



By Kimberly A. Hughes,
Katherine Mitchell,
Lisa M. Steward, and
Elizabeth L. Kaye

EVALUATING PHONICS SKILLS THROUGH WRITING: A COMPARISON OF FIRST GRADERS WITH AND WITHOUT DYSLLEXIA CHARACTERISTICS

Kimberly A. Hughes is a doctoral candidate in the Division of Literacy and Language at Texas Woman's University and a teacher in Richardson ISD. Her research interests include early literacy, early writing, and teacher learning. She can be reached at khughes12@twu.edu.

Katherine Mitchell is a doctoral candidate at Texas Woman's University. She is currently teaching literacy intervention at Wayzata Public Schools. Her research interests include early literacy interventions, early writing, and education policy. She can be reached at kmitchell25@twu.edu.

Lisa M. Steward is a doctoral student at Texas Woman's University. She is currently the Director of K–5 Literacy in Richardson ISD. Her research interests include early literacy, teacher knowledge, and literacy intervention. She can be reached at lsteward@twu.edu.

Elizabeth L. Kaye, PhD, holds the Dr. Billie J. Askew Endowed Chair and is a professor in the School of Education at Texas Woman's University. Her research interests include early and emergent literacy, literacy intervention, and teacher learning. She can be reached at ekaye@twu.edu.

Abstract: This research article uses content analysis and descriptive analysis to examine phonics proficiency in first-grade students having difficulty learning to read, specifically examining those with and without characteristics associated with dyslexia. Writing samples from a dictation task were collected and analyzed at the

beginning of the school year and after students completed a 20-week intervention. Through the analysis process, the authors compared students' writing samples from the beginning of the year to the middle of the year and determined what changes occurred over time. An analysis tool was developed to analyze each phonics element that was represented in the writing samples. Utilizing the analysis tool, the authors determined that after the 20-week intervention, all students' phonics knowledge grew based on their writing from the dictation task, regardless of their dyslexia status. Analysis included common patterns, specific phonemes, and high frequency words. At the conclusion of the analysis process, the authors concluded that the ability of most students to hear and record beginning, middle, and ending sounds in words improves from beginning of year to middle of year, regardless of dyslexia status.

Keywords: dyslexia, phonics, writing, early literacy intervention, reading difficulty

Recently, parents, teachers, and researchers have had a renewed focus on phonics instruction, and the debate around the best way to teach children to read reemerged. This emphasis evolved from discussions around the best way to teach students diagnosed with dyslexia and the ubiquitous Science of Teaching Reading movement. The current debate has focused almost exclusively on reading with little attention being paid to writing and the reciprocity between decoding and encoding (Graham, 2020). However, research has shown that students who had difficulty with decoding

also had difficulty with encoding (International Dyslexia Association, 2002; Shaywitz, 2003).

Few studies looked at the encoding of students with characteristics of dyslexia and students without characteristics of dyslexia and how their encoding developed over time. The current study aimed to fill the gap in the research by analyzing students' encoding to describe how the phonics knowledge of students with and without characteristics of dyslexia changes over time.

Background and Literature Review

This study was a follow-up to earlier research that examined the literacy progress of first-grade students, both with and without characteristics of dyslexia, who participated in Reading Recovery, a 20-week reading and writing intervention (Kaye et al., 2022). The original study found that all students made significant progress in the intervention, as evidenced by their pretest and posttest scores on three assessments: *An Observation Survey of Early Literacy Achievement* (OS) (Clay, 2019), the Feifer Assessment of Reading (FAR) (Feifer & Nader, 2016), and the Slosson Oral Reading Test-Revised (SORT-R) (Slosson & Nicholson, 2002). However, at the end of the intervention, students without school-identified dyslexia characteristics made greater progress than students with dyslexia characteristics on the OS and the SORT-R. No significant difference was revealed between the two groups' post-test scores on the FAR (Kaye et al., 2022), an assessment intended to identify the specific subtype of reading difficulty. Prior to the Reading Recovery intervention, scores on the FAR indicated that all students in the study had one or more types of reading difficulty (dysphonetic dyslexia, surface dyslexia, mixed dyslexia, or reading comprehension deficit). However, after the 20-week intervention, FAR scores showed a reduction of 50% or more in each category of reading difficulty. Those outcomes led us to question whether a closer look at FAR subtests or OS tasks would reveal more detail about students' progress or uncover differences in learning between the students identified as having dyslexia characteristics and those without that designation.

