BREAKING DOWN DYSLEXIA

VANCOUVER ISLAND UNIVERSITY

Breaking Down Dyslexia: What Is It, How Do We Know, And How Can We As Educators Help?

by

Eleesha Gatti

B. Ed.

A Graduate Applied Project Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF EDUCATION IN SPECIAL EDUCATION

Faculty of Education

©Eleesha Gatti, 2019
Vancouver Island University
All rights reserved. This project may not be reproduced in whole or in part, by photocopy or other means, without permission of the author.

We accept this Graduate Applied Project as conforming to the required standard.

________________________________________
Shannon Apland, Graduate Applied Project Faculty Supervisor          Date:
Faculty of Education,
Vancouver Island University

________________________________________
Dr. David Paterson, Dean, Faculty of Education          Date:
Vancouver Island University
Abstract

The purpose of this paper is to inform and bring awareness to educators regarding the definition, evidence-based information, and misconceptions of Dyslexia. The aim is to support schools in identifying and providing appropriate and effective interventions to their struggling students without requiring expensive assessments and a formal diagnosis of Dyslexia. Educators will learn which skills research suggests they should be screening for in order to begin interventions immediately. For many students these interventions will be exactly what they need to support their reading. Educators will then be introduced to the latest research on Dyslexia. This research suggests ways we can supplement support for our struggling students who do not respond to typical interventions recommended by researchers.

Breaking Down Dyslexia: What Is It How Do We Know, And How Can We As Educators Help?

Keywords: Dyslexia, Phonemic Awareness, Phonological Awareness, Universal Early Screening, Phonological Intervention, Non-Responders, Right-Brain Intervention
Acknowledgements

Thank you to my family for their constant support, encouragement, and patience throughout this journey. I truly appreciate everything you have done for me.

Thank you to my supervisor who was always there with an encouraging word and was happy to answer my many questions.

Thank you to the team of people who willingly read and re-read my paper with their wisdom, expertise, and strong editing eye.

Thank you to Michele Pentyliuk, M.Ed. Registered Psychologist, for sharing your knowledge and expertise as my second reader.

Thank you to my cohort, it was wonderful to get to know everyone and comforting to have such a great group of people to travel this journey with.

Thank you to my friends, colleagues, and administration for the encouraging words and for believing in me.
# TABLE OF CONTENTS

Abstract ........................................................................................................................................... i

Acknowledgements ..................................................................................................................... ii

Table of Contents ....................................................................................................................... iii

Chapter 1- Statement of Purpose ................................................................................................. 1

  Personal Context .................................................................................................................... 2

  Statement of Problem ........................................................................................................... 2

  Personal Contextualization of the Problem in the Field ....................................................... 3

  Prevalence of Problem and the Greater Effects ..................................................................... 4

  Rationale for Creating the Professional Learning Session ................................................. 5

Chapter 2- Literature Review .................................................................................................... 8

  Definition .............................................................................................................................. 8

  Theoretical Frameworks ..................................................................................................... 9

    Phonological Deficit Theory .............................................................................................. 9

    Auditory Processing Theory ............................................................................................ 10

    The Visual Theory ............................................................................................................ 10

    The Cerebellar Theory .................................................................................................. 11

    The Magnocellular Theory (The Visual Theory) ............................................................ 11

  Critiques ............................................................................................................................. 12

  Common Characteristics of Dyslexia ..................................................................................... 13

  Interventions ....................................................................................................................... 14

  Current Research ............................................................................................................... 15
Breaking Down Dyslexia: What Is It, How Do We Know, And How Can We As Educators Help?

Chapter 1

Statement of Purpose

How can educators identify and support their struggling readers without waiting for and paying for unnecessary assessments? Do schools need to have an official Dyslexia diagnosis in order to help their students, or can teachers be trained to screen and support their striving readers within their own school? How can educators support students who have received intervention but continue to struggle at reading?

There are so many questions educators have about teaching students with Dyslexia. There are also many myths and misconceptions about Dyslexia (Appendix A). It is difficult and time consuming for educators to work their way through all of the information in order to understand how to support learners who have Dyslexia. This ongoing challenge for teachers is the backbone and reason for this professional development session: “Breaking Down Dyslexia: What Is It, How Do We Know, And How Can We As Educators Help?”

