-free word recognition test assessed the reader's ability to identify an individual word without additional cues, which allowed the researchers to measure each reader's proficiency in the application of decoding skills.

Ryder et al. (2007) conducted ANOVA tests to analyze the reading assessment data. The comparisons were based on the type of group (experimental or control) by time of assessment (pretest/posttest). The results of the analyses revealed that the intervention group outperformed the control group in every area measured. Statistically significant differences in effect sizes were noted in the following areas: phonemic awareness ($p < .001$), pseudoword decoding ($p < .001$), and word reading ($p < .001$). The posttest mean of the intervention group was higher than the control group's mean posttest score on the comprehension test, but the effect size was not statistically significant ($p = .073$). The researchers concluded that phonemic awareness, phonics, and fluency enabled these struggling readers to improve reading comprehension. However, the use of ANOVA tests to compare the reading scores of the two groups may be suspect since the sample size included only 12 pairs of students; normally, ANOVA requires larger sample sizes.

Ryder et al. (2007) questioned whether the initial benefits of the intervention would influence future reading achievement. Would the skills gained as early readers enable the struggling readers to continue to grow? Would there be a difference between the two groups over time? To address these questions, Ryder et al. (2007) assessed 10 of the 12 matched pairs 2 years after the intervention using word reading and accuracy tests. In a small follow-up study, the students who had been in the intervention group demonstrated significant differences in word reading and accuracy when compared to the control group ($p = .05$) 2 years after the initial intervention. Although this study presents important evidence of the efficacy of explicit instruction in phonics, more research with larger samples is needed to replicate and confirm the results.

Multisensory Instruction

Samuel Torrey Orton's (1937) research led to a greater understanding of the neurology of language acquisition and the need for comprehensive support for children with dyslexia within a clinical setting. Based on Orton's research, Anna Gillingham designed a systematic program of instruction, the Orton-Gillingham method (O-G), which incorporated Orton's requirements for remedial instruction: direct instruction, systematic, synthetic phonics instruction, and multisensory engagement (Gillingham & Stillman, 1997).

The International Dyslexia Association (2020) identified multisensory approaches as important components of effective teaching for children with dyslexia. Multisensory instruction refers to strategies that "guide students in simultaneously linking input from eye, ear, voice and hand to bolster learning during carefully sequenced teaching of all systems of language" (Birsh & Carreker, 2018, p. 47). According to Birsh (2011), multisensory instruction engages all neuropathways to the brain as a means to enhance learning: visual, auditory, kinesthetic, and

tactile. For example, in a spelling lesson, a student sees the word (visual), says the word (auditory), builds the word using tiles (kinesthetic), and traces the word on sandpaper (tactile) while repeating the letter names (auditory). Touch and movement combine with visual and auditory modalities to activate sensorimotor pathways, establish circuits for word recognition, and facilitate conceptual learning (Ferrell & Sherman, 2011; Moats & Ferrell, 2005). Multisensory strategies frequently include multimodal learning opportunities and the use of manipulatives (Birsh, 2011).

According to Moats and Ferrell (2005), cognitive and neurological research studies provide theoretical support for multisensory instruction. In addition, memory research supports the use of multisensory instructional practices considering working memory is multisensory (Mousavi et al., 1995; Quak et al., 2015; Sousa, 2014). Although many successful structured literacy programs incorporate multisensory learning, more research is needed to offer scientific support for the specific use of multisensory strategies for reading development among at-risk readers and those who struggle to read (Birsh & Carreker, 2018).

Giess et al. (2012) conducted a quasi-experimental, pre-post-intervention study of nine adolescents with specific learning disabilities to determine the effectiveness of an intervention using Orton-Gillingham methods to improve the reading skills of adolescents with persistent reading difficulties. Although the small sample size ($N = 9$) was acknowledged as a limitation of the study, the researchers theorized that gains could be made in this population through multisensory interventions. Nine students in Grades 10 and 11 in a Florida charter school were selected as participants in the study; each student demonstrated persistent reading problems. The criteria for selection included identification of below-average ability on at least two basic reading skills subtests from the Woodcock-Johnson III Tests of Achievement (W-J III ACH; Woodcock et

al., 2007, as cited in Giess et al., 2012). The researchers administered the W-J III ACH and the

Test of Word Reading Efficiency (TOWRE; Torgesen et al., 1999, as cited in Giess et al., 2012)

to measure reading achievement pre and post intervention.

Giess et al. (2012) used the Barton Reading and Spelling System (BRSS; Barton, 1998,

as cited in Giess et al., 2012), an Orton-Gillingham influenced program, as an instructional

method during the intervention. Multisensory practices incorporated in Giess et al.'s (2012)

intervention included simultaneous engagement of multiple senses. Some examples included

tapping out vowel sounds (kinesthetic) with key words while saying sounds and words

(auditory); touching letter tiles (tactile, visual); saying sounds (verbal); finger spelling

(kinesthetic) while saying sounds (verbal); visualizing graphemes while spelling (visual); and

using gestures (kinesthetic) while saying and reading words (auditory, visual). The BRSS follows

a systematic, sequential program that is divided into 10 levels (Table 2). Following the BRSS

protocols for older students, the participants were pretested to determine the appropriate starting

level (Level 1 or 2) for each learner. The BRSS system involved bi-weekly, hour-long,

individualized tutoring sessions. Each participant in the study successfully completed the

program's 10 systematic, sequential levels.

Table 2

Barton Reading and Spelling System Levels

Barton level	Content focus
Level 1	Phonemic awareness
Level 2	Consonants and short vowel sounds
Level 3	Closed and unit syllables
Level 4	Multisyllable words
Level 5	Prefixes and suffixes
Level 6	Six reasons for silent e
Level 7	Vowel-r's
Level 8	Advanced vowel teams
Level 9	The influence of foreign languages
Level 10	Latin roots and Greek combining forms

Adapted from *The Barton Reading and Spelling System*, created by S. M. Barton, 1998.

Selecting, training, and observing tutors were important elements of Giess et al.'s (2012) research study. The BRSS must be delivered by trained instructors who pass a tutor screening and demonstrate phonological awareness. Six graduate students from a local university were selected to train as tutors for the one-to-one reading intervention. Tutor training consisted of nine training sessions using BRSS training materials. In addition to the 27 hours of specialized training, tutors were able to review training videos as needed. During the course of the intervention, a team of trained assistants attended tutoring sessions to observe the volunteer tutors and to confirm fidelity to the BRSS protocols.

Giess et al. (2012) compared pretest to posttest gain scores of the nine adolescents who participated in the multisensory intervention. The results of the study revealed mean score gains from pretest to posttest in each of the targeted reading areas. Although every student did not demonstrate gains in every subtest, improvement was noted for word attack skills, letter-word identification, and spelling. Table 3 depicts the results of the effect size comparisons.

Giess et al. (2012) concluded that the implementation of an Orton-Gillingham-based intervention and multisensory practices encouraged the development of reading skills among nine adolescent readers, especially in spelling, word attack, and sound awareness. The high school students in this study had exhibited persistent reading difficulties over many years. The researchers acknowledged that small gains were important when working with older learners. The researchers also suggested that literacy tutors must consider the best practices for supporting older learners who have experienced failure in the past. According to the authors, multimodal engagement in phonics instruction led to gains in important areas of reading. However, more research is needed to replicate this study with larger sample sizes and control groups to validate the results.

Table 3

Effect Size of Pretest to Posttest Gain Score Differences by Reading Area

Reading Area	Effect size (Cohen's *d*)
Tests of achievement	
Letter-word ID	.19
Spelling	.53
Word attack	1.06
Sound awareness	.54
Test of word reading efficiency	
Sight word efficiency	.34
Phonemic decoding efficiency	.22

Note. Adapted from "Effects of Multisensory Phonics-based Training on the Word Recognition and Spelling Skills of Adolescents with Reading Disabilities" by S. A. Giess, K. O. Rivers, K. Kennedy, and L. J. Lombardino, 2012, *International Journal of Special Education*, *27*(1), p. 66 (https://eric.ed.gov/?id=EJ979713).

Magpuri-Lavell et al. (2014) conducted a quasi-experimental, pretest-posttest study of 39 elementary students to determine whether a multisensory reading intervention improved reading proficiency for elementary school students identified as at risk of reading failure. Thirty-nine participants who scored below 25% on the Fundamental Literacy Index sections of the Word Identification Test, Elementary Version (WIST; Wilson & Felton, 2004, as cited in Magpuri-Lavell et al., 2014) participated in the study. The students ranged in age from 7-11 years; 22 males and 17 females were selected to participate in the study. In addition, the students' low socioeconomic status was confirmed through school demographic data. The same sections of the WIST were used as pretest and posttest assessments of sound-symbol relationships, word reading accuracy, and automaticity. The students read passages from a standard reading curriculum for the assessment of fluency. The 39 students were divided into four groups by age for the intervention.

Magpuri-Lavell et al. (2014) implemented the Simultaneous Multisensory Institute for Language Arts Approach (SMILA), an Orton-Gillingham-inspired multisensory program that engages tactile/kinesthetic, visual, and auditory modalities for learning language concepts. Content for the intervention included explicit phonics instruction, syllable types, word and sentence reading, and written discourse. The SMILA instructors participated in 60 hours of intensive training in daily 3-hour sessions over the course of 3 weeks. Training included lectures, observations, planning, and practice. Each of the four expert instructors selected to implement the intervention had more than 10 years of SMILA teaching experience. The students participated in 60 hours of multisensory reading instruction for 3 hours each day for 4 weeks during the intervention.

After the 60-hour intervention, Magpuri-Lavell et al. (2014) compared the pretest and posttest reading scores of the struggling readers using the multiple analyses of variance test. The results of the analyses revealed statistically significant differences between pretest and posttest scores in overall word reading ($p = .002$) and regular word identification ($p = .001$). Significant differences between pretest and posttest scores were found on the regular spelling assessment ($p = .018$) but not in pseudoword spelling. Scores on the sound-symbol assessment revealed significant differences ($p < .001$) from the pretest to the posttest. No significant differences were observed between pretest and posttest scores after comparing the participants' ability to read artificial words. This result was somewhat surprising because the ability to transfer knowledge of sound-symbol relationships to the oral reading of nonsense words would logically demonstrate mastery of phonics and the ability to blend sounds into words. Finally, reading fluency data were analyzed using a *t* test to compare pretest and posttest mean scores; significant differences were observed ($p < .01$).

Magpuri-Lavell et al. (2014) concluded that the foundational skills of phonemic awareness and phonics supported reading automaticity and fluency among this sample of elementary students who struggled in reading, and that multisensory instruction within an explicit phonics-based intervention positively influenced the students' ability to identify words and to read fluently. These results were especially valuable when considering the socioeconomic status and ages of the students and their pretest reading scores in the lowest quartile of their grade levels. The results suggested that when highly trained tutors used multisensory reading instruction to support struggling readers, significant reading gains were observed in as little as 4 weeks of daily, individualized reading instruction. Although 3 hours a day of one-on-one reading instruction by a trained tutor is not necessarily feasible during a regular school day, the study

does point to the effectiveness of multisensory instruction and the amount of time needed to see changes in reading achievement among struggling readers.

Bøg et al. (2021) conducted a randomized, controlled study of 101 Swedish kindergarten and first-grade students to determine the influence of a multisensory phonics-based tutoring program on literacy skills and attitudes toward reading and the cost-effectiveness of the intervention. The students participating in the study were identified by teachers as at-risk for reading failure, and school demographic data confirmed that the students came from disadvantaged backgrounds. The design of the study included a control group consisting of a waiting list, which ensured that no student would be denied treatment while allowing the researchers to conduct an experimental study. The researchers randomly assigned students to either the treatment or control group and then matched pairs or triads within the two groups. The researchers employed standardized tests of decoding skills (LäST; Elwér et al., 2016, as cited in Bøg et al., 2021) and letter recognition (LäsEttan; Johansson, 2009, as cited in Bøg et al., 2021), as well as a test of phonological awareness developed by Isakkson. Self-efficacy, enjoyment, and motivation were measured through a survey that required the students to answer three simple questions using a visual analog scale (i.e., facial expression emojis). Each student in the study took the surveys and reading assessments before random group assignment after the treatment group completed the intervention and once again after the control/waiting list group completed the intervention. The experimental intervention consisted of one-to-one or two-to-one multisensory reading instruction by a tutor in 30-35 sessions of 10 to 15 minutes over a period of 8 to 10 weeks (approximately 5 hours total of instruction). The students' visual, auditory, kinesthetic, and tactile modalities were simultaneously engaged in various combinations during the multisensory tutoring sessions. Student reading scores were recorded, and students were

shown their progress to encourage students' motivation to learn. Participants of both groups were also engaged in typical classroom instruction during the intervention period; only the treatment group received the additional intervention. In Swedish schools, regular classroom reading instruction in kindergarten and first grade included alphabetic knowledge, letter-sound correspondence, and handwriting. The intentional use of multisensory practices distinguished the intervention from general classroom instruction.

Bøg et al. (2021) compared the experimental and control groups' posttest reading scores after the first intervention. Statistically significant differences between the means of the two groups were observed in multiple areas of reading: decoding ($p < .001$), phonological awareness ($p < .001$), and self-efficacy ($p < .001$). However, the survey results of the students' reading enjoyment ($p = .623$) and motivation to read ($p = .374$) were not statistically different. Follow-up assessments yielded interesting information; the first treatment group continued to improve in reading, indicating enduring benefits from tutoring and multisensory training. The young, disadvantaged, at-risk readers in this study benefitted from tutoring and multimodal instruction in reading skills. The brief 10–15-minute sessions for 30-35 days can easily be incorporated into a school day, making the results of the study imminently practical. This study provided important evidence of the effectiveness of multisensory instruction when combined with effective tutoring to supplement regular classroom instruction.

Intensive Intervention by Tutors

Baker and Zigmond (1990) questioned whether regular education classrooms were equipped to accommodate students with learning disabilities and concluded that students with learning disabilities were not likely to receive appropriate, intensive interventions and ongoing support even with strong general education instruction. Three decades later, researchers continue

to draw the same conclusions (Christodoulou et al., 2017; Elbaum et al., 2000; Vaughn & Wanzek, 2014). In 2020, the National Center for Education Statistics reported that 72.2 % of American students with specific learning disabilities spent 80% or more of the school day in general education classrooms. According to Fuchs et al. (2014), increasing instructional time and decreasing the student-teacher ratio increases the intensity of an intervention. One-to-one instruction provided by a skilled adult is one of the most effective strategies for improving achievement for readers who struggle (Elbaum et al., 2000; Gersten et al., 2020; Slavin et al., 2011; Slavin & Steiner, 2020; Vaughn & Wanzek, 2014). According to Slavin et al. (2011), intensive, specialized instruction provided by highly trained instructors is the "gold standard intervention" (p. 6).