Because phonics and phonemic awareness play such an important role in learning to read, we sought to examine the relationship between the FAR Phonological Index and the phonemic awareness task of the OS: the Hearing and Recording Sounds in Words (HRSW) task. Phonological awareness, the awareness of and the ability to work with sounds in spoken language; phonemic awareness, the ability to identify and manipulate individual sounds (phonemes) in spoken words; and phonics, the relationship between spoken sounds (phonemes) and written letters (graphemes), are literacy skills that build a strong foundation for reading and writing success (Texas Education Agency, 2019). Analysis indicated that the HRSW task was positively correlated with the FAR Phonological Index at both the

beginning ($r = .54, p = .001$) of the intervention and the end ($r = .69, p < .001$) of the intervention. As a result, we were eager to understand more about the ways students displayed their phonemic awareness through writing on the HRSW task.

In the current study, we described and compared the phonics knowledge of students with and without characteristics of dyslexia to determine how phonics knowledge changed over time and whether it differed between students with and without characteristics of dyslexia. Specifically, this study used the data collected in the original study and focused on the HRSW task of the OS. The HRSW task is an encoding activity that measures a student's phonemic awareness and phonics knowledge.

Research Questions

The following research questions guided this study:

1. How did knowledge of phonics elements on the HRSW task change from the beginning of year (BOY) to the middle of year (MOY) for students with and without characteristics of dyslexia after receiving Reading Recovery intervention?
2. Was there a difference between each group's knowledge of phonic elements at the BOY and MOY after receiving Reading Recovery intervention?

Reading Recovery

All students in the study received Reading Recovery. Reading Recovery is a short-term reading and writing intervention for the lowest performing first-grade students and is based on Clay's literacy processing theory (Clay, 2016; Doyle, 2019). Clay's theory focuses on the mental and perceptual processes required for reading and writing (Doyle, 2019). Thus, literacy learning is complex and multifaceted; controlling directional behaviors, understanding language, and attending to print (conventions, letters, clusters, and words) must be integrated on the run in order to extract the message from the text (Doyle, 2019).

During a Reading Recovery lesson, students participate in message-getting and problem-solving activities by reading new and familiar texts, working on letter and word learning, and writing brief stories. Reading Recovery teachers use highly individualized, explicit teaching procedures to address phonics through the reading and writing of continuous texts as well as by working with letters, words, and word parts in isolation (Clay, 2016; Harmey & Bodman, 2020).

Dyslexia

Dyslexia is an unexpected language-based specific learning disability that affects reading and writing. Students diagnosed

with dyslexia have typical cognitive abilities but may have difficulty decoding, reading fluently, and encoding (spelling) due to a deficit with the phonological component of language (International Dyslexia Association, 2002; Shaywitz, 2003).

Dyslexia research has focused primarily on reading difficulties and little attention has been paid to writing (Morken & Helland, 2013). However, students with dyslexia often have difficulty with encoding, retaining, and accessing phonological information (Herbert et al., 2018). Therefore, analyzing a dyslexic student's ability to encode helps to understand their ability to process phonological information and potentially predict later reading ability (Herbert et al., 2018; Ouellette & Sénéchal, 2017).

Reciprocity Between Reading and Writing

Reading and writing are reciprocal processes that represent two different ways to learn the same thing. As Clay (2016) states, "The knowledge you have about writing can be used during reading, and vice versa" (p. 77). In other words, the knowledge that makes reading possible also makes writing possible. Students draw on general knowledge, metaknowledge, pragmatic knowledge, and procedural knowledge for both reading and writing (Fitzgerald & Shanahan, 2000).