The aim of this session is to educate, inform, and bring awareness to educators on the evidence-based information available about Dyslexia. In addition to gaining an understanding of what Dyslexia actually means, participants will learn what they can do to identify and help their struggling readers. Participants will also learn about an alternative supplementary intervention for students who do not respond to conventional supports. In leaving this session, the goal is that participants will have an understanding of what it means to be dyslexic and how being dyslexic may affect student learning. Participants will leave with a starter toolbox that will allow them to screen for traits commonly found in students with Dyslexia and will be provided with examples of research based supports that have been shown to help these students. Ultimately, this
workshop aims to make screening and supports accessible to every educator so that teachers and parents need not wait for a costly and time consuming formal diagnosis through a psychological assessment prior to starting targeted intervention.

**Personal Context**

I have been a grade one teacher for seven years, as well as a literacy intervention teacher for the past two years. During my teaching career, I have come across many students who struggle when learning to read. More often than not, those who struggle with learning to read in grade one, become the students whose names are brought forward for my literacy intervention group in the later grades. I noted an unfortunate trend in these students as they began realizing their peers were able to read and complete their work more independently and their willingness to try decreased. These students often became frustrated and some developed a negative attitude towards coming to school. The need to help these students as early as possible is evident in my day to day practice. The question is how?

**Statement of the Problem**

Despite the many years of research on the causes of Dyslexia and the recommended interventions to help struggling readers, there remains a gap between evidence-based research and educator knowledge and understanding of what they can do to screen and support students with Dyslexia. Dyslexia affects five to seventeen percent of learners (Thorwarth, 2014), however, educators do not receive sufficient training, or adequate access to the evidence-based research to support them as they attempt to screen, identify, and support their struggling readers. Without explicit training on how to assess and how to instruct students with Dyslexia, educators are not able to help these students succeed.
Personal contextualization of the problem in the field:

The district I work in provided evidence based professional development for all kindergarten and grade one teachers that emphasized strategies and the importance of phonemic and phonological awareness in literacy instruction. The kindergarten teachers at my school have a strong program that emphasizes both phonemic and phonological awareness. By the time a student arrives in my grade one class, I am confident they have received explicit, evidence-based phonemic and phonological awareness instruction. Consequently, when I have students who are not progressing as expected with their reading, I conduct an early literacy evaluation using a standardized screening tool. The tool we use in our district is called the Reading Readiness Screening Tool (RRST) (Appendix B), which screens for early literacy skills including phonemic awareness skills and some early phonological skills. The results provide me with specific areas of weakness and guide my intervention. After 6-8 weeks of consistent intervention (Appendix C), I complete a post RRST on each student to check on their progress. For most of the students, the intensive phonemic and phonological based intervention is just what they need to kick start their literacy journey. Their reading skills begin to improve and they most often catch up to their peers. However, there are always a few students who continue to struggle despite consistent research based intervention. It is at this point that my concern increases and I enlist the support of our school counsellor, student support services coordinator, and administration to initiate an action plan which usually consists of continued phonological intervention and the student names being added to the school district ‘to be assessed’ list. This is the process most teachers and schools follow, and once the student has been added to the assessment list, not much more happens, until after the assessment is done. It becomes a waiting game for their name to come up on the district psychological assessment list. This wait list is long and testing usually does not
happen until at least grade three or four, at which time the students are now two or more years behind their peers in reading. Some parents, who have the means, pay for a psychological assessment privately so that they begin the intervention process earlier. This comes at a significantly high cost to the family and unfortunately does not change the outcome and the supports.

Once these flagged students have received their formal assessment, they typically are given a diagnosis of a Learning Disability. The diagnosis comes with a list of recommendations for support. However, the recommendations that have been given to date fail to suggest any different intervention than what our school based team have already been doing prior to the assessment. Recommendations always include phonological intervention with a strong focus on decoding skills. This new diagnosis with a suggestion for interventions already tried is frustrating, as we know the student has not responded to that type of intervention. We are now back to square one, with thousands of dollars having been spent on a private diagnosis and or on a student who is even further behind their peers with no new suggestion on how to catch them up.