Wheldall et al. (2017) conducted a quantitative study of 194 students whose mean age was 6 years 9 months to determine the efficacy of an intensive reading intervention for improving reading skills for young, struggling readers. Earlier studies suggested the MiniLit Early Literacy Intervention Program (MultiLit, 2011, as cited in Wheldall et al., 2017) effectively supported readers (Buckingham et al., 2012, 2014; Reynolds et al., 2010), but the limitation of small sample sizes of the previous studies led the researchers to conduct a larger study over a longer period of time. The 15-week intervention in Wheldall et al.'s (2017) study included 60 total hours of reading instruction: 1 hour of instruction on 4 school days each week. The program was delivered by trained instructors across two sites in Sydney, New South Wales, to 14 successive cohorts over a 2-year period. Multiple instruments were administered by the researchers to measure students' achievement preintervention and postintervention, including the Burt Word Reading Test (Gilmore et al., 1981, as cited in Wheldall et al., 2017), the South-Australian Spelling Test (Westwood, 2005, as cited in Wheldall et al., 2017), the Sutherland

Phonological Awareness Test (SPAT-R; Neilson, 2003b, as cited in Wheldall et al., 2017), the

Astronaut Invented Spelling Test (Neilson, 2003a, as cited in Wheldall et al., 2017), the Wheldall

Assessment of Reading Lists (Wheldall et al., 2015, as cited in Wheldall et al., 2017), and the

Martin and Pratt Nonword Test (Martin & Pratt, 2001, as cited in Wheldall et al., 2017). These

instruments were designed to measure phonological awareness, reading, and spelling. To analyze

the results of the intervention, the researchers conducted t tests to compare pretest and posttest

gains on each assessment instrument. The results are depicted in Table 4.

Table 4

Pre/Post Comparisons of Readers' Scores After MiniLit Intervention

Assessment	Sample size	*t*	*p*
Burt Word Reading Test-Single word recognition	186	22.03	< .0005
South-Australian Spelling Test	194	21.73	< .0005
Sutherland Phonological Awareness Test	185	19.81	< .0005
Astronaut Invented Spelling Test	123	11.84	< .0005
Wheldall Assessment of Reading Lists (timed reading of age-appropriate word lists)	163	16.61	< .0005
Martin and Pratt Nonword Test	63	10.36	< .0005

Note: adapted from Wheldall et al. (2017).

Wheldall et al. (2017) concluded that the young, struggling readers in this study

demonstrated significant differences in reading skill development after 60 hours of intensive

reading intervention. On average, the students demonstrated significant progress in each reading

area measured. These results point to the efficacy of intensive, one-on-one tutoring sessions for

young readers who do not demonstrate adequate progress during regular classroom instruction.

In addition, the results suggested that early intervention might assist struggling readers before

they fall behind their age and grade peers, and before motivation to read is reduced. However,

the researchers did not examine the long-term maintenance of student gains over time, a rich area

for future investigation. Finally, the researchers suggested that the intervention was cost-effective because it yielded significant differences in reading after a relatively short period of time.

Jones and Christian (2021) conducted a study of 576 kindergarten through second-grade students to determine the foundational literacy skills and reading achievement of students who participated in the SPARKS program, a one-to-one, intensive reading intervention delivered by tutors. Students from a district of Milwaukee Public Schools (MPS) participated in the randomized, control group study. English learners and students with individualized educational program (IEP) plans were not included in the sample. The students in the target district came primarily from low-income families. Prior to the study, the researchers administered the Phonological Awareness Literacy Screening (PALS; Invernizzi et al., 2015, as cited in Jones and Christian, 2021) to assess foundational literacy skills of phonemic awareness, alphabetics, word knowledge, and oral reading in context. The Measures of Academic Progress (MAP) assessment (Northwest Evaluation Association, 2009, as cited in Jones and Christian, 2021) was administered to assess reading achievement (fluency and comprehension) before and after the intervention.

After the year-long supplemental tutoring intervention, the literacy skills and reading achievement of students in the SPARKS program were reported (Jones & Christian, 2021). Unfortunately, Jones and Christian (2021) did not report differences between the SPARKS group and the control group; they chose to report the mean pretest to posttest gain score differences in reading skill development for the treatment group. The results of pretest and posttest linear modeling analyses revealed that the foundational reading skills of the SPARKS students were significantly influenced by the program, particularly for struggling readers ($p < .001$). Although the researchers observed significant correlations between SPARKS students and reading

achievement after the first year of treatment ($p < .05$), no significant correlations were found for reading achievement after 2 years of treatment ($p > .05$). However, 90% of the children who started the SPARKS program below benchmark levels in reading finished above or at benchmark level; only 33% of the control group students who started below benchmark level finished above or at benchmark. The researchers concluded that early one-on-one intensive tutoring in reading by well-trained and supervised tutors was especially beneficial for the students with the greatest needs for remediation.

Contesse et al. (2021) studied the benefits of a one-to-one, intensive, evidence-based reading intervention to improve the decoding skills and reading fluency of struggling first through fifth-grade readers during a 3-week summer literacy program. The research sample included 62 students attending a 3-week summer literacy program; the experimental group was composed of 37 students who qualified for 15 hours of intensive one-to-one tutoring based on reading fluency test scores. The remaining students ($n = 25$) formed the control group. At the end of the 3-week intensive intervention, the researchers analyzed pretest and posttest data from the CORE Phonics Survey (Diamond & Thorsnes, 2008, as cited in Contesse et al., 2021), the Test of Word Reading Efficiency-Second Edition (TOWRE-2; Torgesen et al., 2012, as cited in Contesse et al., 2021), and the oral reading fluency subtest of Dynamic Indicators of Basic Early Literacy Skills (DIBELS), Sixth Edition (Good et al., 2002, as cited in Contesse et al., 2021).

Contesse et al. (2021) found that both the experimental and control groups made statistically significant gains from the pretest to posttest on all measures except the TOWRE sight word efficiency and phonemic decoding efficiency subtests and the variant vowels section of the CORE Phonics Survey. The students' scores were also analyzed using regression discontinuity analysis, which is used to estimate the influence of interventions when treatment

group assignment is based on numeric cut scores. The results of the analyses identified significant differences between the experimental group's pretest and posttest scores in phonics-related skills ($p < .001$) and oral reading fluency ($p < .001$) after the intervention. No significant differences between the two groups were noted on the TOWRE measures. The authors concluded that one-to-one intensive tutoring interventions held promise for improving reading outcomes for struggling readers and students with specific learning disabilities. The researchers also pointed to the potential for intensive one-to-one tutoring to address summer reading loss.

Reading fluency is defined as reading accuracy, rate, and prosody (i.e., intonation, rhythm, and emphasis on words and sentences when reading aloud). Reading fluency is a critical component of reading comprehension (National Reading Panel, 2000). Azizifar et al. (2019) conducted a quantitative study of 68 second- and third-grade students to determine whether reading fluency rates for students who were identified as at-risk for dyslexia improved following the implementation of an intensive one-to-one tutoring program. The researchers used the Inventory Reading Test (IRT; Shafiei et al., 2009, as cited in Azizifar, 2019) to screen second- and third-grade students for characteristics of dyslexia in Ilam, Iran. The IQs of students identified during the dyslexia screening were measured using Raven's matrices (RM; Raven et al., 2018, as cited in Azizifar, 2019); students with IQs below 90 were excused from the study. The remaining 68 students were randomly assigned to treatment and control groups. Students in the treatment group ($n = 34$) participated in 20 hours of individualized tutoring within a 10-week period. Trained tutors implemented the Barton System of Spelling and Reading (BSSR; Barton, 1998, as cited in Azizifar, 2019), a research-based, systematic, multisensory, and intensive reading intervention program for students with dyslexia. Students in the control group participated in regular classroom instruction. At the end of the 10-week intervention, all the

students completed oral reading fluency tests to measure rate, accuracy, prosody, and comprehension. The mean reading pretest and posttest fluency scores of the experimental and control groups were compared using paired *t* tests. In addition, a *t* test of independent means was used to compare the mean posttest scores of the experimental and control groups. There were no statistically significant differences between the experimental and control groups on the pretest, indicating that the groups were similar at the beginning of the study. The results of the analyses revealed significant differences between the experimental and control groups' scores on the reading fluency test ($p < .001$) and between the experimental group's mean scores on the pretest and posttests ($p < .001$). The authors concluded that 20 hours of intensive reading instruction by trained tutors in one-to-one sessions significantly improved oral reading fluency for children identified as at-risk for dyslexia.

Relational Practices

Both researchers and practitioners have recognized the importance of positive teacher-student relationships (TSRs) and their relationships to students' academic achievement, social development, emotional well-being, and motivation to learn (Ewe, 2019; Hamre & Pianta, 2005; Sabol & Pianta, 2012). Strong TSRs encourage students' willingness to engage in learning (National Research Council, 2004).

The need to define relational practice was an important element of early research related to TSRs. Noddings (2012) described caring relationships as necessary components of healthy child development. Within a caring relationship, teachers attend to the expressed needs of the students based on attention to the student's words and actions. Noddings identified listening as an essential trait of attentiveness. Jensen et al. (2015) stated, "The true core of relational competence…consists of being able to meet students and parents with openness and respect, to

show empathy, and be able to take responsibility for one's own part of the relationship as an educator" (p. 206). Frelin (2013) identified trust, empathy, and the development of positive self-esteem as key aspects of relational practice. Components of trust included the sense of justice, benevolence, and transparency that makes expectations explicit, as well as a healthy sense of humor. Aspelin (2017) described the inter- and intra-personal capabilities necessary for promoting healthy relationships between students, parents, and colleagues: relationally competent teachers who practiced self-reflection and demonstrated self-awareness.

Varghese et al. (2019) designed a quantitative study to examine the relationships between conflictual and close TSRs and students' literacy achievement and social competence. The researchers analyzed data collected from an earlier randomized, controlled trial of a teacher development program entitled Targeted Reading Intervention. Ten rural Title I elementary schools across three districts participated in the original 2-year study. The sample for the researchers' 2018 study included 503 students (287 kindergarten students and 216 first-grade students) and 52 teachers (28 kindergarten teachers and 24 first-grade students) from the original study's control group. The researchers were especially interested in TSRs and outcomes for struggling readers. By choosing to analyze data from the kindergarten and first-grade students and the teachers who comprised the control group for the original study, the researchers eliminated the Targeted Reading Intervention professional development as a confounding factor, which enabled researchers to focus on TSRs, literacy, and social competencies.

Varghese et al. (2019) employed several assessments to identify the reading levels of the kindergarten and first-grade students within the sample. Grade-level subtests from AimsWeb (Shinn & Shinn, 2002, as cited in Varghese et al., 2019) and the Dynamic Indicator of Basic Literacy Skills, 6th edition (DIBELS; Good et al., 2002, as cited in Varghese et al., 2019) served

as screens to sort students into two groups: struggling and non-struggling readers. Students were then categorized as high risk, some risk, or low risk for reading failure. The letter-word identification and word attack subsets of the Woodcock Johnson Diagnostic Battery Test III were used to confirm struggling reader status (WJ III; Woodcock et al., 2004, as cited in Varghese et al., 2019). Multiple assessments were conducted in the fall and spring of each year to measure relationship quality and student achievement. The short form of Pianta's (2001) Student Teacher Relationship Scales (STRS) measured teachers' perceptions of relationships based on responses to questions related to closeness (8 items) and conflict (7 items) as measured by a Likert scale. Children's literacy achievement was assessed using the WJ III subtests for letter-word recognition and word attack skills. Teachers completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001, as cited in Varghese et al., 2019) to identify students' psychosocial difficulties and strengths, including externalizing behaviors, such as acts that violate social norms and that may harm others, and internalizing behaviors, such as sadness, withdrawal, and inhibition. Sharing, kindness, cooperation, and empathy were indicators of prosocial behaviors that benefit the community as measured by the SDQ. Using subsets of the SDQ, separate composite scores were created to describe the internalizing behaviors, externalizing behaviors, and prosocial skills demonstrated by the students in the fall and spring terms. The results of the assessment data were organized in hierarchical models for analysis.

Varghese et al. (2019) analyzed the data to determine whether close or conflictual TSRs were associated with children's literacy achievement and social competencies. In addition, the researchers wanted to know whether struggling reader status moderated the associations between TSRs and end-of-the-year student outcomes. The results of the analyses revealed that teachers' ratings of close TSRs in the fall were not significantly correlated to students' literacy

achievement ($p = .09$), externalizing behaviors ($p = .28$), internalizing behaviors ($p = .81$), or prosocial behaviors ($p = .20$). However, conflictual TSRs in the fall scores were significantly and inversely correlated on the following assessments in the spring term: literacy achievement in the spring ($p < .001$), externalizing behaviors ($p = .008$), and internalizing behaviors ($p < .001$). In other words, the students' literacy and behavior scores were lower in the spring term when there were conflictual relationships between teacher and student in the fall term. In addition, fall conflict ratings by the teacher on the SDQ were negatively correlated to students' prosocial behaviors ($p < .001$). The researchers also found significant correlations between TSRs and students who were struggling with reading ($p = .03$) and male students who exhibited externalizing behaviors in the spring ($p = .004$). Low scores on measures of literacy achievement were also significantly correlated to teacher ratings of students' internalizing behaviors ($p = .001$) in the spring. Further, conflictual TSRs in the spring term were significantly and negatively correlated to children's literacy achievement ($p < .001$) and prosocial behaviors ($p < .001$). Varghese et al. also found that relational negativity (i.e., conflict) was a significant predictor ($p < .001$) of students' literacy achievement, concluding that TSRs can help or hinder literacy learning among young students. No significant results were found to suggest that struggling reader status moderated the relationships between TSRs and literacy achievement or social competencies, which led the researchers to suggest the need for longitudinal studies to examine the relationship between TSRs, struggling reader status, literacy achievement, and social competencies over time.

Few interventions focus on developing TSRs in therapeutic learning contexts. Defining and describing teachers' relational competencies in the context of special education fills a gap in TSR research. A recent qualitative study by Aspelin et al. (2021) was designed to examine

special educators' perceptions of the ability to build positive TSRs. The researchers conducted interviews with 21 experienced special educators to explore two research questions:

(1) What is the role of social relationships in successful work as a special education instructor?

(2) How is the relational competence of special educators realized in practice?

Aspelin et al. (2021) recruited interview subjects through an alumni group for Swedish special educators. The 21 participants (19 females and two males) were divided by geographical location, and each group of participants was assigned to a specific researcher who conducted the interviews. The interview protocol consisted of 11 questions distributed among three parts:

- special educators' perceptions of the importance of relationships in their work,

- the professional role of special educators, and

- how relational work is exhibited in practice.

Each researcher traveled to the participants' school sites to conduct the semi-structured interviews. The 1-hour interviews were digitally recorded and transcribed verbatim.

Aspelin et al. (2021) analyzed the interview data using conventional thematic analyses for individual interviewees and the group as a whole. Each researcher in the team studied and coded the entire dataset. The researchers' individual codes were then compared, and differences were settled by means of consensus-building processes. Primary themes were identified, and each researcher was assigned a theme to support with evidence from the entire dataset. After sharing themes and codes, each researcher returned to his or her assigned theme to identify subthemes, write a description, and select extracts from the interview texts to support the description. Once again, the group reviewed individual work products, asked questions, and came to a consensus.

Aspelin et al. (2021) identified four main themes in the interview data. In Theme 1, special educators identified relationships as the foundation of their work. Participants stated that positive relationships were especially important in special education. The interviewees agreed that relationships with parents, school staff and faculty, and school administrators were important, but the primary focus was on the relationships between teachers and students. In Theme 2, the teachers' attitudes of acceptance and challenge were evidence of relational competence. The interviewees held that relational competence was demonstrated in calm and accepting interactions with students that demonstrated care and interest in individual students. The interviewees also discussed common perceptions of the importance of challenging and engaging students in learning, which was achieved through relationships. In Theme 3, special educators perceived relational competence as the ability to build connections with students. Valuing the student as an individual, connecting with the student's interests, and identifying the student's strengths and weaknesses emerged as subthemes for building connections. In Theme 4, building trusting relationships was a key component of relational competence. Interviewees described trust as the foundation of TSRs and noted that building trust takes time and hard work.