Both "reading and writing rely on related underlying [phonological] processes" (Herbert et al., 2018, p. 843) and require close examination of letter features and letter combinations. Developing an understanding of the relationships between letters and sounds and applying these spelling-sound patterns to various words when decoding and encoding helps students develop as both readers and writers (Shaywitz, 2003). Writing also encourages the recognition of sounds in words and how those sounds correspond to certain letters (Clay, 2016, 2019; Shaywitz, 2003), which reinforces decoding abilities. Consequently, this strong link between reading and writing results in encoding being a strong predictor of a child's later reading ability (Herbert et al., 2018; Ouellette & Sénéchal, 2017).

In fact, research has shown the strong relationship between writing and reading (Ahmed et al., 2014; Fitzgerald & Shanahan, 2000; National Early Literacy Panel, 2008) and how more time spent on writing and writing instruction improves overall reading success (Aram & Biron, 2004; Graham & Hebert, 2011). Multiple researchers found that writing instruction had clear benefits to alphabetic knowledge (Aram & Biron, 2004; Hall et al., 2014; Levin & Aram, 2012), phonological awareness (Aram & Biron, 2004; Hofslundsengen et al., 2016), and to children's overall word reading (Craig, 2006; Hofslundsengen et al., 2016). Orthographic knowledge, which is the knowledge of how written language represents spoken language, is a foundational skill that develops over time

as children learn more about the way that letters are combined to make words. In Craig's (2006) study on the effects of interactive writing compared to metalinguistic games on the early literacy skills of kindergarten students, multiple assessments were used to determine the orthographic knowledge of students before and after the intervention program. Although researchers found no significant difference between the children's overall phonological awareness skills, the interactive writing group performed significantly better on word reading and word identification tasks at the end of the intervention (Craig, 2006). Most of the students in the study had fairly strong scores in the area of phonological awareness at the beginning of the study; therefore, it may have been difficult to assess their growth in this area. Descriptive statistics revealed that students in both groups showed growth in phonological awareness and their ability to hear and record sounds in words.

Likewise, Aram and Biron (2004) used a word writing assessment and an orthographic awareness measure before and after their joint storybook intervention and interactive writing intervention. The writing intervention group made significantly more progress than the other groups in orthographic knowledge and word writing in the Hebrew language. In Norway, Hofslundsengen et al. (2016) also determined that students in the invented writing group scored significantly higher than students who received the regular preschool program in spelling and word reading after the intervention and six months after participating in the program. The results across multiple studies on the improvements in alphabet knowledge, phonological awareness, and word reading development pointed to the reciprocal relationship between reading and writing instruction and the importance of giving young children opportunities to use invented spelling.

Purpose

With the Science of Teaching Reading movement, years of literacy research regarding the role of writing in supporting young readers has been disregarded (Sawchuk, 2023). Additionally, children have been screened and placed in dyslexia programs at an early age (Sawchuk, 2023). Most of these programs have a very narrow structured phonics approach. It is important to understand how writing, with a focus on encoding, can reveal students' phonics knowledge. Therefore, this study focused on the encoding of students with and without characteristics of dyslexia in a research-based, early literacy intervention.

Method

Participants

The original study included 36 students from two public school districts in a southern state (Kaye et al., 2022). One

school was unable to find the HRSW assessment, resulting in some of the students not being included in the current study. Another four students did not have a dyslexia classification on the school screener and were not included in the current study. Therefore, this study included 28 of the original 36 participants. Of the 28 participants, 15 were identified as having characteristics of dyslexia and 13 were identified as not having characteristics of dyslexia according to the school’s dyslexia screener. The school dyslexia screener was chosen by each school district based on 2019 state guidelines. All 28 participants received Reading Recovery, an early literacy intervention for first graders, at the BOY. Due to students moving, the MOY sample included 24 students.