**Prevalence of problem and the greater effects:**

According to Thorwarth, Dyslexia “affects many children with estimated percentages ranging from 5% to 17% depending on what study is referenced” (2014, p. 52). Dyslexia is genetic in nature, appears on a continuum and looks different in each individual. Individuals with Dyslexia often have two obvious difficulties with reading. One is their inability to sight read as many words as the average reader, and the second is difficulty decoding unknown words. Due to these difficulties, individuals often have a hard time comprehending what they read. If a student is unable to understand what they are reading, they will fall behind and struggle throughout
school. This is an issue that will continue to affect individuals into old age. With the right support, individuals can experience remediation with the difficulties they are facing and can be taught to read (Hudson, High, & Otaiba, 2007; Witzel, & Mize, 2018).

While a considerable amount of research has been conducted in an effort to help improve the literacy skills of students with Dyslexia, most research gives only one method of intervention: that of letter-sound knowledge, phonemic awareness training as well as explicit and systematic phonics instruction (Duff et al., 2014). Where research falls short is in reaching the students who do not respond to this form of intervention (non-responders). Until recently there has been very little research on how to support those students who are non-responders. Non-responders are those individuals who, despite normalization of phonological processing skills, are still unable to decode words (Odegard, Ring, Smith, Biggan, & Black, 2008). They state that “researchers have speculated that resistance to treatment efforts may be associated with neurobiological differences in children diagnosed with Dyslexia” (p. 2). If students with Dyslexia have neurobiological differences then perhaps the method of teaching them needs to be altered. One new and interesting supplementary intervention approach, published in 2013 by Hedican, is the Right Hemisphere Reading Intervention Method (Appendix F). This intervention does not follow the typical intervention of systematic phonetic and phonemic skill development. Rather it focuses on a more holistic and visual approach to reading. It gives hope that there may be addition ways to reach non-responders when traditional intervention does not work. More information on this approach can be found in Appendix F.

**Rationale for Creating the Professional Learning Session**

“Dyslexia often is considered a minor problem that is beyond the scope of the regular classroom, but not serious enough to merit special education services” (Williams, & Lynch,
2010, p. 68). We know that students with Dyslexia need more explicit and intensive support, for longer periods of time than their peers without Dyslexia. We also know that students with a learning disability do not receive funding for extra one on one educational assistance or support. In an inclusive classroom it is expected that the teacher, with the help of the school based support team, reaches each unique learner. Therefore the expectation is that each teacher understands how to screen, intervene and change practice in order to meet the needs of students with Dyslexia.

Unfortunately, many educators are unaware of not only the research on Dyslexia, but also the telltale signs of Dyslexia, ways to screen for it and the evidence based practices needed to teach their struggling readers. Educators require explicit training on assessing and instructing their students to determine who may need further intervention to support their reading journey (Thorwarth, 2014).

Hakkaart-van Roijen et al., 2011, state “no or ineffective treatment of Dyslexia intervention will generate extra cost to society… [and] furthermore, Dyslexia will decrease quality of life” (p. 257). Thus five to seventeen percent of our future population may have lifelong struggles if they do not have access to an effective intervention program during their school years. At present, we are not reaching all of our struggling learners. Unfortunately, many teacher programs do a poor job of training our future educators to understand and recognize the signs of Dyslexia (Thorwarth, 2014). Research suggests it is not only our new teachers who lack this knowledge, but also our seasoned educators. When interviewed, it was found that “teachers had accurate understandings when asked about reading disability, but misconceptions when asked about Dyslexia” (Worthy et al., 2018, p. 364). In order to prevent our students with Dyslexia from losing their strengths from their obvious weaknesses, teachers need to be educated
on how to teach individuals with Dyslexia properly (Thorwarth, 2014). It is important to open up the minds of educators to the idea that teaching is a “complex and dynamic practice that requires continuous learning and inquiry [and] that effective teachers of literacy draw on a range of approaches and strategies” (Worthy et al., 2018, p. 365).