Aspelin et al. (2021) concluded that this sample of special educators viewed relationships and connectedness to be foundational to student learning. These special educators identified key components of relational competence that can be operationalized in professional practice. The results of this study point to the need to clearly describe relational competency in practice and to include professional development for teachers to build relational competency in preservice teacher preparation and in-service programs. The researchers suggested that future studies should include video data of classroom interactions to identify and describe relational competency in actual classroom and therapeutic practice. Given the importance of positive TSRs for students'

development, research describing special education teachers' relational practices has the potential to inform professional practice, enhance teacher education, and support student learning.

Nielsen (2011) conducted a phenomenological study to investigate the experiences of nine students with dyslexia to determine their expectations of teachers in the classroom setting. Foundational elements of the theoretical framework for the study included the idea that experiences shape individuals' beliefs about themselves and their capabilities and the belief that teachers play an important role in shaping students' perceptions of school and of themselves. Elementary through adult education students with dyslexia were nominated by their teachers to participate in the study. Nielsen purposefully selected nine participants ranging in age from 8 to 53 years. The wide range of ages and experiences enabled the researcher to investigate the expectations from a variety of perspectives. Each of the student participants had been given a diagnosis of dyslexia and had also self-reported the efforts required to overcome reading difficulties. The students were interviewed once a month during the school year for approximately 1 hour, and a follow-up interview was conducted 6 months later. The semi-structured interview questions focused on students' perspectives on school projects and demands, time and space, relationships, learning and change, school and free time, and the participants' perception of self. During the interviews, Nielsen asked students to share their struggles with reading and writing. The researcher also observed each participant while reading and writing to corroborate the interviewees' statements.

Nielsen (2011) analyzed and interpreted the interview data thematically and wrote a life story of each participant. The students read the researcher's story and agreed with the interpretations. Individual experiences were subsequently compared, and group patterns were identified. Three important areas of interaction between teachers and students were identified in

the interview analyses: relational practices, access to learning tools, and time and space accommodations for learning. Students described good teachers as those who saw the student as an individual with strengths and weaknesses and who related to the student as a whole person, not as a learner with dyslexia. Teachers who made students feel valued had a lasting, positive influence, just as teachers who made students feel unintelligent or unwelcome had an enduring negative influence. Teachers who promoted students' access to learning tools were reported to be sensitive to students' strengths. The students reported that competent and flexible teachers assessed students' individual needs and provided options to support learning, which led to positive learning experiences. Providing students with the time and space to complete academic tasks was an important quality of a good teacher among the learners with dyslexia in this study. When teachers employed flexibility and creativity, the students reported feeling empowered to engage in difficult tasks. On the other hand, the students' recollections of being rushed to complete a task evoked negative feelings, which discouraged engagement and contributed to failure. Students' reports of feelings of inferiority and a lack of self-efficacy also contributed to negative behavioral and academic results. The researcher concluded that the positive relational practices described by the students in the study enabled students to feel seen, valued, and supported. Teachers' acceptance and understanding, coupled with sound pedagogical practices, enabled students to overcome difficulties.

Nielsen's (2011) study is somewhat unique in that it examines students' perspectives of teachers' relational practices. The students provided important insights into ways students with dyslexia perceived TSRs. In addition, the students described positive, supportive practices that made a difference in the students' lives.

COVID-19 and Reading Instruction

School closures in the United States due to the COVID-19 pandemic were widespread and lengthy. Although different states responded in various ways, many researchers and practitioners expected a level of learning loss, especially among students in primary grade levels and learners who were not on the level with their grade and age level peers prior to the pandemic (e.g., Sawchuk & Sparks, 2020; Storey & Slavin, 2020).

In the fall of 2020, Domingue et al. (2021) conducted a study of more than 100 school districts nationwide and found that second-grade and third-grade students fell behind expectations for oral reading fluency by approximately 30% after rapid deployment of mandated virtual instruction during school closures in the spring of 2020. The oral reading scores in lower-achieving schools fell even further behind. Unfortunately, vulnerable student populations faced even greater difficulties related to school closures and distance learning.

Many schools and teachers were not prepared to meet the needs of students with learning disabilities or from low socioeconomic families or those living in rural areas with minimal or no access to technology and services (Barnett & Jung, 2021; Gross & Opalka, 2020; Storey & Slavin, 2020). The National Institute for Early Education Research (Barnett & Jung, 2021) conducted a survey of a nationally representative group of 1,000 American families. The researchers found that 23% of young children with disabilities did not receive any of the services required by IEPs during virtual instruction in spring 2020, and 40% of young children failed to receive all services required by IEPs. After three semesters of distance learning due to the pandemic, Oregon schools offered IEP recovery services because many Oregon students had fallen behind during the 18-month period before the universal return to face-to-face instruction (Oregon Department of Education, 2022b). Storey and Slavin (2020) asked an important

question, "How can schools close the gap that has formed due to the COVID-19 slide and unequal access to education?" (p. 629).

Cancer et al. (2021) conducted a small-scale clinical trial of 30 students with dyslexia to compare in-person delivery of instruction to remote delivery of a support program for students with dyslexia during the spring 2020 COVID-19 lockdown phase in Italy. Thirty participants were recruited from among patients of three Italian clinical institutions that offered learning disabilities services. The participants (12 females,18 males) ranged in age from 8-13 years, were reading two or more standard deviations below the norm on at least one standardized test of reading, were of normal intelligence, and had no psychiatric or neurological conditions. The researchers matched participants based on age, sex, IQ (as measured by WISC-IV; Wechsler, 2003, as cited in Cancer et al., 2021), and baseline reading performance to create two groups of 15. One group participated in a remote telerehabilitation group (TR), and the other group participated in an in-person group (IP). Trained practitioners facilitated Rhythmic Reading Training (RRT; Cancer et al., 2016, as cited in Cancer et al., 2021), a research-based program that addressed syllabic blending, syllabic reading, word recognition, and sub-lexical decoding using rhythmic-melodic stimuli and visual cues to improve individualized reading speed and accuracy. Both the IP and TR groups participated in the RRT training for 45 minutes twice a week for 10 weeks (15 hours total). The instructors delivered RRT to individual members of the IP group while sitting next to the student and sharing a computer screen in a quiet room. For students in the TR group, each instructor managed the RRT software in a remote location and shared their computer screen with the students via a virtual meeting. Technology issues were addressed in test videoconferences to confirm stable internet connections and to test the screen-sharing application. RRT practitioners monitored and adjusted each participant's instruction

based on the participants' achievement, with the goal of 90% accuracy before progressing to the next level of the reading program.

Cancer et al. (2021) employed multiple measures to collect reading performance data. Each participant's ability to read age-normed text passages aloud was assessed using the New MT Reading Test, an Italian standardized test of reading achievement (Cornoldi & Colpo, 1995, as cited in Cancer et al., 2021). The researchers also administered the Assessment Battery for Reading and Spelling Disorders (Sartori & Job, 2007, as cited in Cancer et al., 2021) to assess word and pseudo-word reading. RAN was assessed using the Rapid Naming Test and Visual Search of Colors, Figures, and Numbers (De Luca et al., 2005, as cited in Cancer et al., 2021).

Cancer et al. (2021) conducted a mixed-factorial ANOVA test to compare the variables of condition (TR or IP) and pretest and posttest reading scores before and after the intervention. Mean reading scores were used to compare reading speed, accuracy, and RAN. The results of the analyses revealed that all the subjects improved significantly after the intervention on measures of reading speed ($p = .001$) and accuracy ($p = .04$). The analyses revealed that the pretest/posttest by treatment condition interaction effects were not significantly different (reading speed, $p = .77$); reading accuracy, $p = .43$), indicating that the type of training was not a significant factor in this sample of readers with learning disabilities. The comparisons of RAN speed revealed similar outcomes. The RAN pretest/posttest score comparison of the IP and TR groups were significantly different ($p = .04$), but the phase-by-condition interaction effects were not significant ($p = .43$). The researchers concluded that RRT was an effective intervention whether administered in person or remotely. Telerehabilitation made it possible to continue support services for children and adolescents with special learning needs during the pandemic. This small study provided cautious but encouraging evidence of the ability of remote instruction to assist

students with dyslexia. The use of ANOVA with small cell sizes precludes definitive answers to the question of remote versus in-person instruction in reading among learners with dyslexia. Further research with larger sample sizes should include follow-up measures to assess long-term effects.

Cancer et al. (2021) reported that questions remain regarding the efficacy of remote interventions for vulnerable populations. Anecdotal evidence uncovered in the study revealed that virtual interventions were more tiring for students than IP instruction. Young students and those with more severe disabilities had difficulty maintaining attention in virtual learning spaces. Although the ability to effectively support learning via remote delivery was possible, the researchers preferred hybrid or face-to-face settings, noting the importance of relational aspects of clinical interventions, which were better face-to-face.

Weiss et al. (2022) conducted a randomized controlled experiment to examine whether students who were ready to enter kindergarten could learn fundamental reading skills in an online summer reading camp during the COVID-19 pandemic and school closures. The researchers also wanted to determine whether the students' achievement was related to socioeconomic status. The sample consisted of 176 five-year-old children who were pre-readers. The experimental group ($n = 83$) participated in a 2-week online summer camp; the control group ($n = 33$) did not attend the online summer camp and did not participate in formal reading interventions. Prescreening ensured that the groups were matched for socioeconomic status and parental education levels. English was the primary home language for all the participants, and none of the participants had official diagnoses of special needs. The online reading camp lasted 2 weeks, for 5 days each week. The experimental group participated in 2.5 hours of daily reading instruction (with breaks) for approximately 25 hours of remote reading instruction during the 2-

week period. The Zoom reading sessions were led by two trained instructors who met individually in breakout rooms with groups of three children or as one large group in the main session. All necessary equipment (i.e., computers, monitors, and child-sized headphones) and materials (i.e., manipulatives and print media) were provided to the students' homes prior to the start of the remote summer camp. Reading instruction included phonological awareness, letter-sound knowledge, letter identification, consonant/vowel/consonant word blending/reading, and exposure to literacy during daily read-aloud sessions. Research-based practices and strategies for instruction were implemented in a systematic, explicit, multisensory, and intensive intervention.

Weiss et al. (2022) administered multiple measures prior to and after the remote summer camp experience to assess the experimental groups' progress and to compare performance between the treatment and control groups. The control group was assessed during the same time frame as the experimental group. Letter knowledge was assessed by presenting all 26 letters in random order. Students earned a point for producing the correct, isolated name of each letter. Although only lower-case letters were taught in the intervention, the researchers chose to administer the assessment twice, with both upper- and lower-case letters. Subtests of the Woodcock Reading Mastery Tests-Third Edition (Woodcock, 2011, as cited in Weiss et al., 2022) were administered to measure phonological awareness and RAN of objects and colors; different versions of the tests were used as preassessments and post assessments. The Expressive Vocabulary Test-Third Edition (Williams, 2018, as cited in Weiss et al., 2022) was used to assess expressive vocabulary and word retrieval. Pseudo-word reading was assessed using the Phonological Awareness Literacy Screening Quick Checks for K-3 Grades Test (Invernizzi et al., 2003, as cited in Weiss et al., 2022).

Weiss et al. (2022) conducted a two-sample *t* test to compare the baseline scores of the control and treatment groups to determine that the groups were not significantly different on the pretest scores. The researchers noted that the pseudoword decoding data were not normally distributed; therefore, the researchers chose to use a Mann-Whitney *U* test to compare the control and treatment groups on the pseudoword reading assessment. To measure the effectiveness of the remote reading summer camp experience, separate repeated-measures ANOVAs were conducted using the mean raw scores as the dependent variables. Pretest and posttest mean scores were the within-subject factors, and treatment versus control group was the between-subjects factor. Paired-sample *t* tests were used to examine the mean pretest and posttest scores for each group. The Wilcoxon signed-rank test was used to compare the two groups' scores on the pseudo-word reading tasks. The results are presented in Table 5.

Weiss et al. (2022) concluded that the short-term, research-based program of remote reading instruction was beneficial for the prekindergarten students in this sample. When compared to the control group, the children who participated in the online reading program showed significant growth in phonological awareness, letter-sound knowledge, letter identification, and consonant-vowel-consonant word blending/reading. Interestingly, both the experimental and control groups showed improvement in skills that were not taught directly in the camp sessions: uppercase letter sounds, RAN, and expressive vocabulary. The treatment group significantly exceeded the control group in those areas. The researchers noted that, with the exception of pseudoword reading, socioeconomic status was not significantly related to the results of the intervention. The researchers suggested that a test-retest practice effect might account for the improvement. A notable limitation of the study was the size differences between the treatment (*n* = 50) and control groups (*n* = 33). The researchers suggested balancing the size

of the groups in future studies. In addition, the practical significance (versus statistically significant differences) must be considered. In many cases, the differences in mean scores for the experimental and control groups were less than one point. Future research could compare online and in-person delivery of the reading camp instruction. The researchers stated that they hoped to conduct neurological studies to better understand neuroplasticity in short-term interventions as young children begin to learn to read.

Table 5

PreK Students' Reading Skills Pretest and Posttest Scores Following Online Intervention

Subtest	Group	Pre		Post		Comparison	
		Mean	SD	Mean	SD	Test	P value
Upper case letter names	Experimental	19.34	7.53	20.28	6.56	*t*-test	< .001
	Control	18.94	7.25	19.59	7.68	*t*-test	.244
Upper case letter sounds	Experimental	5.57	6.09	10.92	6.24	*t*-test	< .001
	Control	5.63	5.07	7.03	5.80	*t*-test	.045
Lower case letter names	Experimental	15.60	6.87	18.72	6.26	*t*-test	< .001
	Control	15.73	6.77	16.67	6.66	*t*-test	.077
Lower case letter sounds	Experimental	6.35	5.73	11.12	6.20	*t*-test	< .001
	Control	5.15	4.69	7.09	4.97	*t*-test	.001
Phonemic awareness	Experimental	14.22	5.86	18.80	5.49	*t*-test	< .001
	Control	14.34	5.02	14.66	6.31	*t*-test	.604
Rapid automatic naming	Experimental	13.28	3.80	15.00	3.75	*t*-test	< .001
	Control	13.83	3.95	14.88	3.89	*t*-test	.042
Pseudoword decoding	Experimental	1.10	3.05	2.14	4.48	Wilcoxon	< .001
	Control	0.94	2.40	0.75	1.54	Wilcoxon	.837
Expressive vocabulary	Experimental	82.29	13.03	85.46	13.02	*t*-test	.001
	Control	81.97	12.95	85.79	12.58	*t*-test	.015

Note. PreK = prekindergarten. The experimental group, *n* = 50; the control group, *n* = 33. All results are calculated based on the mean score of each test. Reprinted from "Can an Online Reading Camp Teach 5-Year-Old Children to Read?" by Y. Weiss, J. D. Yeatman, S. Ender, L. Gijbels, Loop, H., Mizrahi, J. C., Woo, B. Y., and Kuhl, P. K., 2022, Frontiers in Human Neuroscience, Vol. 16, p. 13 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9009259/).

* *p* < .05, ** *p* < .01.