Study Timeline

The original study was conducted during the 2019–2020 school year (Kaye et al., 2022). The BOY OS was given to participants in the fall of 2019. The MOY OS was given to participants after 20 weeks of Reading Recovery, in the winter of 2020. The COVID-19 pandemic resulted in school closures in the spring of 2020; therefore, end of year data was not available. The present study used written responses from the HRSW tasks at both points in time, BOY and MOY.

Data Sources

The HRSW task of the OS (Clay, 2019) was used to determine students’ knowledge of phonemic awareness and phonics. The National Center on Intensive Intervention (NCII) awarded the OS their highest ratings of “Convincing Evidence” as a first-grade academic screening tool and for its reliability and validity (D’Agostino, 2012; NCII, 2021).

The HRSW task was developed through systematic observation of children’s change over time in writing and descriptive studies of how children progress in writing (Clay, 2019). The task is used to “capture the child’s control of sound-to-letter links. It calls upon the writer to listen to the sequence of sounds in words and to find letters to represent those sounds” (Clay, 2019, p. 116). Procedures for administering the HRSW task indicate that the observer selects one of five sentences to use in the observation (see Appendix A). The observer tells the child that they will read a story, and after the story is read once, the observer will slowly dictate the brief story, word by word, as the child listens to the sounds in the words and writes down the corresponding letter(s). The observer may offer some support to the child as they are completing the task by using the following prompts: “You say it slowly”; “How would you start to write it?”; “What can you hear?” (Clay, 2019, p. 113).

Data Analysis

Content analysis and descriptive analysis were used to analyze the data from the HRSW tasks. All 28 participants were included in the content analysis in order to better understand how students demonstrated their phonics knowledge at the BOY. Only the 22 participants given Form D at the BOY and Form A at the MOY were included for the descriptive analysis of the HRSW data (see Table 1).

Table 1. Forms Used for Data Analysis

HRSW Forms	Content Analysis		Descriptive Analysis	
	BOY	MOY	BOY	MOY
Form A	1	23	0	22
Form B	0	0	0	0
Form C	0	1	0	0
Form D	27	0	22	0
Form E	0	0	0	0

Note. Content Analysis (BOY $n = 28$; MOY $n = 24$), Descriptive Analysis ($n = 22$)

Content Analysis

Our initial data analysis was informed by content analysis to answer the first research question about how student knowledge of phonics elements changed over time for students with and without characteristics of dyslexia. Contemporary content analysis is a research methodology of its own that draws from both quantitative and qualitative approaches (Krippendorff, 2019). While content analysis in literacy research is often used to identify the presence of certain words or concepts in a text, content analysis may also be used to analyze student writing samples in order to look for patterns in student responses (DeJulio et al., 2021).

For the purpose of this study, content analysis allowed us to “quantify and analyze the presence” (DeJulio et al., 2021, p. 30) of phonics elements in student writing on the HRSW task before and after students received 20 weeks of Reading Recovery intervention.

We limited the focus of our analysis to the phonics elements represented in four of the five HRSW forms that were present in student writing. Initially, we identified the phonics elements in Forms A, C, D, and E in the HRSW task. We excluded Form B from our analysis because none of the participants in the study were given this form at either the BOY or MOY. As a group, we looked at the sentences

on each of the four HRSW forms to determine the phonics elements represented. This intercoder agreement (Creswell & Báez, 2020) on the phonics elements included in each HRSW form strengthened our consistency when analyzing student writing. The phonics elements and spelling of whole words identified for analysis appear in Table 2.

We also identified and analyzed high-frequency words (HFW) and multisyllabic words. Words coded as HFW were determined by using Fry’s first 100 Instant Sight Words (Fry, 2000) as presented in *Words Their Way* (Bear et al., 2019, p. 333).