Creating this professional learning opportunity that is completely focused on Dyslexia will benefit educators and have an important and significant impact on students, their families and our collective future. Educators who attend the session will develop a deeper understanding of Dyslexia and the signs to watch and screen for with their early learners. In addition, participants will gain a better understanding of the various strategies and intervention requirements that will support their struggling readers. Perhaps most importantly, educators will consider the idea that they can support these students without the costly assessment currently being used to gain a formal diagnosis. Participants will leave this session knowing that a diagnosis of a Reading Disability or Dyslexia will not provide any financial benefits to the school, nor change what supports the student requires. The goal of this session is to have each participant leave with the confidence to start screening and intervening immediately to provide support to their struggling students.
Chapter 2

Literature Review

“Although researchers have studied Dyslexia for over a century, there is still much debate about how…to support students identified as dyslexic” (Worthy et al., 2018, p. 359). This review explores the abundant and often contradictory nature of currently available scholarly literature on Dyslexia. This includes the varied definitions, several theoretical frameworks, new research, and suggested interventions for people with Dyslexia. The research explored for this paper will be used to support the development of a professional learning session to educate and support teachers on their journey as they teach and nurture their students with reading difficulties.

Definition

“The word Dyslexia is made up of two different parts: ‘dys’ meaning not or difficult, and ‘lexia’ meaning words, reading, or language. So quite literally, Dyslexia means difficulty with words” (Hudson, High, & Al Otaiba, 2007, p. 506). Worthy et al., state “early researchers and educators believed Dyslexia resulted from visual deficits characterized by letter and word reversals, which are now known to be common in inexperienced readers” (p. 361). The most commonly used definition comes from the International Dyslexia Association (IDA), defining Dyslexia as:

“a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced
reading experience that can impede growth of vocabulary and background knowledge” (Williams, & Lynch, 2010, p. 66).

The neurobiological origin suggests Dyslexia is a scientific, biological reality. Gabriel, 2018, states “the formulation of Dyslexia as neurobiological, rather than cognitive or behavioural, constructs a version of Dyslexia that is natural, verifiable, and therefore unassailable” (p. 263). It is suggested that Dyslexia “is best understood in terms of a continuum... of difficulties, ranging in severity” (Duff, & Clarke, 2010, p. 3). By describing Dyslexia as a continuum, it “provides the public with a set of familiar ideas for understanding Dyslexia” (Gabriel, 2018, p. 264).

Theoretical Frameworks

It has been established that Dyslexia has a genetic origin and is a neurobiological disorder, however, supportive research is still ongoing. Ramus, Rosen, Dakin, Day, Catellote, White, and Frith, 2003, suggest there are three major theories of Dyslexia: the Phonological Theory, the Magnocellular Theory, which consists of the Auditory Processing Theory and the Visual Processing Theory, and the Cerebellar Theory. For the purpose of this paper, the auditory and visual theories will be discussed separately, as well as together.

Phonological Deficit Theory.

Supporters of the Phonological Deficit Theory hypothesize that individuals with Dyslexia have an impairment in the representation, storage, and/or retrieval of speech sounds. These impairments make learning the grapheme-phoneme correspondences, which are believed to be the foundation of reading, difficult for individuals with Dyslexia to acquire (Bradley, & Brant, 1978; Vellutino, 1979; Snowling, 1981; Brady, & Shankweiler, 1991; Ramus et al., 2003). Ramus et al., 2003, state “at the neurological level, it is usually assumed that the origin of the disorder is a congenital dysfunction of left hemisphere perisylvian brain areas underlying
phonological representation, or connecting between phonological and orthographic representation” (p. 842). According to the American Psychological Association dictionary, the left hemisphere perisylvian area of the brain is the area responsible for language, (https://dictionary.apa.org/perisylvian-language-zone). Individuals with Dyslexia usually perform poorly on tasks that require phonological awareness, and brain imaging studies support the notion of left perisylvian dysfunction for this phonological deficit (Paulesu et al., 1996, 2001; Shaywitz et al., 1998; Brunswick et al., 1999; McCrory et al., 2000; Pugh et al., 2000; Temple et al., 2001; Shaywitz et al., 2002; Ramus et al., 2003).