Summary

The study of reading development has a long and storied history that has propelled theories and practice forward for decades. The importance of theory and empirical research cannot be overstated when discussing young children as they learn to read. Identification of

strategies and interventions to assist children and adolescents who struggle to learn to read has been a key focus for researchers. This literature review focused on evidence-based instructional and relational practices in reading development among children and adolescents and examined emerging research related to teaching reading during the COVID-19 pandemic lockdowns.

The preponderance of recent research evidence presented in this literature review supported the importance of structured literacy practices for teaching learners who struggle to read (Moats, 2019; Spear-Swerling, 2019). Systematic and cumulative phonics-based instruction effectively built reading ability as students mastered increasingly sophisticated reading skills by following a thorough and clear progression of learning (Castles et al., 2018; Moats, 2019; Spear-Swerling et al., 2019). In particular, systematic phonics-based instruction supported reading development among individuals with dyslexia (Levlin & von Mentzer, 2020; Taylor et al., 2017). Explicit instruction with frequent, positive student-teacher interactions and frequent feedback work together to influence student achievement in reading (Ryder et al., 2007; Vaughn & Fletcher, 2021). Opportunities for multisensory learning in reading instruction have been shown to improve reading achievement, especially among young children (Bøg et al., 2021; Giess et al., 2012; Magpuri-Lavell et al., 2014). Finally, intensive interventions that reduce student-teacher ratios, increase instructional time, or both are related to reading achievement (Azizifar et al., 2019; Contesse et al., 2021; Jones & Christian, 2021; Wheldall et al., 2017).

TSRs and connectedness were significantly correlated to literacy achievement among young readers (Hamre & Pianta, 2005; Varghese et al., 2019). In addition, special educators identified the relational practices needed to promote healthy classroom dynamics that have led to student learning (Aspelin et al., 2021). The perceptions of students with dyslexia confirmed the

importance of teachers' intentional integration of relational practices that contributed to feelings of being seen, valued, and supported in a positive environment for learning (Nielsen, 2011).

A number of studies sought to determine the influence of COVID-19 school closures and remote instruction on reading instruction and student achievement (Barnett & Jung., 2021; Gross & Opalka, 2020; Storey & Slavin, 2020). The results of these recent studies indicated that reading achievement suffered during the pandemic (Domingue et al., 2021). Vulnerable learners, such as learners with special needs, did not achieve at expected levels due in part to a lack of support services and specialized instruction (Barnett & Jung., 2021; Gross & Opalka, 2020; Storey & Slavin, 2020). Students with dyslexia were especially vulnerable to learning loss during the pandemic (Barnett & Jung, 2021). Research on reading interventions such as tutoring and remote summer reading camps offered promising ways to reduce the reading gaps identified after schools reopened (Cancer et al., 2021; Weiss et al., 2022). Research conducted during and after the pandemic lockdowns enabled educators to reflect on effective approaches to online teaching and learning as teachers translated face-to-face instruction to virtual spaces.

III. METHODS

The purpose of this qualitative collective case study was to examine the relational and professional practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. Qualitative research is described by Clarke and Braun (2013) as "research that uses words as data, collected and analyzed in all sorts of ways" (p. 2). Merriam and Tisdell (2009) define case study research as "an in-depth description and analysis of a bounded system" (p. 37). The case study researcher conducts in-depth, detailed data collection and analysis to report a rich description of the case(s) and cross-case themes. The research design, research questions, data collection, and data analyses are described in this chapter.

Description of Research Design

This non-experimental, qualitative collective case study was designed to examine the instructional and relational practices literacy tutors used to support learners with dyslexia in VLE during the COVID-19 pandemic. Creswell and Poth (2018) confirm that case study research is "a good approach when the inquirer has clearly identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases" (p. 100). Based on Creswell and Poth's (2018) criteria, case study research is the appropriate method for the current study. The boundaries for the current study included time (the period between March 2020 and September 2021 during the COVID-19 pandemic) and place (VLE). The goal of the study was to provide an in-depth

understanding of the practices of literacy tutors during the historic time period. The collective case study design allowed for a detailed description of each case, thematic analyses across cases, and the lessons learned from the cases.

Participants

The criteria for purposeful sampling reflected the overall objective of the study: to examine the practices of literacy experts who tutored students with dyslexia in a VLE during the pandemic. The five literacy tutors in this study were experienced private practitioners who were certified to teach and support students with dyslexia. Although the tutors were licensed to work with students in all age levels, from prekindergarten to adult, this study focused on the tutors' experiences working with students in kindergarten through Grade 6. The tutors provided literacy instruction as a supplement to classroom-based instruction, which was also delivered virtually during the pandemic.

The researcher sent email invitations to potential participants who were known to the researcher or identified through snowball sampling strategies. Eight individuals initially expressed interest in participating in the research study and were interviewed. The data from five of the interviewees provided the richest information and were subsequently included in data analyses.

Each of the five research participants qualified as literacy experts in the state of Oregon. Their qualifications included at least a Bachelor of Arts or Science in education or a related field, at least 5 years of teaching experience, and accreditation or certification from a program recognized by the International Dyslexia Association. Each participant had more than 20 years of teaching experience.

Role of Researcher

After recruiting participants for the study, the researcher scheduled semi-structured interviews for each participant. An interview guide consisting of five open-ended questions was approved by the dissertation committee and used to guide interactions during the interviews (see Appendix D). The researcher facilitated each conversation by asking questions and prompting the participants for more information when warranted.

Measures for Ethical Protection

Ethical practices designed to protect human subjects were addressed during data collection and analyses in the current study. The study's design and plans for execution were approved by the Institutional Review Board at Southeastern University. The interviewees volunteered and consented to participate in the study. The purpose and design of the study were clearly described to the participants. Before beginning each individual interview, the researcher reiterated the purpose of the study and the promise of confidentiality. Prior to data analysis, the interview transcripts were thoroughly reviewed to identify and remove names of schools, students, colleagues, and locations to ensure confidentiality. The participants were identified by a pseudonym on all related documents and materials. The data files were stored on a password-protected computer in a locked room. At the completion of the study, all records were copied to a USB drive and stored in a safe. After a period of 3 years, the files will be erased. No potential for harm was associated with this research study. After carefully checking and rechecking each interview transcript against its audio file, the researcher sent an email with a clean copy of the interview transcript to each participant for review and change as appropriate. Upon completion of the dissertation, the researcher will share the results of the study with the participants.

Research Question

What instructional and relational practices did literacy tutors implement to support learners with dyslexia in virtual environments during the COVID-19 pandemic?

Data Collection

Upon approval from the Institutional Review Board at Southeastern University, the researcher began recruiting participants for the qualitative collective case study. A preinterview survey (Appendix C) was completed by the literacy tutors who volunteered to participate in the study. The preinterview survey solicited background information prior to scheduling an interview at a mutually agreeable time. A list of questions was sent to each participant prior to the scheduled interview so that the participants had time to consider the questions and prepare for the interview. The semi-structured interviews were scheduled for 60 minutes and were conducted in Zoom meetings.

The open-ended interview questions (Appendix D) were designed to elicit information regarding the contexts for teaching and learning during virtual tutoring, the instructional and relational practices used by tutors, and the lessons learned from the tutors' experiences. During the interviews, the researcher made notes related to the interviewees' impressions and non-verbal communication. Interviews were audio- and video-recorded in Zoom and by the VoiceMemo application (audio) on an iPhone. The audio files were uploaded to the Otter.AI transcription application to check the written transcripts against the audio files. The researcher edited the transcripts for accuracy before uploading them to Microsoft Word for data analysis. Each participant received a clean copy of the Word transcript for review and validation. Audio files and written transcripts were referenced throughout the data analysis process.

Data Analysis

Creswell and Poth's (2018) data analysis spiral served to guide the data analyses conducted in the current study. Managing and organizing the transcript data was the first step in data analysis. The researcher followed the steps for analysis outlined by Miles and Huberman (1994). The researcher created a system for marking transcripts that incorporated color and spacing to visually organize the texts. The researcher then recorded notes and ideas while reading and listening to the interviews. Information from the researcher's handwritten interview notes and descriptions of vocal quality were also considered and included in the analyses. Initial codes were identified. The individual contexts for learning were described in detail. Categories were subsequently created, and codes were defined. A codebook was created to categorize the interview data into codes, which were refined over time. Through iterative review within and across cases, commonalities and differences were identified, and connections were made. A spreadsheet was created using Microsoft Excel to organize and record the data.

In collaboration with the dissertation methodologist, the researcher determined that five of the research subjects provided the richest data to address the research question. Analyses were subsequently conducted based on the data from the cohort of five interviewees. Three themes emerged during cross-case analyses. The themes provided the basis for subsequent interpretations of the data; in this way, the researcher could begin "abstracting out beyond the codes and themes to the larger meaning of the data" (Creswell & Poth, 2018, p.195).

Summary

This qualitative collective case study was designed to provide information and techniques to enrich the researcher's understanding of the practices employed by literacy experts to support learners in VLE during a highly volatile and chaotic crisis in education. Employing a collective

case study approach provided an in-depth understanding of the tutors' and students' experiences and allowed the researcher to identify themes through cross-case analyses. The results of the data analyses are reported in Chapter 4.

IV. RESULTS

The purpose of this qualitative collective case study was to examine the instructional and relational practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. The state of Oregon closed public schools beginning in March 2020 and reopened the schools in September 2021, providing a unique opportunity to examine teaching and learning in VLEs over an extended period of time.

Methods of Data Collection and Analysis

After the Institutional Review Board at Southeastern University granted approval for the study, the researcher invited known literacy tutors to participate in the research study. Purposeful sampling and snowball sampling strategies were employed in the selection of eight participants to be interviewed using questions that were validated by the dissertation committee (see Appendix D). All the subjects in the study were literacy experts (see Table 6) in private practice who delivered real-time instruction in virtual environments to support elementary students with dyslexia in accordance with Oregon's pandemic mandates.

Each tutor who volunteered had at least 20 years of teaching experience. These tutors provided literacy instruction as a supplement to classroom-based instruction, which was also delivered virtually during the pandemic. In this study, the private tutors conducted at least 28 hours of one-to-one instruction. In addition, they were responsible for planning the instruction, meeting with parents, administering assessments, and engaging in the regular work of

maintaining a private practice. Because tutors personalized learning for each student, the length of each session and the number of sessions each week varied. Generally, each tutor met with a tutee twice a week for 1 hour. Each of the tutors mentioned an increase in demand for private instruction during the pandemic.

Table 6

Participants' Qualifications

Participant	Level of Education	Certified
A	Master of Education/NILD II	Yes
B	Bachelor of Arts in Education	Yes
C	Master of Arts in Education/ Reading Specialist Endorsement	Yes
D	Master of Arts in Education	Yes
E	Master of Arts in Education/ Special Education Endorsement	Yes

Note: NILD = National Institute for Learning Development

[a] International Dyslexia Association Approved Accreditation/Certification

Each research volunteer was sent an email that outlined the purpose of the study, protections for the participant, and ethical considerations. After signing the consent form (see Appendix B), the participants completed a pre-interview survey (see Appendix C) requesting background and demographic information. Prior to the scheduled interview, the participants received the list of interview questions (see Appendix D) to allow time to consider the questions and prepare for the interview. Individual Zoom meetings were scheduled and conducted in the fall of 2021.

The semi-structured, individual interviews consisted of five open-ended questions; interviews lasted between 40 to 60 minutes. The researcher completed handwritten notes during

the interviews to document the tutors' impressions and thoughts. The virtual interviews were recorded in Zoom and in the Voice Memos app on an iPhone.

The audio recordings were transcribed using the Otter.AI transcription application, and the transcripts were exported to Microsoft Word for data analysis. The researcher checked the accuracy of each transcript by listening to the audio recording while reading the transcript to detect any errors. In addition, the researcher noted instances of non-verbal communication, specifically chronemics communication (e.g., pauses, response times) and paralinguistic communication (e.g., pitch, amplitude, rate, and vocal quality). Each participant received a clean copy of the interview transcript for validation prior to data analyses. One participant responded with additional information. Confidentiality was ensured by removing personal identifiers from the transcripts, and pseudonyms were given to each participant.

Multiple readings of the transcripts generated copious notes. Codes were created and applied; each case was described in detail. In collaboration with the dissertation methodologist, the researcher determined that the richest data were provided by five of the interviewees. The data from these five subjects were used in individual and cross-case analyses to determine the overarching themes.

Findings by Research Question

The story of each participant was revealed through the process of qualitative data analyses: multiple readings of the transcripts, analysis and categorization of the data, the assigning and refining of codes, and the identification of themes. The results of the analyses are described in the following sections.

Instructional Practices

Analyses of the interview data revealed a number of instructional practices literacy tutors used to support learning in the VLE. The results of the analyses revealed common experiences that are described below.

Prior Experience

Prior experience tutoring a student with dyslexia in a VLE enabled Participant A to make a quick transition to one-to-one, real-time instruction online. When school closures were enacted, Participant A immediately shifted all of her clients to a VLE. She stated,

When the pandemic hit, I had already been up and running; in September 2019, I decided to get virtual learning ready in case I needed it. I ended up working with a boy in Costa Rica. So, from September [2019] to March [2020], he was the only person that I worked with online with dyslexia. When the pandemic hit [March 2020], I was ready to go with all the other kiddos.

When Participant B moved instruction to a VLE because of the pandemic, she had little experience with technology. She jumped in and learned by doing:

I got a little stand for my iPad, so I could use my iPad, which is kind of a document camera. I could screen mirror, so they [the students] could see what I was doing in front of me. And, you know, it's so funny because some of my students would say, "Hey, flip it around," or, "You're looking at this backwards." You know, it was just so challenging for me.

The tutors in the current study described a range of experiences when implementing technology in a VLE. One example of differing experiences can be seen in two participants' perceptions of the same software program. When the pandemic hit, Participant A transitioned

smoothly to a virtual format: "I use the Barton Spelling and Reading Program, and they had a special platform on Whizzimo that gave me everything I needed to interface." Participant B reflected on a different experience during virtual instruction when attempting to implement the same publisher's recommended software application:

> You have to run another app for all of the Barton tiles [digital reading manipulatives], which is super, super glitchy. [Verbal pause] It has a strange delay. And so, the students, with their mouse, should be able to grab a [phonogram] tile and pull it down. It was constantly not capturing the tile; it was just glitchy as all get out. And that was frustrating.

Digital Tools

Digital tools became key components of instructional practice in a VLE. Participant C stated, "I use two cameras when I teach. I have one camera that's pointed at me, and I have another camera [to use as] I was giving an example of how something works. I just go back and forth between two cameras." The use of multiple cameras also helped Participant C to monitor and confirm student learning. She noted, "I can watch the responses. I can bring my camera close up to my face. So, if a kid is not hearing all the sounds in a word, I get in really close." An external camera allowed Participant A to demonstrate important skills such as letter formation and word segmentation. She noted, "The document camera is your friend! It's really good to be able to switch to a document camera to demo something. It would be even better if they [students] also had a document camera; that would be super helpful."

Using digital books (e.g., Vooks, Kindle) was another helpful practice that supported learning in the VLE. To continue reading development, Participant B adopted digital texts: "When the library was shut down, to find books became difficult, so I was pulling off articles, maybe from different children's news sites like NEWSELA or ReadWorks." She also used

Google Classroom to practice repeated readings of carefully selected texts. She described one of the reading fluency practice activities:

> We're practicing reading with good phrasing because we're very much into "robot reading." So, even though we're reading these words, what does it feel like to read with good phrasing and expression? I can put sheets on there [the learning management system] for them to be able to manipulate at home [practice reading] and then revisit when we're in person together [online].