Table 2. Analysis of Phonics Elements and Spelling of Whole Words

Phonics Elements	Spelling of Whole Words
initial, medial, & final consonants	vowel-consonant (VC)
consonant digraphs & blends	consonant-vowel-consonant (CVC)
short & long vowel patterns	consonant blends (CCVC & CVCC)
r-controlled vowels	consonant digraphs (CCVC & CVCC)
nasal vowels	silent-e (CVCe)
schwa	
inflected endings	

We created a data analysis tool in Google Sheets based on the phonics elements on the four HRSW forms (see Figure 1). The spreadsheet had separate tabs for HRSW Forms

A, C, D, and E at the BOY and MOY. Each spreadsheet included the following information: randomly generated student identification number, school identified dyslexia classification, the HRSW total score, and the breakdown of the phonics elements, spelling of whole words with common patterns, and high-frequency words for each word in each sentence.

The student writing samples from the HRSW task at the BOY and MOY were divided among each of the researchers. We then used the tool individually to analyze the phonics elements and spelling of whole words present in each student’s response at the BOY and MOY. When a phonics element was represented in a student’s written response, we entered a 1 in the spreadsheet for that phonics element. When a phonics element was not observed, we entered a 0 into the spreadsheet. For example, if a student wrote *bs* for the word *bus*, then a 1 would appear in the spreadsheet for both Initial Consonant and Final Consonant; a 0 would appear in the spreadsheet for Short Vowel since the *u* in *bus* was not observed. A 0 would also appear for Consonant-Vowel-Consonant (CVC) since the conventional spelling of the whole word was not used.

After analyzing all students’ written responses from the BOY and MOY, we consolidated all of the student information onto a new spreadsheet (see Figure 2). This final data analysis sheet included the following information: randomly generated student identification number, school identified, dyslexia classification, the HRSW total score at the BOY and MOY, the total number of phonics elements, and the spelling of whole words that each student represented in their writing at the BOY and MOY. The data were then sorted to group students with

Figure 1. Excerpt of HRSW Form D Google Sheet

Digraph	Schwa	HFW	Initial Consonant	Short Vowel	Final Consonant	CVC	Short Vowel	Final Consonant	HFW	VC	Initial Consonant	Schwa	Medial Consonant	Nasal Vowel	Medial Consonant	Final Consonant	Inflected Ending	MSW
Th	e	The	b	u	s	bus	i	s	is	c	o	m	i	n	g	ing	coming	
1	1	1	1	0	1	0	1	1	1		1	1	1	0	0	0	0	0

Figure 2. Excerpt of Final Analysis by Phonics Elements and Spelling of Whole Words

BOY Initial Consonant	MOY Initial Consonant	BOY Final Consonant	MOY Final Consonant	BOY Short Vowel	MOY Short Vowel	BOY VC	MOY VC	BOY CVC	MOY CVC	BOY Digraph	MOY Digraph	BOY Initial Consonant Blend	MOY Initial Consonant Blend	BOY Medial Consonant	MOY Medial Consonant	BOY CCVC	MOY CCVC	BOY CVCC	MOY CVCC	BOY Long Vowel	MOY Long Vowel	BOY Long Vowel CVCe	MOY Long Vowel CVCe	BOY Long Vowel Pattern	MOY Long Vowel Pattern	BOY R Controlled Vowel	MOY R Controlled Vowel	BOY Schwa	MOY Schwa	BOY Nasal Vowel	MOY Nasal Vowel	BOY Inflected Endings	MOY Inflected Endings	BOY MSW	MOY MSW	BOY HFW	MOY HFW		

“After receiving 20 weeks of Reading Recovery, all students’ phonics knowledge grew based on their writing on the HRSW task.”

and without characteristics of dyslexia, as indicated on school screeners.