**Auditory Processing Theory.**

Supporters of the rapid Auditory Processing Theory believe that there is a phonological deficit in individuals with Dyslexia, however advocates suggest individuals with Dyslexia show poor performance on a variety of auditory tasks, and these deficits lead to poorer categorical perception of particular contrasts (Mody et al., 1997; Adlard, & Hazan, 1998; Serniclaes et al., 2001; Ramus et al., 2003). It is believed that ‘the auditory deficit theory is therefore the direct cause, in the course of development, of the phonological deficit, and hence of the difficulty in learning to read’ (Ramus et al., 2003, p. 842)

**The Visual Theory.**

Proponents of the Visual Theory of Dyslexia consider that individuals have a visual impairment which leads to difficulties in processing letters and words on a page. The visual theory doesn’t exclude the phonological theory, however, it emphasizes the visual contributions to reading (Ramus et al., 2003). Biologically speaking, supporters of the visual theory state the dysfunction is due to a division of the visual system. It is believed, and supported by various anatomical (Livingstone et al., 1991), psychophysical (Lovegrove et al., 1980; Cornelissen et al.,
1995), and brain imaging (Eden et al., 1996) studies, “That the magnocellular pathway is selectively disrupted in certain dyslexic individuals, leading to deficiencies in visual processing, and, via the posterior parietal cortex, to abnormal binocular control and visuospatial attention” (Ramus et al., 2003, p. 842).

**The Cerebellar Theory.**

Theorists who support the cerebellar theory believe Dyslexia is due to a mild dysfunction of the cerebellum, and that the dysfunction leads to a number of cognitive difficulties. According to Ramus et al., 2003, “the cerebellum plays a role in motor control and therefore in speech articulation” (p. 843). It is speculated that a decrease in articulation leads to deficient phonological representations. The second function of the cerebellum is the automatization of overlearned tasks. Individuals with Dyslexia have a weak capacity to automatize information, which affects the learning of grapheme-phoneme correspondences. Evidence suggests individuals with Dyslexia are poor performers of a large number of motor tasks (Fawcett et al., 1996), dual tasks showing an impairment in automatization of balance (Nicolson, & Fawcett, 1990), and time estimation (Nicolson et al., 1995).

**Magnocellular Theory (The Visual Theory).**

Proponents of the magnocellular theory attempt to integrate the previous findings by suggesting that Dyslexia is not “restricted to the visual pathways but is generalized to all modalities (visual and auditory as well as tactile)” (Ramus et al., 2003, p. 843). Biologically, the magnocellular theory accounts for all known manifestations: visual, auditory, tactile, motor, and phonological. Evidence suggests the brains of individuals with Dyslexia show magnocellular abnormalities in the medial and lateral geniculate nucleus (Livingstone et al., 1991; Galaburda et al., 1994, Ramus et al., 2003), poor tactile performance (Grant et al, 1999; Stoodley et al., 2000;
Ramus et al., 2003), and a co-occurrence of visual and auditory problems (Witton et al., 1998; Cestnick, 2001; van Ihgelghem et al., 2001; Ramus et al., 2003). It is now believed that visual and auditory deficits are part of the more general magnocellular dysfunction (Ramus et al., 2003).

**Critiques**

As with any theory, there are always critiques and the three major theories of Dyslexia are no exception. Critiques of the phonological theory suggest a major weakness is “its inability to explain the occurrence of sensory and motor disorders in dyslexic individuals” (Ramus et al., 2003, p. 843). Supporters argue that both sensory and motor disorders do not cause Dyslexia, but rather they may co-occur. Those who criticize the cerebellar theory suggest it does not account for sensory disorders and the theory relies on “an outdated view of the motor theory of speech” (Ramus et al., 2003, p. 843). Critiques have also pointed out the lack of evidence to support the theory that all dyslexic individuals are affected by motor deficits. The third major theory of Dyslexia has its critiques as well including “a number of failures to replicate findings of auditory disorders in Dyslexia” (Ramus et al., 2003, p. 843). A further criticism of the Magnocellular theory is the idea that some individuals with Dyslexia do not have deficits with their rapid auditory processing but rather have impaired and slow auditory processing. Those who criticize the visual side of the theory focus on the inability to replicate visual deficit research findings, “most notably, visual impairments, when found, seem to be observed across a whole range of stimuli, not just those specifically tapping the magnocellular system” (Ramus et al., 2003, p. 844). Currently, there is very limited research available to explain the reason for students who do not make progress as part of the typical explicit, systematic, phonological based intervention programs (Worthy et al., 2018). “Despite decades of intensive research, the underlying biological
and cognitive causes of the reading [difficulties] are still hotly debated.” (Ramus et al., 2003, p. 841). Further research into biological origins of Dyslexia would benefit individuals who struggle with the disorder.