Multisensory Practices

The need to incorporate multisensory instructional practices challenged both tutors and tutees in virtual spaces. Participant A summed up a major weakness of learning in a VLE that was also identified by each of the four other participants: "I think that with learning online [for learners with dyslexia], we kind of eliminate a few of the senses. It does seem a little bit more flat and less multisensory, for sure, than when you have them [students] in person [in a physical space]." She shared methods to increase multisensory learning:

> We did try to really use the eyes, the ears, and then we would use the fingers to count the sounds. But you know, using a mouse to pull down tiles isn't the same as physically touching tiles and pulling them down or building words with foam or tactile letters.

The tutors in this study reported that both high and low technologies supported movement and multisensory engagement in the VLE. Participant C's students would each have a small, handheld whiteboard at home to write down their answers and flash them up, and the students practiced different ways of responding to questions. They might drag the tiles down, or they might try to write with the cursive scribe. According to Participant D, with careful planning, multisensory learning can happen in the VLE: "There are still ways to tap; there are still ways to

drag tiles or to use a cursor to touch a colored square." Participant C included opportunities for multisensory learning in every online lesson: "If [students] don't write it down, record it, listen to it later, or maybe draw a picture of what I was talking about, [they're] probably going to lose most of the information."

Participant A reported that she had to be careful to articulate clearly and speak loudly when interacting with students online: "I had to make sure they watched my mouth because they couldn't rely only on their ears. They had to watch, look, and listen the whole time." She also intensified her efforts to increase students' awareness of their own bodies, asking them to consider, "Where's your tongue? What's your tongue doing right now when you say /th-TH/? What are your lips doing? Your teeth? Have them think and feel their own body and what they're doing."

High levels of student-teacher interactions and multisensory/multimodal engagement were necessary during instruction. Participant E said, "I can't just be speaking at them; that's not going to work. They need to be able to virtually or remotely move things." Participant E reflected the experiences of all the literacy tutors when she described ways technology helped to achieve multisensory goals in the VLE: "I use the MIRO Board a lot, and Jamboard through Google—the G Suite—to be able to provide hands-on learning opportunities for students." She reflected on the need to train tutees to use digital tools: "I teach them how to use the annotating feature if they're on Zoom, and then they get more reading. They're underlining phrases as they read, or you can circle words." In addition to digital resources, Participant E relied on analog games and manipulatives: "We can play a Connect Four game. I also teach math with Making Math Real. We can play Connect Four, reviewing our multiplication facts. And they're marking, and I'm marking." She summarized her strategy by stating, "I need to make sure I use every

opportunity to make it hands-on, just like you're sitting there with me in the same room."

Participant E also identified structured literacy practices she employed while teaching in the VLE. Practice and review were important elements of her instruction. She emphasized the priority of giving students opportunities to "practice what we've been talking about." She offered multiple classes, noting the need for "repetition, repetition, repetition; we know we need that." The use of digital and physical manipulatives helped to support multisensory engagement during repeated practice of foundational skills.

Student Engagement

The literacy tutors described instructional practices to support student engagement in the VLE. All the tutors used brain breaks to combat students' Zoom fatigue. Participant A noted that brain breaks helped stretch the length of time learners could stay engaged in the VLE: "After a 2-minute game to kind of relieve their brain from reading, I can get another 30 minutes out of them."

Beginning lessons with a high-interest activity was another successful practice to generate student engagement. Participant D stated, "I often would start with a read-aloud story, or I would begin the lesson with a game." She reported, "Instructionally, you can learn a lot of reading with games. And so, I use a lot of that type of thing." Because students were eager to play games, Participant A recognized the value of games to reinforce learning and practice concepts. The limited availability of games for use in virtual environments led Participant D to request resources from the publisher:

> When the pandemic hit, I purchased a few of the games available online and found free
>
> games available online. And then I wrote to the producer of those online games and said,
>
> "Could you please quickly produce more?" She said, "Well, it costs a lot to produce

these," and I said, "We need them desperately!" And she [the publisher] cranked out a whole bunch of online games to go with the Susan Barton program.

Participant C used games to engage students in learning and to encourage a sense of connection in the VLEs:

I integrate games like Don't Break the Ice. I can use it under my camera, where I'm hitting the little ice cubes. Students are misspelling words, and they get so many bangs with the ice cubes. We [played] Connect Four. With two cameras, the kids feel like they're in the same room with me, I think. It doesn't feel distant at all.

The tutors reported that offering choices also served to engage students in learning during virtual instruction. Participant D identified the critical need to employ practices that engaged students in their own learning. She noted:

It's not always easy to keep their [students'] attention [in a VLE]. Within the context of explicit instruction, what worked really well was allowing students to choose, "Would you like to start with this or that portion of the lesson?"

Participant C gave the example of encouraging her student to write a paragraph about something fun. The student chose to write about a puppy:

"All right, tell me things that you love about having a puppy." And you know, it's like show and tell that has been missing from the pandemic. It's that social-emotional piece, and they love to give me that paragraph.

Participant C further described the importance of engagement for learning. She said:

All kids and adults learn when they're highly engaged; I don't care how old you are. If I'm going to sit here behind a computer screen and just talk to you, if I teach you something new by lecturing to you, I'll bet you get 20% of what I just told you.

Participant C also described the process of engaging students through direct instruction: "Direct instruction during individual tutoring tends to be highly engaging." She noted the interactive nature of direct instruction and explained the process:

> The teacher asks; the student engages, then feedback [is offered], and the teacher asks for a response. There's no time when a student is just waiting their turn, or the students are just staring, or you lose their attention because it's highly engaging.

> Offering positive feedback served an important role in engaging learners in metacognition and learning in the VLE, as described by Participant D:

> I do something called amplifying. If I noticed a student succeeding—mastering a skill—I make sure to pause. And I asked the student to notice, "Do you notice how well you're doing right now?" and "What does that feel like? Let's take a moment to just enjoy that success. That was [a] really difficult skill for you 2 weeks ago, and now it sounds amazing." So, just letting them feel successful. So that when they come to see me, they feel it is a positive experience.

> Participant C included metacognitive practices during online instruction, such as recording repeated readings so that students could practice self-analysis and monitor their own progress. This instructor liked to set a lively pace for instruction. "I don't do any one activity longer than 10 minutes." She summarized the relationship between engagement and learning: "If you get zero engagement, you get zero learning. That's just the equation. Zero times anything is zero, right?"

Preserving Familiar Practices

Establishing and keeping regular instructional routines during online instruction was an important practice that led to a positive VLE. Participant C noted, "Teachers who established

really strong routines have happier students that feel safer." She implemented practices rooted in the evidence-based teaching principles of structured literacy to support student learning that were direct, explicit, systematic, and diagnostic: "I just made sure that, on Zoom, the things [from the regular classroom] that can be kept the same, stayed the same."

Literacy tutors strove to instill a sense of normalcy in the VLE, even when conditions proved less than ideal. High levels of student-teacher interaction occurred in Participant D's virtual tutoring sessions, even when she needed to find creative ways to conduct those interactions. One episode offered an illustration of flexibility while implementing structured literacy practices in online environments. Participant D recalled, "I think the most interesting lesson I had was on a day [the parent and student] showed up in their car. They said it couldn't be helped, and they only had their cell phone." Recognizing the limitations of a tiny cell phone screen, she thought, "What am I going to do on this tiny screen? What can I possibly zoom to the student?" Thinking quickly, the tutor came up with a practical solution:

> I was able to take a fluency drill page that has 60 words and show one word that would fit on the little phone screen. We just practiced fluency word-by-word on the phone because I couldn't post a whole story. They [the parent and student] didn't have any writing materials with them. So, it was odd. We made it work.

Assessment

Literacy tutors continued to monitor and assess student progress and offer immediate feedback to promote growth for learners during virtual instruction. Participant E described the types of questions she asked herself, "Are we increasing words per minute? And most importantly, what's our accuracy? That should be going up. Are we increasing accuracy? Are we increasing that grade level?" She noted, "I don't expect my students with dyslexia to increase

correct words per minute the way that a non-dyslexic would. But are we increasing?"

The analyses of interview transcripts revealed the careful adaptation and implementation of a variety of instructional practices by literacy tutors to continue to support student learning and progress during the pandemic.

Relational Practices

Data analyses of the tutors' interviews uncovered a variety of relational practices implemented by literacy tutors to support learning in VLEs after school closures during the pandemic. Participant E reported, "The need is great, and the resources to assist students and families seem to be too few. I am thankful for every way we get to step in and assist clients on their educational journey."

Technology as a Tool for Building Relationships

Although technology felt like a barrier to instruction at times, it became a bridge for relationship building for the tutors in this study. Participant B stated, "I'm grateful that we have this kind of technology because I fought with Zoom for so long." Participant D noted the familiarity created through virtual visits: "It is really like going into someone's home. There's a tremendous amount of trust; I see your space right now." As she became more comfortable teaching in a VLE, Participant D developed skills to intentionally support students through relational practices:

I became more comfortable with my relational skills online as well. There's just kind of a psychological thing you have to bridge using the Zoom thing. But you know [in a VLE], you and I are sitting here close. And I can see there is still a way for me to kind of feel you through Zoom and connect with you. It's not quite the same, but it's still actually really rich and still meaningful.

Parent-Tutor Relationships

According to the tutors in this study, teaching in virtual spaces during the pandemic altered parent-tutor relationships. Participant A noted the change in relationships with parents from in-person instruction to learning in the VLE: "There was less of a bond with the parents online." Participant A used technology to bridge the gap in communication: "I would often send a text message to a parent afterwards to let them know that their child did really well. That helps because parents were really curious, 'Hey, how'd my child do?'" Participant A supported parents by offering suggestions for resources to support children attending school online. She stated, "There are a lot of resources available for parents online to help support their kids."

Participant D discussed the importance of supportive relationships within professional practice during the pandemic. She explained, "Relationally, I think it [online instruction during COVID-19] brought me close to my students' families. You know, we kind of became an island of survival." During the pandemic, Participant D realized that she "was a source of psychological stability for the small number of families I worked for. And they would call me whenever they felt like they had a snafu, or something was difficult or was a little different than typical."

Participant D also identified anxiety as a difficulty faced by parents and students during the pandemic: "Honestly, at least once a week, a student would burst into tears, or a parent, when they felt overloaded." Participant D became a trusted advisor to parents during this time. Decisions about schooling weighed heavily on parents. She observed, "Families were really concerned about how to navigate their public schools, their online education, whether or not they should stop using public education and go to a charter model." The pandemic impacted every area of life. Participant D noted, "It was very stressful for those families. They're trying to reestablish a rhythm between their work life and school and find something that was going to

work." The demand for professional support was high. Participant D said, "I don't really have an estimate, but I spent many, many hours fielding phone calls from families who weren't my students and also helping my families make those educational decisions." She observed, "That's a role that I hadn't been placed in before—helping families find what would work for this crisis."

Financial concerns influenced some parents' ability to pay for specialized tutoring in literacy during the pandemic. Every tutor in the current study offered scholarships to students in need. Participant C described a situation in which the parent lacked funds to pay for instruction as well as the technology needed to participate in a VLE:

> I offered to work with students for free. During that time, I just said, "I don't want to lose momentum. You [the parent] don't owe me anything." I made sure that both the parent and her children had the proper technology and resources needed to teach and learn in the VLE.

The stressors of living through a pandemic and working, educating, and isolating at home were quite high for students, parents, and teachers. The tutors in this study were intentional about connecting with the students and parents in ways that helped them move forward despite the challenges.

Creating a Safe, Caring Environment

The literacy tutors in this study incorporated important relational practices to demonstrate care for students who struggled with learning in virtual spaces. Participant A shared an example of ways she conveyed empathy and encouraged students: "I had to be really careful to make sure that they knew this [difficulty] was not their fault. This is the computer's fault. You're doing great." Participant C advocated for her students' needs:

> I was determined, even if I had to go buy a Chromebook myself, or a Kindle, or

whatever. If I had to call the district, if I had to call the teacher, I made sure that those kids who needed the technology [to learn online] had it.

Creating time during the lesson to listen to students was another relational practice intended to demonstrate authentic care in a VLE. Participant D recognized the need for this practice:

Students show up on Zoom; I greet them, and it's obvious that something is not going well. I know that the lesson is going to be affected by that. I did take time to see if they wanted to share; let them know that I was a willing ear.

Participant A built in opportunities to check in relationally with her students: "I would make sure that I would take just a few minutes to say, 'Hey, what have you been up to today? What's been going on?' to try and build rapport before launching into the lesson."

Creating a safe environment for learning by building strong teacher-student relationships was a priority for the tutors in the current study. At the beginning of a session, Participant E made time for the instructor and students to get to know each other, a practice that was especially important in small groups. The plan was simple, "We just talk, and then I give them an icebreaker activity." Participant E offered an example of listening as a relational strategy. She asked, "What is something that you don't like? It can be hard to choose something you like, but we can all usually think of something we don't like, especially if we struggle with school." She emphasized the importance of listening to her students and encouraged conversation by suggesting nonacademic topics. These types of low-stakes discussions encouraged students to share with confidence.

Joining class from home added a sense of safety based on familiarity and offered opportunities for communication. Participant E said, "Because they're [students] in the comfort

79

of their own home, they have their pets join us sometimes." Participant C recognized the stress children felt during the pandemic and purposefully implemented practices to support learners in the VLE. She noted, "When you make it fun, it helps create those relationships." Creating a positive environment for learning was an important key to building relationships.

Injecting humor and fun also encouraged positive relationships during online instruction. For example, some students loved games, so Participant B included games as a reward during virtual instruction. She might say, "The goal is to increase your vocabulary so [that] your writing is richer. And then, at the end, we can play these fun games." A different student enjoyed trading Pokémon cards, so Participant B dropped off cards at the student's home in order to continue their tradition of trading cards as a reward.

Participant D continued regular tutoring practices in new ways. Students enjoyed earning rewards when working face-to-face, so Participant D found a new way to continue this highly valued practice: "I mailed reward coupons and dropped off prizes on porches to families and students, and sometimes even birthday presents were mailed! Just little, small things to help get them through this time."

Participant B became pen pals with students and encouraged them to have fun writing friendly letters. When the tutor made a spelling mistake, she laughed with her student and said, "I told you from the very beginning. I'm not perfect. You're not perfect. There's no expectation of perfection." Participant C created humorous moments, as well:

> I use a lot of humor. I'll try to insert things into the direct instruction…. I'll do it [an activity] the wrong way. Because they already know my routines. And they know if I do it the wrong way, they can catch me on it.

The literacy tutors demonstrated empathy with their students and sought to create safe

virtual environments for learning. Participant C described the use of puppets to support learners academically and emotionally:

> My younger students who have struggled and failed, a lot of them have difficulty being vulnerable because they're really close to tears a lot because reading has been so punishing. They will listen to a puppet, and they will read to a puppet, and they will help a puppet learn to read. And you know, that's a reciprocal teaching idea. I have a big collection of puppets, and they all have their special problems needing help from the students. So, it's kind of fun.