Descriptive Analysis

We used descriptive analysis to answer the second research question about whether there were differences in the phonics knowledge of students with and without characteristics of dyslexia at the BOY and MOY, after receiving 20 weeks of Reading Recovery intervention. Descriptive analysis is an effective quantitative method for identifying patterns and relationships within a set of data in order to better understand a phenomenon (Loeb et al., 2017). According to Loeb et al. (2017), the use of statistical tools like computing and understanding averages, measuring variations, and creating frequency distributions is useful for describing and comparing data. For this dataset, we employed descriptive statistics to describe and compare the phonics elements identified in student writing as well as the spelling of whole words. We were especially interested in comparing averages between students with and without dyslexia at the BOY and MOY. Using inferential statistics to determine significance was

not appropriate for this data set because of our small sample size.

During our content analysis of student writing on the HRSW task, we found that certain phonics elements were represented more frequently in each of the four HRSW forms. Students had more opportunities to represent phonics elements like initial and final consonants and short vowels than other complex phonics elements like consonant digraphs and blends, long vowel patterns, and inflected endings. Therefore, we narrowed our descriptive analysis to include only the frequently occurring elements, as shown in Table 3. In addition, we included high-frequency words because students had more opportunities to conventionally spell these words than other types of words like consonant-vowel-consonant words or multisyllabic words.

Most students were given Form D at the BOY and Form A at the MOY (see Table 1). The two students who were given different forms on the HRSW task were excluded from the descriptive analysis. We excluded students without MOY forms from the analysis, and we also removed students with unknown dyslexia status from the data set. We included 22 students in the descriptive analysis in total, with 11 identified as having characteristics of dyslexia and 11 as not having such characteristics.

Findings

Students Without Characteristics of Dyslexia

Students without characteristics of dyslexia represented more initial consonants than any other phonics element on

Table 3. Descriptive Statistics for Phonics Elements in Student Writing

Phonics Element	Students With Characteristics of Dyslexia		Students Without Characteristics of Dyslexia		Number of Phonics Elements
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Total
BOY Initial Consonant	4.00	2.72	6.73	1.42	9
MOY Initial Consonant	10.36	0.50	10.92	0.30	11
BOY Final Consonant	2.27	2.53	4.18	2.40	10
MOY Final Consonant	9.36	0.92	9.18	0.98	10
BOY Short Vowel	2.09	1.58	2.36	1.91	8
MOY Short Vowel	5.00	0.77	5.18	0.75	6
BOY HFWs	1.36	2.01	2.45	2.02	8
MOY HFWs	6.82	0.87	6.36	1.12	8

Note. Students With Characteristics of Dyslexia ($n = 11$), Students Without Characteristics of Dyslexia ($n = 11$)

the HRSW task at the BOY. Some final consonants and short vowel sounds were also recorded. Very few students heard and recorded more complex phonics elements at the BOY, such as digraphs or long vowels, and no students in the study recorded consonant blends. After 20 weeks of intervention, the content analysis of student writing revealed that students without characteristics of dyslexia grew in all of the phonics elements represented on our data analysis spreadsheet, including the more complex features. Students were also able to conventionally spell more whole VC and CVC patterns and high-frequency words at the MOY. While more students correctly represented words with complex spelling elements and multisyllabic words like *today* and *going* at the MOY, there were limited opportunities for students to write words with more complex spelling elements due to their rare occurrence on the assessment tool.

Students With Characteristics of Dyslexia

At the BOY, some students with characteristics of dyslexia heard and recorded the initial consonants in words; however, few students included other phonics elements in their writing other than a small number of final consonants and short vowels. By the MOY, however, students with characteristics of dyslexia could hear and record beginning, middle, and ending sounds in words. Additionally, students with characteristics of dyslexia represented more complex phonics elements at the MOY such as consonant blends, long vowel sounds, and inflected endings. Students also used their phonics knowledge to spell more whole words conventionally by the MOY including those with VC and CVC patterns as well as high-frequency words. While more students seemed to grow in their ability to represent complex phonics elements and longer words, the HRSW task contained few of these elements.