**Common Characteristics of Dyslexia**

“Even though intelligence is not affected by [Dyslexia], it hinders the ability of learning to read accurately and fluently…” (Thorwarth, 204, p. 51). Researchers suggest there are some common skill deficits that can be found in individuals who are diagnosed with Dyslexia. Duff and Clarke, 2010, state that “the most substantiated theory asserts that dyslexic difficulties are caused by a core deficit in phonological processing” (p. 3). These deficits lead to struggles with decoding and fluency (Witzel, and Mize, 2018). In order for someone to decode words successfully, they need strong phonological awareness, phonological memory, and naming skills. “Phonological awareness refers to the ability to attend to and manipulate the sounds in words” (Duff, & Clarke, 2010, p. 3). Two building blocks of phonological awareness that prove to be foundational when learning to read include the link between phonemic awareness and the alphabetic principle. “Children with dyslexic difficulties demonstrate weaknesses in all these skills” (Duff, & Clarke, 2010, p. 4). These skills are considered to be most closely related to the ability to decode. Duff and Clarke state that “gains in phonological awareness lead to gains in reading” (2010, p. 4). When readers lack decoding skills, their reading is often “slow and laborious” (Thorwarth, 2014, p. 53), with persisting reading errors. Individuals with Dyslexia will often guess at words, make substitutions or omissions, or lack the phonics rules to sound out unknown words. “Decoding has a great impact on reading comprehension because it is a relatively lower-level reading skill… a prerequisite to achieve reading comprehension” (Witzel, & Mize, 2018, p. 32). Therefore, when a student lacks proficient decoding skills, their reading
fluency is significantly decreased and comprehension is greatly affected. Students with Dyslexia “comprehend text read orally to them better than reading it themselves because of these issues” (Thorwarth, 2014, p. 53).

**Interventions**

According to Duff et al., “evidence shows that effective reading interventions incorporate training in letter-sound knowledge and systematic phonics instruction, and the application of these skills to the tasks of reading and spelling” (2014, p. 1234). Witzel and Mize, 2018, state that phonemic awareness needs to be explicitly taught to students with Dyslexia prior to teaching them phonics, as it will otherwise not make sense to them. They recommend three strategies that benefit students with Dyslexia. The first strategy they suggest is task analysis, which consists of breaking tasks down into small steps, as the process “incrementally allows a student to succeed with minimal error” (p. 34). The second strategy recommended is ensuring intervention includes explicit instruction. That means educators will gradually release knowledge from themselves to the student. “Explicit instruction has a high effect size for students with disabilities and at-risk concerns in… reading” (p. 34). The final strategy recommended by Witzel and Mize is the use of multi-sensory instruction. Interventions should include “auditory, visual, and kinesthetic/tactile sensory input to increase engagement and aid memory of different components of literacy” (p. 35). Williams and Lynch, 2010, add that instruction and intervention should not solely focus on an individual's weaknesses, but also on their strengths. They state that “identifying students’ strengths in thinking and reasoning is a key to success” (p. 69). Suggested strengths to incorporate into instruction and intervention include “reasoning, concept formation, comprehension, general knowledge, problem solving, vocabulary, and critical thinking” (p. 69).
According to Vaughn, Denton, and Fletcher (2010) individuals who are struggling with reading should begin receiving small group intervention (three to five students) for shorter lengths of time (20-30 minutes), three to five times a week for 8-24 weeks. For students who are significantly struggling with their reading, Vaughn et al., state that intervention times should increase to 30-60 minutes per day, five days a week in a small group setting (two to three students) or one-on-one with a teacher, for 20-30 weeks. They recommend that no matter the level of support required, interventions should include explicit instruction, high levels of active student engagement, and extended opportunities to practice their skills (Vaughn, 2010).