Establishing and keeping routines when teaching and learning online also built students' confidence and inspired a feeling of safety. Participant D said, "[Students] like consistency. I just made sure that, on Zoom, the things that can be kept the same stayed the same." Students knew what to do and felt they could succeed. Participant C reiterated: "Building success creates relationships, too." To reinforce recognition of progress, she offered

> a lot of praise, and not just hollow praise. I think a lot of teachers accidentally praise students for maybe who they are, which is okay. You can say, "You're a really hard worker"; [however,] you've got to associate it with something that feels real to the student.

Another key relational practice the tutors used frequently was an attentive observation of the tutees. Participant E asked herself, "What is their body telling us? If their camera goes up, maybe they aren't wanting to be looked at right now. What's going on?" Noticing students' behaviors and gleaning information from body language and facial expressions took careful attention in the VLE. She continued, "It's just noticing what's going on with my students, as far as their demeanor." Even though the format was new, Participant E noted, "I think I've always

81

had to monitor that emotional piece." This requirement took on new importance during the pandemic. Participant E concluded, "We have to get to know each other; we have to make it a safe learning environment."

Faced with a plethora of challenges during the pandemic, the participants in this study expressed the importance of identifying a sense of purpose. Participant B stated, "I think God just showed me what was really important. God works outside of a virus. And He had called me to a work of building relationships with these students who were in this really, really hard place." Participant C expressed her commitment to serve: "It's just part of my mission. I believe in educational equity. And when I see a student who isn't being served, and they're profoundly affected by a learning disability, I can't just look the other way."

Tutor Self-Care

Reflecting on relational practices in the VLE also led the participants to consider their own personal well-being. Participant D explained, "I felt burnout for the first time. I really had to evaluate how I'm operating as a person. My year goal has been to become more balanced and [develop] a little more self-care." Participant D was so busy serving others that she neglected herself. She explained,

> Relationally, I felt like I couldn't break down because I didn't get to break down. I didn't get to process COVID until just this past August. It is a really interesting psychological feeling. I'm sure teachers all resonate with that because teachers were doing so much. You can't fall apart if people need you.

Participant A noted that teaching all day in a VLE was physically taxing. She stated,

Virtual instruction is hard on me physically. I had to get a standing desk. I had to stand on

a wobbleboard. I get sleepy with virtual instruction. Myself personally, it makes me

sleepy. And so, I had to come up with strategies to stay awake.

Participant E reflected positively on her experience teaching in the VLE during the pandemic.

She found,

What brings me joy, as a teacher, is to be able to design some meaningful instruction.

Yes, I can address those standards, but I can do it in a meaningful, connected way. So that

students really see these connections that I never saw as a student.

Themes

Qualitative analyses of the individual cases were followed by cross-case analyses to

identify themes that "capture the patterns that occurred across the cases" (Merriam & Tisdell,

2009, p. 207). Three themes were identified in this study: adapting instructional practices to

virtual contexts, caring for students and families, and reflecting on professional practice. These

themes and corresponding subthemes, shown in Table 7, are presented in detail in the paragraphs

that follow.

Table 7

Themes and Corresponding Subthemes

Theme	Description	Corresponding Subthemes
Adapting instructional practices to virtual contexts	Changes made to instructional practices during a crisis to serve learners in a VLE	• Adapting to a VLE • Adapting to new curricula • Adapting face-to-face instructional practices for implementation in a VLE
Caring for students and parents	Practices that demonstrated care for students and parents during the pandemic	• Creating safe and caring environments for learning • Using technology as a tool for building relationships • Offering emotional and practical support to parents
Reflecting on professional practice	New insights gained from examining and learning from the experience of teaching in the VLE during the pandemic	• Reflecting on instructional practices • Reflecting on the use of technology • Reflecting on student well-being • Considering self-care for sustainable practice

Note. VLE = Virtual learning environment

Theme 1: Adapting Instructional Practices to Virtual Contexts

The theme of adapting practices to a virtual context was revealed through direct statements and inferred from the examples offered by all five participants. Though the experiences of each participant were unique, a common thread of the need to adapt was evident in the data.

The most obvious change occurred when instructors shifted to reliance on technology for instruction during the rapid and unexpected transitions during the pandemic. Three of the

instructors related tales of seamless transitions to virtual spaces based on prior experiences teaching in a VLE. Participant C offered an example of one lesson presented in a VLE:

> I love using Zoom. Say, I'm teaching syllabification. One of the [objectives] is to learn how to break a multisyllable word down into its syllable parts. They [the words] tend to be words that young kids don't know. They [students] love it when I can open a window, share my screen with them, and go to dictionary.com. And it [the definition] says the grade level, and some of the words that they're syllabicating and reading are at maybe post college level. And they love it! It's highly motivating. "Look at me; I just read a post college level word!"

Prior experience in Zoom and facility with technology supported a positive view of the VLE. Participant E said, "I think it was a really smooth transition for the pandemic because I'd already had experience with these materials and was using them."

All of the participants met the challenge of implementing instructional practices consistent with the principles of structured literacy as they adjusted to teaching and learning in virtual environments. Participant B stated, "I truly believe that having good curriculum is everything." All the tutors reported discovering new curricula and methods for online reading instruction. Participant A relied heavily on the digital versions of published curricula.

Faced with the reality of the need to purchase expensive curricula, Participant E was pleased to receive the digital format for assessment materials from a publisher at no cost: "Pearson Learning came out with 'You can do this remotely. And we're going to give you access.' Whatever you have purchased, you have access to their digital format." This unexpected gift helped Participant E to adapt to virtual monitoring of student progress using a familiar assessment tool.

Participant C delivered instructional materials to students' homes so that they could participate in multisensory learning at a distance:

> All of my kids get a string backpack that's got a whiteboard and answer board. They get markers to move. They get their tap mats. They can write. They can move their markers. They can move their letters. They get tap mats where they pound and tap sentences and words or sounds and words.

Participant E adapted curricula and games to engage students and support learning in the VLE. She readily shared these resources with other instructors and parents. Participant E summarized the mindset shared by all five tutors: "I just had to be much more intentional about how I was developing things."

As the participants gained experience in the VLE over time, the benefits of adapting to learning in a VLE became more apparent. For example, the ability to serve more students was noted by Participant C: "I can serve more students, but I don't have to drive to different people's schools or houses." Participant D identified a benefit for families: "The families have found [online teaching and learning] made their life a lot easier, especially if they're not driving 30 minutes to get to me." Participant E personalized the emotional benefit of the VLE for learners by sharing the experience of a student for whom school was particularly punishing: "For this student, at-home learning and virtual learning was better. Because it didn't provide the stress, she [the student] talked about how much more she liked school, doing it at home."

Every tutor in the study mentioned the need for more highly qualified tutors and pointed out the benefit of remote learning for serving learners in rural areas, in areas with few or no specialists, or for serving learners with unique needs. Participant C described a situation in which virtual learning had the potential to meet the challenges:

One of the things I learned about virtual learning is it has flexibility. Right now, I have a family waiting [for services] whose child is in remission from cancer. And you know, there's a lot of students who aren't being served very well by public schools that have fatal diseases or ongoing health problems. And just sending a textbook home for mom and dad to teach them the content isn't really equal [education].

Participant A pointed out, "Now I can take more distant learners, whereas before, I would not have thought of considering having distant learners."

Theme 2: Caring for Students and Parents

Throughout the interview transcripts, all the tutors provided evidence of authentic caring and support for the students and parents they served. These actions influenced the development of strong relationships that sustained students and their families in a time of crisis.

Each participant in this study described the implementation of practices to build connections with students. Participant B described "relational conversations" as opportunities for students to share thoughts and feelings. She said, "God put this on my heart to connect with these people. I'm going to keep doing it." Participant C asked questions to show authentic care for her students. She asked one of her tutees to name three things they were looking forward to doing on the weekend. She described the student's response: "And the student would sit there, and they had face-to-face time, where they felt like somebody [besides] a parent in their home cared about them. Their teacher cared about what they were excited about."

Participant E recognized the students' need to be heard and affirmed. Regarding online instruction in the regular classroom during daytime hours on weekdays, she pointed out, "I knew that they were being talked at [lectured], through a computer [Zoom] in whole group [classroom-based] instruction."

Attending to students' interests demonstrated care. Participant C shared an example that revealed the deep need for connection felt by one of her students:

I said, "Try to think about a day that would be the most fun you can think of. What would you do? What would you do on the most fun day of your life?" And he said, "I would go to school. And I would be with my friends." I just wanted to cry when he said this. The student continued, "And we would plan a party, and everybody would be there." It just brought tears to my eyes; he was an only child. You can imagine—just like a little third grader. The most fun that he could think of was being back in school and being with friends and planning a party. So that's how you create relationships. At least, that's how I do.

Some of the tutors delivered prizes to students' homes to encourage them. Participant D mailed coupons and small items as rewards to encourage and motivate students. Participant B also delivered prizes to students' homes. Describing a particular instance, she said, "I wanted to keep up a meaningful relationship with this one kiddo. We had made so much progress in getting him out of the trauma of being forced to read in a way that he couldn't. Pokémon became everything to him."

All five literacy tutors acknowledged the growing need to care for parents during the pandemic. The tutors singled out communication as a key element of parent-teacher relationships. Teaching in the VLE tended to limit natural opportunities for conversations. Participant A described the difference between face-to-face and online interactions and connections:

There was less of a bond with the parents online because they wanted their children to get the full hour, you know, and sometimes the parents would be in the background with one

ear listening to the whole thing so they could see what was going on. But when they [parents] were in person, they liked to come in [to the office] and say hello. And they like to check out a physical book or say, "Hi," or just build more of a relationship and a bond with those parents than when they [students] were just online, for sure.

Technology served to enable tutors to communicate with parents to further develop relationships. Participant A stated, "I would often send a text message to a parent afterwards to let them know that their child did really well." Participant C said, "I send regular reports to parents and say, 'Okay, so here's where we were; here's your snapshot.'" Participant D used text messages "to try to keep communication going." She said,

I found [texting] to be really efficient. They [parents] weren't overwhelmed by getting a lot of emails from me because they [parents] were already getting a lot of emails from school. They could see really quickly how that [session] went.

The literacy tutors reported that parents relied on the tutors' expert advice in making comprehensive decisions about their children's education during the pandemic. For example, Participant E described a parent's expressions of being overwhelmed by the task of managing her child's schoolwork while navigating the school district's remote educational platforms and the teacher-created learning modules: "Mom just didn't know what to do with them [the teacher created learning modules]. Basically, I'm coaching the mom once a month. 'Okay, what can this month look like?'"

Many students were expected to complete asynchronous learning modules as part of regular classroom instruction during the school day in addition to online tutoring sessions. Participant D noted, "Most of my parents were struggling with how to get their students through the large amounts of curriculum that was being posted and get their [the parents'] work done at

the same time." Participant D recalled helping parents prioritize regular classroom-based work:

> We would take a look. What were the children being asked to do? And we just made decisions about what could be let go of and what was important. Not to disrespect the public school system, but just hold it lightly. This is an unusual year, and your student's learning goals may be on your IEP. So, let's focus on these.

Participant C advocated for students on the parents' behalf as she became "not only their advocate for technology but also their advocate for making sure that the IEP was being followed." She stated, "I also attend [virtual] IEP meetings and 504 plan meetings." Participant B summed up the situation, "I'm here to support them, and they just look stressed out."

Theme 3: Reflecting on Practice

Analyses conducted across the cases generated the theme of the tutors' reflections on professional practice. Reflection led Participant B to identify struggles with technology when teaching in a VLE. When talking about writing instruction, she said, "Some kids needed help that I couldn't support through this technology. And writing was that for sure." She identified the problem: "I was trying to get myself up to speed with Zoom and how to be able to do the writing that I wanted to do on a screen with this funny, you know, with a mouse or whatever." She asked a family member to help her practice in Zoom:

> I asked my husband, "Hey, go downstairs and Zoom with me because I want you to tell me if what I'm doing is backwards to you." Right? That's super important, especially with kids [with dyslexia] who already write B's and D's backwards.

The participants in this study routinely reflected on the efficacy of instructional practices and curricula. Participant A identified the difficulty some students had hearing discrete sounds over the computer. She modified her instruction by focusing on speaking loudly and enunciating

clearly. She found, "I had to make sure they watched my mouth because they couldn't rely only on their ears. They had to watch, look, and listen the whole time."

Participant D reflected on prior experiences of teaching in a VLE to plan and prescribe instruction for individual learners in online tutoring sessions. She described her practice: "I'm looking at a brand-new student who I just on-boarded. I just gave her an [online] assessment; just now, I was planning my instruction for her. So, I can prescriptively fill those holes and put those pieces together."

The literacy tutors in this study applied reflective practices to face situational problems. For example, Participant B realized students needed a break from [computer] screens and described a particular instance:

> One student in particular has four siblings [in school]. So, mom's trying to manage four kids and the toddler. Four kids and their learning environments. Do they even have enough bandwidth to support all that technology? And parents, for the most part, were very concerned. And so that's when I just said, "Okay, I'm pulling the plug on this. I need about a 2-week reset to rethink what I'm doing here because this isn't working for your kiddo."

The tutor recognized the need to pause and reflect before modifying her practice. Participant E also identified a situational difficulty, took action, and evaluated the outcome. When speaking about the nonprofit she founded, Participant E said,

> Our mission is to make it [tutoring] accessible to everyone. But there's just, there's not enough people [tutors] to meet the need. And so, if we can replicate it, and then take a tool and make it your own to fit the needs of your student, your [influence] is huge.

After identifying the need, Participant E created learning modules, which she shared with other

instructors. She also added small group classes for tutees who needed to practice similar skills.

Participant E continued the cycle of reflective practice by evaluating the efficacy of the changes she made. She noticed that one student was struggling in a small group, so after reflecting and "talking with mom, we're actually removing him from the small group class right now. And I'm going to work with him one-on-one."

Several participants identified problems related to working in a VLE and implemented a reflective practice model to guide their own personal self-care. Participant A described a physical problem and the modification she used to address the problem: "Virtual instruction is hard on me physically. I had to get a standing desk. I had to stand on a wobbleboard." Participant D said, "I felt burnout for the first time. I really had to evaluate how I'm operating as a person. And my year's goal has become balance and a little more self-care." Reflecting on practice through the lens of self-care was seen across all five cases.

The interviews conducted for this collective case study yielded rich descriptions of the tutors' experiences while supporting learners with dyslexia in a VLE. The three themes identified in this study provided substantive information to guide future developments in individualized instruction in online environments.

Evidence of Quality

The current study met the criteria Creswell and Poth (2018) described for evaluating case studies: clear identification of the boundaries of the cases, a rationale for the selection of the cases, detailed descriptions of the cases and their contexts, articulation of the themes identified across the cases, interpretation of ways the cases provide insight into the field of practice, and embedded reflexivity throughout the study. The researcher recognized her background and experiences and the ways her point of view shaped her research design decisions and the

interpretation of the results.

The researcher implemented case study design principles to examine a single research question: What instructional and relational practices did literacy tutors implement to support learners with dyslexia in a VLE during the COVID-19 pandemic? The researcher acknowledged the role her experiences, biases, and values played in every aspect of the study and practiced evidence-based strategies to reduce misinterpretation of the data. The boundaries of time and place in this study were clearly defined and described. The collective case study revealed the perspectives of five expert literacy tutors through in-depth, semi-structured interviews. The researcher immersed herself in the data while conducting within-case and across-case analyses. Attending to the voices of the participants and reflecting on their lived experiences led to the identification of overarching themes. The researcher interpreted the experiences and reflections of five literacy tutors to relay a story of professionalism and service by describing and contextualizing the instructional and relational practices implemented to support learners with dyslexia in a VLE during the COVID-19 pandemic.