Comparing Students With and Without Characteristics of Dyslexia

Descriptive statistics revealed that at the MOY, students without dyslexia characteristics were able to hear and record more initial ($M = 6.73$) and final consonants ($M = 4.18$) than students with dyslexia characteristics (Initial Consonants, $M = 4.00$, Final Consonants, $M = 2.27$). Students without characteristics of dyslexia represented only slightly more short vowel sounds on average ($M = 2.36$) than students with characteristics of dyslexia ($M = 2.09$). However, both groups of students were able to hear and record more initial and final consonants and short vowels by the MOY (see Table 3). In fact, the averages for each of the phonics elements represented in student writing were almost the same in each of the categories for students with and without dyslexia characteristics. Students without characteristics of dyslexia did only slightly better with initial consonants and short vowel sounds.

The total number of high-frequency words recorded by students with and without characteristics of dyslexia was also examined using descriptive statistics. Students without characteristics of dyslexia spelled more high-frequency words in their writing at the BOY ($M = 2.45$) than students with characteristics of dyslexia ($M = 1.36$). By the MOY, both groups of students were able to write more high-frequency words on the HRSW task. Students with characteristics of dyslexia had a slightly higher average ($M = 6.82$) than students without characteristics of dyslexia ($M = 6.36$).

It is also worth noting that the standard deviation of the phonics elements present in both groups of students' writing narrowed from the BOY to the MOY (see Table 3). This decrease in variability between average scores for initial and final consonants, short vowels, and high-frequency words reveals that for students both with and without characteristics of dyslexia, their ability to hear and record sounds in words was more similar to one another than at the BOY.

Discussion and Implications

After receiving 20 weeks of Reading Recovery, all students' phonics knowledge grew based on their writing on the HRSW task. In other words, the ability of most students to hear and record beginning, middle, and ending sounds in words improved, regardless of dyslexia status. Unfortunately, opportunities to discern students' knowledge of complex phonics elements and multisyllable words were limited due to their rare occurrence on the assessment tool. Although students with and without characteristics of dyslexia showed growth in these areas, the present findings warrant further investigation. Subsequent research could employ assessment tools that offer students more opportunities to demonstrate their knowledge of complex phonics elements and multisyllabic words.

Overall findings have important implications for the types of intervention programs that students with reading difficulties receive. Currently, many states have passed early literacy legislation requiring students with early reading difficulties to receive structured literacy interventions that have a narrow focus on phonics (D'Agostino & Harmey, 2016; Ritchey & Goeke, 2006; Schwartz, 2022; Shanahan & Barr, 1995; Stevens et al., 2021; Woulfin & Gabriel, 2022). Students in this study with and without characteristics of dyslexia grew in their phonics knowledge after a short-term, multifaceted literacy intervention. It is critical to better understand the types of interventions available for students and consider early literacy interventions that support both reading and writing processes.

Early writing plays a crucial role in the development of literacy skills (Mackenzie, 2011, 2014; Quinn & Bingham, 2018; Rowe, 2018). Greater emphasis should be placed on the reciprocal relationship between decoding and encoding to better support students and inform teacher training. In this

study, students' writing revealed valuable insights into their knowledge of phonics elements. Given the strong relationship between writing and reading (Ahmed et al., 2014; Fitzgerald & Shanahan, 2000; National Early Literacy Panel, 2008), dedicating more time to writing instruction may be a key strategy for improving overall reading outcomes.

Although this study had a small sample size, the results warrant further studies on the encoding of students with and without characteristics of dyslexia and how their encoding changes over time. More research on how multifaceted early literacy intervention supports the phonics knowledge of students with and without characteristics of dyslexia will help educators and policymakers make more informed decisions about how to support the reading and writing development of all students.

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Appendix A

Sentence Options for the Hearing and Recording Sounds in Words Task

Form A	I have a big dog at home. Today I am going to take him to school.
Form B	Mum/Mom has gone up to shop. She will get milk and bread.
Form C	I can see the red boat that we are going to have a ride in.
Form D	The bus is coming. It will stop here to let me get on.
Form E	The boy is riding his bike. He can go very fast on it.