**Current Research**

Recent research on Dyslexia has focused on the cerebral brain function of individuals during the act of reading. Cognitive neuroscientists have determined that the left hemisphere of the brain operates in a linear, sequential manner, following a logical analytical, and propositional thought process. It is specialized in language skills. On the other hand, the right hemisphere operates in a non-linear, simultaneous fashion. It deals with non-verbal information, dreams, fantasy, and creative thinking. The right hemisphere is specialized toward visuospatial and oppositional thought (Vlachos, Andreou, & Delliou, 2013). Lavidor, Johnston, and Snowling, 2006, and Vlachos, Andreou, and Delliou, 2013, suggest that the cerebral hemispheres are not functionally equal. Deficits in the left hemisphere lead to phonological decoding deficiencies, whereas alterations of the right hemisphere lead to visuospatial deficits. Individuals with Dyslexia have decreased activity in their posterior left hemisphere, and an increase in right hemisphere involvement. This lack of synchronicity between the two hemispheres can prevent successful reading in individuals with Dyslexia. Their increased right hemisphere involvement explains the difference between people with Dyslexia and individuals whose brain function is
considered to be normal. It is also the reason why most individuals with Dyslexia do not successfully respond to frequently used phonological interventions. The cerebral differences often lead to educational implications, requiring teachers to ensure they are using appropriate assessment data to determine the strengths and needs of their students. Teachers then need to ensure they match their teaching instruction strategies to the preferred hemispheric style of their students. For individuals with Dyslexia, these right hemispheric preferences include the use of pictures, diagrams, charts, colour-coding, and guided imagery (Gregory, 2005; Vlachos, Andreou, & Delliou, 2013). Vlachos, Andreou, and Delliou, 2013, state that further research is needed to explore the association between brain hemisphericity and Dyslexia and how the acquisition of this knowledge can be used to increase the efficiency of the learning styles of individuals with Dyslexia.
Chapter 3

Considerations for Implementation of Product

The focus of this professional development session is to help participants develop an understanding of the diagnosis of Dyslexia and the importance of preventing reading failure. This session aims to clarify any misunderstandings surrounding Dyslexia; to guide educators on what to look for and what to screen for in students who are not progressing in their reading, and to recommend what educators can do to help those individuals who are not responding to commonly prescribed research based phonological interventions.

In many provinces, including British Columbia and Alberta, students with a diagnosis of Dyslexia do not receive supplementary funding. This means that screening, intervention, and support have to be provided by the teachers and the school. This session will educate teachers on what foundational skills to screen for while also suggesting a separate screener geared for two different age groups. This session will then offer participants examples of interventions that should be included to help their struggling readers. This session will conclude with an overview of recent research on identifying and assisting non-responders (students who do not respond to conventional intervention and who may require alternative supplementary intervention).

Importance of Preventing Reading Failure

Research shows that young students who get off to a solid start are less likely to stumble along the way, so identifying difficulties and implementing supports early is extremely important (Reutzel, 2015). Foundational reading skills such as phonemic and phonological awareness are typically developed in the primary grades and are the base that students require for later reading competency and proficiency. A lack of these foundational skills becomes a major cause for students becoming poor performers or struggling readers later in their education. (Brown, 2014).
Waiting until mid-elementary years to identify struggling readers comes with a high cost to our students. Many students with learning disabilities leave elementary school with severely deficient reading and writing skills and leave secondary school with little or no improvement in these areas; many dropping out before graduation. The risks go beyond school problems and may include social failures such as individuals who are “less likely to be employed, work less overall, report lower earnings, and are even less likely to have a bank account” (Missall et al., 2006, p.1). If we as educators are not identifying and supporting our students who struggle with reading early in their learning career, they will end up requiring greater supports from their community and may put a strain on our social systems. This is why the early identification of reading difficulties is so imperative.