Summary

The purpose of this qualitative collective case study was to examine the instructional and relational practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. Five expert literacy tutors shared their practices in individual, semi-structured interviews. Within-case and across-case analyses of the interview transcripts resulted in rich descriptions of the individual cases and cross-case themes. Three themes emerged from the data: adapting instructional practices to a new context, caring for students and parents, and reflecting on professional practice. A discussion of the results follows in the next chapter.

V. DISCUSSION

The purpose of this qualitative collective case study was to examine the instructional and relational practices expert literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. This chapter includes a review of the theories that formed the foundation for the research study, a brief description of the methods of data collection and analysis, an overview of the results and their implications, and recommendations for future research.

Theoretical Frameworks

Two theoretical frameworks guided the current study and shaped the beliefs of the researcher: Vygotsky's (1999; Vygotsky & Cole, 1978) social constructivism and Chall's (1983) developmental stages of reading. Vygotsky studied the cognitive and linguistic development of children and the role MKOs play in teaching and learning: evaluating a student's learning needs; planning targeted interventions; and providing direct, systematic instruction to support learning. Chall's (1983) research culminated in a six-stage model of reading development and explained the need for mastery of the skills described at each discrete, hierarchical stage. Chall's model of typical reading development enabled researchers and practitioners to recognize atypical reading development to diagnose difficulties and plan support for struggling readers. Both Vygotsky and Chall described the role of the teacher, the need for explicit and prescriptive instruction, and the critical role that language development plays in reading acquisition and development. This

collective case study explored the practices of expert literacy tutors as they worked to support learners with dyslexia in a VLE during the pandemic. The theoretical frameworks shaped the research question and informed the analysis and interpretation of the data.

Methods of Data Collection and Analysis

After receiving approval from the Institutional Review Board at Southeastern University, known expert literacy tutors were recruited to participate in the research study via email (see Appendix A). Eight tutors volunteered to take part in semi-structured interviews conducted on Zoom. The participants provided background and demographic information by completing an intake form prior to the interview (see Appendix C). The interviews consisted of five open-ended questions (see Appendix D) and lasted no longer than 60 minutes. The interviews were recorded, and the audio files were uploaded to the Otter.AI application for transcription. Five interviews were selected for data analysis based on the participants' level of education, quality of accreditations or certifications, years of teaching experience, and richness of the interview data. The researcher validated each transcript by checking the written transcripts against the audio recordings and correcting transcription errors. A clean copy of each transcript was shared with each participant prior to data analysis for review and comment or correction. Transcripts were labeled with pseudonyms. The researcher conducted multiple readings, coded individual transcripts, and conducted cross-case analyses to determine common themes related to the research question.

Discussion by Research Question

The current study focused on one research question with two distinct parts: What instructional and relational practices did literacy tutors implement to support learners with dyslexia in virtual environments during the COVID-19 pandemic? The interviewees described

the instructional and relational practices they used to support learners and reflected on the

lessons learned from their experiences. Cross-case analyses of the interview transcripts

uncovered three primary themes: adapting instructional practices to a new context, caring for

students and parents, and reflecting on professional practice. Lessons learned from the interview

analyses are discussed in the sections that follow.

Instructional Practices

Prior Experience

Each of the experienced tutors who participated in the study was an expert in literacy

instruction and highly trained to work with learners with dyslexia. The tutors' extensive

knowledge of reading development, reading curricula, and years of experience working with

struggling readers helped them facilitate the transition from face-to-face supplementary

instruction to online teaching and learning during the COVID-19 pandemic.

Previous research studies (Chall, 2000; International Dyslexia Association, 2020; Moats,

2020; Stallings et al., 1975) identified successful instructional practices for teaching reading and

advancing reading achievement, especially among struggling readers: systematic, code-based

reading; direct instruction with high levels of student-teacher interaction and immediate

feedback; praise and correction; small group instruction; multisensory strategies; and

comprehension and extra time spent interacting with print. Each of the participants in this study

identified research-based practices as the foundation of their work and described the efforts they

made to translate effective face-to-face interventions to a VLE.

The tutors' prior learning and experience with technology and online delivery models

were critically important factors that enabled the literacy instructors to quickly adapt to teaching

in a VLE. Three of the tutors stated that the transition to the VLE was relatively seamless; two of

the tutors described initial challenges, particularly when using Zoom. The participants in this study worked hard to anticipate and plan their approach to tutoring online. They improvised and adapted to meet the individual learning needs of their students in virtual environments. Over time, the tutors' expertise using digital tools expanded and improved as they creatively experimented with digital books, games, document cameras, and other digital tools. The experiences recounted by the five participants in the current study confirmed the importance of teacher knowledge of reading development, experience in working with struggling readers, and expertise in adapting curricula and instructional practices to support student learning in a VLE.

After moving to online tutoring, each participant in this study continued to provide systematic, cumulative, and diagnostic instruction with a high degree of student-tutor interaction. Four of the tutors were confident in their ability to set realistic learning goals, engage learners in online instruction, and prioritize and monitor progress in a VLE. One of the tutors expressed frustration with virtual learning, difficulty overcoming technological barriers, and a sense of lost connection to the learner. Despite the difficulties, the tutor persevered to meet the needs of her tutees and returned to face-to-face instruction as soon as the state's school closure mandate was lifted. Working with new technologies and digital curricula created both challenges and opportunities for literacy tutors, confirming that prior experience and expertise influenced their ability to be creative and flexible when teaching.

Multisensory Engagement

The importance of multisensory engagement and practices to encourage reading development has been broadly researched (Bøg et al., 2021; Giess et al., 2012; Magpuri-Lavell et al., 2014). The participants in this study noted the vital importance of utilizing multisensory strategies for learning and the difficulties of supporting multisensory practices in a VLE. For

example, the tutors were especially mindful of the need for auditory and visual clarity when working with readers with dyslexia during virtual instruction. These expert tutors carefully planned tactile and kinesthetic engagement activities within the VLE. By providing access to the necessary physical materials in the home and incorporating appropriate digital curricula and technology online, expert tutors created opportunities to engage their students' multiple senses for learning.

Content and Pedagogical Knowledge

Content and pedagogical knowledge have been shown to increase teachers' self-efficacy in teaching reading (Bernadowski, 2017; Collie & Martin, 2016; Granziera et al., 2019; Leader-Janssen & Rankin-Erickson, 2013). The automaticity developed through teaching experience, coupled with pedagogical expertise, enabled veteran tutors in this study to adapt instruction when faced with unexpected changes during the pandemic. The expert literacy tutors demonstrated the ability to adapt instructional practices to virtual spaces to advance student learning and progress during a lengthy period of online instruction. Four of the literacy tutors reported confidence in their ability to continue to deliver high-quality instruction regardless of the delivery method.

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Relational Practices

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Many research studies have demonstrated the importance of positive TSRs to promote students' academic progress and emotional development (Cornelius-White, 2007; Ewe, 2019; Sabol & Pianta, 2012). Strong, positive TSRs foster students' motivation to learn, engagement in learning, and willingness to persevere when learning tasks are challenging (Aspelin et al., 2021; Nielson, 2011). TSRs are especially important when working with students who struggle to read. The participants in the current study freely shared their experiences and strategies for developing positive relationships with both parents and students during an especially difficult period in

educational history. The various strategies and efforts revealed the commitment of these educators to maintain strong relationships with students and families within virtual environments.

One of the five tutors in the current study reported the need to adhere to routines and procedures to create a sense of safety for the learner; she was intentional about making online instruction as similar as possible to face-to-face, personalized instruction. The same instructor emphasized the need to offer authentic praise to students for both progress and effort.

Another tutor described written and oral language activities designed to elicit students' feelings about the pandemic, online education, and the isolation felt by her students during the pandemic-related school closures. In one especially poignant tutoring session, a student wrote about his longing to be back in school to celebrate his birthday with all his friends.

The participants in this study noted the challenges of helping students to stay engaged during virtual instruction. Several of the tutors reported the need for multiple brain breaks during the tutoring sessions, especially because regular classroom-based instruction was also delivered online, a circumstance that necessitated hours in front of a computer screen.

Noddings's (2012) research on the importance of listening for building strong TSRs was reflected in the tutors' efforts to carefully listen, monitor, and respond to the student's emotional cues during virtual instruction. In some cases, the tutees were so overwhelmed that tutoring sessions had to be postponed to reduce the child's stress or suspended for a period of time to allow the student to re-engage with the material. Brain breaks were especially helpful in those situations. All of the tutors reported their efforts to create a sense of fun in each lesson and to motivate learners to continue working hard to achieve their learning goals.

The tutors related numerous examples of expressing authentic compassion, empathy, and

service for both students and parents during tumultuous times. For example, one of the tutors offered to continue to provide instruction to a pair of siblings after the parent reported the inability to pay the tutor's fees due to work furloughs during the pandemic. Another tutor went to the local school district's administration to acquire the hardware and software necessary for one of her students to continue learning online. Several of the tutors reported dropping off notes, progress reports, and rewards to their students' homes to encourage student engagement and to maintain communication with the parents. One tutor donated time as a consultant to her regular clients and to families who were not clients to share strategies for navigating the local public school's online learning system and to advocate for IEP support and testing from the school district. Relational competence (Aspelin, 2017) was strongly evidenced by the literacy tutors in this study. They thoughtfully implemented research-based practices and relied on their prior experience and expertise when working with children to build positive relationships with both tutees and their parents.

Discussion of Themes

Theme 1: Adapting Instructional Practices to Virtual Contexts

Each participant identified the need to adapt as described by three recurring subthemes: adapting to the VLE, adapting to new curricula and digital tools, and adapting face-to-face instructional practices for implementation in a VLE. The COVID-19 pandemic created a crisis in education that required literacy tutors to shift instruction from physical classrooms to virtual spaces with little training or transition time. Tutors quickly discovered and implemented new technologies, curricula, and practices while working to maintain the same level of support offered when teaching in a physical setting. Throughout the pandemic period, these tutors continued to adapt and evolve their instructional practices to meet the needs of learners. Expert

literacy tutors functioned as MKOs who adapted to new formats and implemented research-based strategies for instruction and assessment to support learners with dyslexia. Prior experience teaching in a VLE and using digital tools enabled four tutors to smoothly transition during a chaotic time, while one tutor struggled with the change due to limitations arising from a lack of experience and prior knowledge of technology.

Ward (2022) found similar responses in the descriptions of middle-school science teachers as they acclimated to teaching and learning in digital environments, noting that teachers with limited experience with technology struggled to adapt. The current study adds to the body of literature on teacher adaptations during the pandemic by clearly affirming the value of content, pedagogical, and technological expertise for empowering adaptation to meet learners' needs regardless of circumstances or delivery methods. The participants' responses also pointed to the need for ongoing training to support teachers' continuous improvement as they navigate new technologies.

During data analysis, face-to-face instructional practices that required adaptation for implementation in a VLE became evident. According to the tutors, direct instruction, gamification, and rewards encouraged students to participate in the tutoring sessions and to persevere through difficult tasks. The tutors also demonstrated creativity and ingenuity when incorporating multisensory strategies for learning. Both digital and physical tools were used by the tutors to engage students' multiple senses. Monitoring progress and designing instruction within the students' zone of proximal development (Vygotsky & Cole, 1978) depended on ongoing assessment. Every tutor in the current study mentioned the challenge of assessing student learning in virtual environments. Consequently, each of the tutors identified strategies and created opportunities for learners to make thinking and skill development visible and

measurable. Regardless of the context for instruction, expert literacy tutors adapted key curricular and instructional practices to further student learning, echoing the findings of prior research related to teacher expertise and adaptability.

Theme 2: Caring for Students and Parents

The literacy tutors in this study recognized the need to care for students and parents in new ways during the pandemic. Subthemes identified through data analysis included creating safe and caring environments for learning, using technology as a tool for building relationships, and offering emotional and practical support to parents. As expected, the positive (safe and caring) environments for learning encouraged by warm teacher-student relationships also supported learning in virtual environments. Using technology as a tool for building relationships was a surprising revelation to the literacy tutors. The transition to virtual learning was challenging for one participant, yet she identified the blessing of technology for building and maintaining connections. Two of the tutors reported that virtual instruction was surprisingly similar to face-to-face tutoring and was, in fact, easier to conduct than previously believed. Each of the tutors in the current study practiced new means of communication with parents, utilizing digital tools such as texting to develop and maintain strong parent-teacher bonds. Additionally, the participants in the study offered emotional support and professional guidance to parents.

Some children felt isolated during the school closures; to ameliorate this feeling, the tutors intentionally included regular opportunities for students to share their thoughts and interests so that the students felt heard and known. The tutors reported that an unexpected new intimacy between tutors, children, and parents developed during the pandemic. Virtual meetings opened students and tutors into home settings and normalized casual interactions. Previously, tutors attempted to maintain a level of formality when conducting tutoring sessions face-to-face

in a clinic or professional space.

Research affirms the importance of positive teacher-student relationships for learning, particularly for students with special needs (Ewe, 2019; Nielsen, 2011). Interview data revealed that the cultivation of caring relationships during the pandemic yielded positive results and inspired tutors to continue new, effective relational practices, whether in physical or virtual spaces.

Theme 3: Reflecting on Professional Practice

Research supports critical evaluation of teaching and learning through a cycle of reflection (Cruickshank, 1985; Dewey, 1933; Mohamed et al., 2022) to develop and enhance teachers' expertise and use of effective instructional and relational practices. In general, cycles of reflection are described as reflecting on a problem or practice, planning for future action, executing the action plan, and evaluating the outcomes. The cycle is iterative and is continuously used to improve teachers' practice. In this study, the literacy tutors' interviews provided evidence of reflection on their own practice as they navigated the VLE for an extended period of time during the pandemic. They discussed subthemes of reflecting on instructional practices, the use of technology, student well-being, and reflecting on the need for self-care for sustainable practice.

Each participant in the study provided examples of a reflective practice cycle as they evaluated the implementation of instructional practices following the sudden shift to virtual learning. According to the tutors, effective virtual instruction, in particular, required reflection on the efficacy of the curricula, strategies for promoting student engagement during instruction, and the use of virtual technologies to support their learners. The tutors identified modifications to curricula and instructional strategies to improve instructional outcomes for individual learners

103

and then executed and evaluated an instructional action plan. Whether tutoring sessions went well or did not go well, the tutors continued to adapt and refine instruction. The cyclical process of reflection was reproduced as educators focused on their students' well-being and their own self-care needs.

The pressure of a crisis situation during the pandemic prompted the participants to consciously or unconsciously implement this cycle of reflection to improve outcomes in new teaching and learning environments. One of the tutors used reflective practice to identify the need to reduce the number of hours she was teaching. When she changed the number of hours she taught, she stated that she was able to work more efficiently and effectively. The experiences of the participants in the current study pointed to the power of the intentional implementation of a cyclical model of reflective practice to guide teachers in purposeful, critical reflection.

Implications for Future Practice

The purpose of this study was to identify instructional and relational practices implemented by literacy tutors to support learners with dyslexia in a VLE during the COVID-19 pandemic. Listening to the voices of the expert tutors who participated in this qualitative collective case study and learning from their experiences led the researcher to suggest implications for future practice.

Implications for Teacher Preparation Programs

Researchers at Harvard and Stanford Universities used National Assessment of Educational Progress (NAEP) data to create *The Education Recovery Scorecard* (Center for Education Policy Research, Harvard University, & The Education Opportunity Project, Stanford University, 2023), a tool to compare reading proficiency levels and to report declines in reading by districts and subgroups nationwide. Importantly, time spent in remote learning environments

was included in the data set. The conclusion of the researchers was that the longer schools were closed, the greater the learning loss (Patrinos, 2023). The context of the current study dealt with literacy tutors operating in Oregon, where most schools closed for face-to-face learning for approximately 1.5 years.

Post-COVID-19 analyses of reading assessment data reflected statistically significant learning losses for students in Oregon across all demographic groups (NAEP, 2022). Learning gaps for specific populations became evident in the results of state-level English language arts testing (reading and writing) conducted in 2022 (NAEP, 2022). Data reported by demographic groups for all grade levels revealed that 16.3% of students with disabilities demonstrated proficiency in reading and writing (Oregon Department of Education, 2022a). To strengthen reading instruction to support overall student learning, the Oregon Department of Education released *Oregon's Early Literacy Framework* (Oregon Department of Education, 2023). This document is a foundational resource that describes excellent literacy instruction based on the science of reading to meet the needs of all learners, particularly focal student groups (i.e., students of color; students with disabilities; emerging bilingual students; students navigating poverty, homelessness, and foster care; and other students who have historically experienced disparities in schools).

Ellis et al. (2023) and Serry et al. (2022) published recent research indicating that graduates of teacher education programs do not feel prepared to teach reading to learners with special needs. To meet the challenge of remediating reading loss during the pandemic, school closures, and virtual teaching and learning, teacher preparation programs can learn from expert literacy tutors. The real-world examples of adaptability found in the descriptions provided by expert literacy instructors in this study made evident the importance of strong content and

pedagogical knowledge to enable teachers to identify and meet the needs of a variety of learners within the classroom.

In addition, teachers' self-efficacy beliefs related to teaching reading are influenced by content knowledge and experience in reading instruction (Leader-Janssen & Rankin-Erickson, 2013). All teachers need to understand and promote skilled reading development comprehensively; they should be able to identify the specific needs of a reader who struggles; and they should have the skills to design, implement, and evaluate effective interventions to support learning (Chall, 1983; Moats, 2019). Teacher preparation programs have a responsibility to prepare preservice and in-service teachers with the content and pedagogical knowledge that will enable them to teach all learners to read, regardless of the delivery method.

To ensure that teacher education programs effectively inculcate reading instruction practices rooted in the science of reading when working with students with dyslexia, teacher preparation programs should conduct comprehensive program reviews to assess course offerings and examine course content using the standards from the International Dyslexia Association's (2018) *Knowledge and Practice Standards for Teachers of Reading*.

In addition to embedding principles of structured literacy and research-based practices in courses, opportunities for specific reading practicum experiences should be mandated. The inclusion of video observations of expert instruction followed by evaluation and discussion would enrich preservice teachers' understanding of the strategies for instruction and evaluation employed by expert reading teachers (Gallant & Schwartz, 2010). Teacher candidates should critically review reading curricula. Instructional practices not aligned with the science of reading should be identified and eliminated with the help of curriculum evaluation tools such as those provided by The Reading League (2023).

Finally, teacher preparation programs must employ a common instrument to assess preservice teachers' knowledge of reading (i.e., content knowledge, pedagogical knowledge, and application in context) as a tool for evaluation and goal setting for professional development. They must produce graduates who are well-versed in the science of reading, equipped to teach effectively, and prepared to diagnose and meet the needs of diverse learners.

Implications for Virtual Tutoring

The results of the current study revealed that experience in teaching and learning in a VLE, familiarity with digital curricula, and confidence in the ability to effectively employ digital tools enabled literacy tutors to continue to support learners with dyslexia in online environments. Through both positive and negative experiences, the participants in the current study recognized the importance of training and practice with technology to teach effectively in a VLE. During the pandemic, educational publishers created digital supports and new technologies to help teachers continue to provide effective reading instruction online. Tutors who are interested in continuing instruction in virtual spaces should pursue further training and practice with digital tools to improve their ability to provide engaging and effective instruction in a VLE.

Another benefit of tutoring in a VLE is the potential for tutors to expand the reach of their services. Several participants in the study reported the benefit of an online schedule for streamlining appointments and minimizing wasted time. Teaching in a VLE also expanded one of the tutor's practices geographically, allowing her to meet the needs of students who might otherwise lack access to expert instruction. This experience might be replicated effectively in rural areas or among hospital/homebound students.

Implications for Reflective Practice

The current study revealed the importance of reflective practice for teaching professionals and pointed to actions educators could take to be intentional about developing effective routines and time for reflection that inform professional practice. The participants' experiences echoed the model for reflective practice presented by numerous researchers (Cruickshank, 1985; Dewey, 1933; Mohamed et al., 2022). In the current study, the tutors employed a cycle of reflection, modification, and action in specific ways, whether technical, situational, sensitizing, or problematizing. Intentional consideration of the various facets of professional practice led the tutors to quickly and clearly define a problem, select a research-based modification, implement the new practice, and continue the cycle of intentional professional and personal development.

By systematizing reflection, educators can be intentional in their efforts to develop their own professionalism. Teachers should consider formalizing reflective practice. From instructional decisions to self-care, educators can benefit from considering experiences in the context of a cycle of reflection. Keeping a journal or implementing graphic organizers could help to record observations in order to track modifications and monitor progress over time. Developing a habit of regular, rigorous reflection has the potential to elevate professional practice for all educators and to promote student learning.

Study Limitations

Although this qualitative collective case study generated rich data about the experiences of five expert literacy tutors who supported learners in a VLE during the COVID-19 pandemic, the small sample size limits generalizability to other literacy tutors. Another limitation can be seen in the constitution of the sample; the participants who volunteered for the study were all

females with several decades of teaching experience. As such, the participants do not necessarily represent the lived experiences of male tutors or tutors with less training or experience. Further, the study was bound by time due to its focus on the specific period of school lockdowns due to the pandemic. The data collected through interviews reflected the recollections and perspectives of the individual tutors and did not include formal measurements of program efficacy. Finally, although the researcher bracketed her strong views about the efficacy of individualized structured literacy instruction, it is worth noting as a limiting factor the particular lens through which the researcher designed the study and analyzed the data.

Recommendations for Future Research

The current collective case study research presented an in-depth understanding of a unique bounded system that cannot be reproduced. However, the results of the study suggested several avenues for further research. Each theme derived in this study could form the basis of future studies.

For example, content and pedagogical knowledge and teaching experience promoted the tutors' adaptability in providing reading instruction for learners with dyslexia during unusual circumstances. This type of adaptability could be explored by assessing teacher knowledge, surveying teachers to measure self-efficacy beliefs toward teaching reading using different delivery models, and observing the instructional behaviors and actions made by tutors at the moment during instruction.

A mixed methods study might include the use of a valid and reliable instrument for assessing teacher knowledge of typical and atypical reading development, such as the Knowledge and Practice Examination for Effective Reading Instruction (The Center for Effective Reading Instruction, 2019). Self-efficacy for teaching reading could be measured with an

instrument such as Tschannen-Moran and Johnson's (2011) Teachers Sense of Efficacy for Literacy Instruction. Data could be collected during multiple observations of each instructor during authentic reading instruction at different ages and grade levels. Including multiple sources of data would address a limitation of the current study, which relied solely on interview data.

A quantitative study designed to measure content area teachers' knowledge of reading development and their understanding of the role content area teachers play in supporting language comprehension and the development of reading skills at various grade levels would generate data to support the creation of professional development modules for in-service teachers and to strengthen instruction in pre-service pedagogy courses for secondary instructors in the content areas. A large sample would enhance the representation of the population, leading to stronger results.

Continuing an exploration of the instructional and relational practices employed by expert instructors to support students would contribute to the body of knowledge related to improving reading instruction for struggling readers and students with dyslexia. In addition, an examination of the relationships between teacher knowledge and experience and the ability to adapt curricula and instructional practice would make an important contribution to the literature.

Consideration of TSRs could be reframed through a qualitative research study focused on student and parent perceptions of TSRs. Survey and interview data could be collected and analyzed to identify effective relational practices from the point of view of parents and students. These types of qualitative data could positively shape teachers' professional practices and improve student learning.

Finally, an experimental or quasi-experimental study focused on the development of reflective practice in teaching could be conducted. A protocol for the development of structured

reflective practice could be designed to measure reflective practice among teachers and included in case studies of struggling readers at different grade levels. Following instructor training, a post-intervention evaluation could be conducted to provide data about the utility of the protocol for developing professional practice.

Significance and Conclusion

When schools in Oregon closed to slow the spread of COVID-19 on March 16, 2020, most teachers and literacy tutors did not realize that, with few exceptions, face-to-face instruction would not resume until September 2021. In other words, most students in Oregon were taught online for more than one academic year. Classroom teachers continued to provide synchronous, direct instruction in VLEs (e.g., Google Meetings or Zoom), but the majority of the children's instruction and assignments were delivered asynchronously through digital learning platforms. Asynchronous learning modules and assignments required heavy reliance on reading to learn. Many learners with dyslexia and other language-based learning difficulties participated in supplementary instruction delivered by expert literacy tutors who also moved their instruction to a VLE.

The purpose of this qualitative collective case study was to explore the relational and professional practices literacy tutors used to support learners with dyslexia in virtual environments during the COVID-19 pandemic. Eight known literacy tutors were individually interviewed by the researcher to address the research question. Five interviewees provided rich data for qualitative analyses. Three themes were distilled from the data found in the cross-case analyses: adapting instructional practices to a new context, caring for students and parents, and reflecting on professional practice. Recording and analyzing the lived experiences of each tutor created a unique historical record of a chaotic time and revealed the dedication and

professionalism of literacy experts who stepped into virtual spaces to enable the continuation of

learning for students with dyslexia despite lengthy school closures. Valuable lessons learned

from the experiences of these educators have the potential to shape policy and practice in

education in the future.

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Appendix A

Email Interview Request

I am conducting interviews as part of a research study designed to explore the relational and professional practices employed by literacy tutors in virtual learning environments during the Covid-19 pandemic. As a literacy professional who provides expert instruction and tutoring support to students with dyslexia, you are in an ideal position to offer valuable first-hand information from your own experiences during that period.

The semi-structured interview takes no more than one hour and is designed to collect your thoughts and perspectives on supporting students with dyslexia in virtual learning environments during the pandemic. This study has been approved by the Institutional Review Board at Southeastern University. Your responses to the interview questions will be kept confidential. Each interviewee will be assigned a pseudonym or a number code to maintain privacy, and any other identifiers will be redacted during the analyses and any future reports of the study's results.

There is no compensation for participating in this study. However, your participation will make a valuable contribution to professional practice, contribute to professional knowledge in the field, and lead to improved support for learners with dyslexia.

Thank you for your consideration. If you are interested in participating in the study, please respond to this email. I look forward to hearing from you to schedule a convenient time for an interview. If you have any questions, please do not hesitate to ask. You can also contact the principal investigator, Dr. Patty LeBlanc, at pbleblanc@seu.edu or the Institutional Review Board at irb@seu.edu.

With my sincere thanks,
Megan Hills
Ed.D. Candidate at Southeastern University

Note: If you do not wish to receive further communication regarding this study, please reply to this email and type "unsubscribe" in the subject line. Your email address will be removed immediately.

Appendix B

Adult Consent Form

Southeastern University

Project Title: A Qualitative Study of Literacy Tutoring in Virtual Environments during the COVID-19 Pandemic: Instructional and Relational Practices to Support Dyslexic Learners

Investigators: Patty LeBlanc, Ph.D., Southeastern University; Megan Hills, M.Ed., Southeastern University

Purpose: The purpose of this qualitative collective case study is to explore the relational and professional practices literacy tutors used to support dyslexic learners in virtual environments during the COVID-19 pandemic.

Procedures: This study has been approved by the Institutional Review Board for Study of Human Subjects at Southeastern University. You will participate in a semi-structured interview, either face-to-face or virtually, based on your preference. The interview will last approximately one hour. The interview questions ask about your professional practices and experiences while tutoring students in virtual environments during the COVID-19 pandemic. The interview will be audio-recorded and transcribed, and you will be asked to review the transcript for accuracy. After validation of the transcripts, the researcher will assign numbers to each participant and redact any possible identifiers before reporting the results of the study.

Risks of Participation: There are no known risks associated with this project that are greater than those ordinarily encountered in daily life.

Benefits of Participation: Documentation of educators' responses to the challenge of supporting learners during the COVID-19 pandemic provides an important historical record. This study may

inform professional practice, contribute to professional knowledge in the field, and lead to improved support for learners with dyslexia in virtual environments.

Confidentiality: The records of this study will be kept private and confidential. Any written results will not include information that will identify you. Research records will be stored on a password-protected computer in a locked office, and only researchers and individuals responsible for research oversight will have access to the records. Audio recordings will be destroyed after transcription and participants' verification of transcripts.

Compensation: There is no compensation for participation in this study.

Contacts: You may contact any of the researchers at the following email addresses and phone numbers should you desire to discuss your participation in the study and/or request information about the results of the study:

Patty LeBlanc, Ph.D.

pbleblanc@seu.edu

Megan Hills M.Ed.

mghills@seu.edu

Southeastern's Institutional Review Board

irb@seu.edu

Appendix C

Literacy Specialist/Tutor Intake Form

The background information you provide on this form will enrich my research and help me to prepare for your interview. Please address each of the following questions by typing your responses in a different color font. Feel free to add all the space you need to respond within this editable document. Thank you so much for your assistance!

Name:

Education:

Certification/Training:

Approximately how many years have you served as a literacy specialist?

Check all that apply and indicate the approximate number of years.

- ☐ As a classroom teacher?

- ☐ As a school or district specialist?

- ☐ In private practice?

Are you a member of the International Dyslexia Association?

Are you affiliated with any other literacy organizations?

On average, how many students with dyslexia do you support each year in your practice?

On average, how many times per week do you work with a student with dyslexia?

How long are the sessions?

What is the typical age range of the students with dyslexia that you support as a literacy tutor?

Did you provide instruction in virtual learning environments before the COVID-19 pandemic?

Do you have any other information you feel might be pertinent prior to the interview?

Please save and return this form to me at mghills@seu.edu.

If you have any questions, please contact me or my dissertation chair, Dr. Patty LeBlanc, at

pbleblanc@seu.edu. You can also direct any questions to the Institutional Review Board at

Southeastern University at irb@seu.edu.

Thank you for your willingness to participate in this study. I look forward to meeting with you!

Megan Hills, M. Ed.

Appendix D

Interview Questions and Possible Prompts

1. Tell me about your experiences tutoring students with dyslexia in virtual learning

   environments (VLE) during the COVID-19 pandemic.

2. Describe the instructional strategies you employed to support learners in the VLE.

   - Curriculum

   - Technology

   - Multisensory

   - Engagement

3. Describe the relational strategies you employed to support learners in the VLE.

   - Students

   - Parents

4. What have you learned from the experience of supporting students with dyslexia in a

   VLE during the pandemic?

5. Is there anything else you would like to tell me?