**Universal Early Screening**

One of the best indicators of how well a student will learn to read in their first years of instruction is their understanding of phonemic and phonological awareness. Phonemic awareness is defined as “the ability to focus on and manipulate phonemes [sounds] in spoken words” (Ehri et al., 2001, p. 253). Researchers use phoneme isolation, identity, categorization, blending, segmenting, and deletion tasks to assess a student’s reading readiness. Along with phonemic awareness, a student’s understanding of phonological awareness is also important. The focus of phonological awareness is broader than phonemic awareness, including “identifying and manipulating larger parts of spoken language, such as words, syllables, and onsets and rimes” (Armbruster, Lehr, & Osborn, 2001, p. 3).
This Phonological Umbrella image is an excellent representation for educators to understand what literacy skills are considered to be Phonological Awareness skills. Syllables are defined as a word part that contains a vowel or, in spoken language, a vowel sound. Onset and Rime is defined as the parts of spoken language that are smaller than syllables but larger than phonemes. The Onset is the initial consonant(s) sound of a syllable and the Rime is the part of a syllable that contains the vowel and all that follows it (Armbruster, Lehr, & Osborn, 2001). It is important for educators to remember that Phonemic Awareness is a subsection of Phonological Awareness, as often these terms are used incorrectly. “Phonemic awareness can be taught and learned. Effective phonemic awareness instruction teaches children to notice, think about, and work with (manipulate) sounds in spoken language.” (Armbruster, Lehr, & Osborn, 2001, p. 5).
Phoneme isolation refers to recognizing individual sounds in a word including the beginning, middle, and end sound. Phoneme Blending is the ability to listen to a sequence of separately spoken phonemes, and then combine them to form a word, whereas Phoneme Segmentation is the ability to break a word into its separate sounds. Phoneme Deletion is the ability to recognize the word that remains when a phoneme is removed, Phoneme Addition is making a new word by adding a phoneme to an existing word, and Phoneme Substitution is the ability to substitute one phoneme for another to make a new word (Armbruster, Lehr, & Osborn, 2001).

It is very important for our early learners to be screened for foundational skills. Explicit instruction should begin in kindergarten and intervention should begin as early as possible if deemed necessary. Kindergarten teachers should be screening all their students for these foundational skills, however, many early learning educators are not trained to do so and therefore, nothing is being done to help identify these students and provide the much needed support at this critical age. Providing professional development opportunities can be one successful way of helping kindergarten teachers attain this knowledge (Allington, 2011).

One foundational skill screening tool is the Reading Readiness Screening Tool (RRST) created by; Joanne Heckbert, M.Ed (reading specialist), Judy Craig (consultant), Kathryn Burke, MA (executive director - Centre for Literacy), Linda Siegel, Ph.D (psychologist), Michele Pentyliuk, M.Ed (psychologist and teacher), and Sylvia Hannah, M.Ed (reading specialist) in association with the Learning Disabilities Association of Alberta (LDAA). (Appendix B)

The RRST is a one-on-one administered screening tool for students in kindergarten and grade one. The tool assesses a student’s phonemic awareness skills, as well as a few phonological skills. The RRST is developed and designed in the order of the developmental continuum (Chard, & Dickson, 1999).
It is recommended to stop the assessment as soon as the student is unable to successfully complete the tasks. Based on the results, educators are able to develop an intervention plan for the students who are missing foundational skills required to become good readers. According to Allington, 2001, “once we ensure that all students have access to sufficient high-quality reading lessons, few will meet the federal definition of students with learning disabilities…” (p. 42). Training opportunities for the Reading Readiness Screening Tool can be accessed through the Right To Read website at https://www.righttoread.ca/. Any research based screening tool that assesses the pre-reading phonemic and phonological awareness skills recommended by researchers should also provide the information educators need to begin interventions.

As research suggests, identifying students who are at risk of encountering reading problems may be the first step in reducing the incidence or severity of reading disabilities.
(Jenkins, & O’Connor, 2001). However, having said that, no matter how hard educators try there are always those students who ‘slip through the cracks’ and only appear on a teacher’s radar in the later grades. It is equally important to ensure these students get screened and begin receiving intervention as soon as possible. One tool, created to identify gaps in foundational skills for students in grades 2-6 is the Diagnostic Reading Tool-2 (DRT-2) which screens for deficits in phonemic awareness, phonics, fluency, vocabulary, and reading comprehension, created by the LDAA. (Appendix D) Training opportunities for the DRT-2 can be found at [https://www.righttoread.ca/workshops/grade-2-6](https://www.righttoread.ca/workshops/grade-2-6).

**Phonemic and Phonological Intervention**

Once students have been screened for foundational skills, educators can use the resulting data to implement evidence-based interventions to those students who have been identified. Duff and Clarke, 2011, state “it is not the use of a specific reading intervention programme that is important, but the inclusion of phoneme awareness and phonics” (p. 5). Research suggests that effective reading interventions include training in phoneme awareness and letter-sound knowledge that is explicit and systematic. It is recommended that the interventions incorporate the application of the skills learned during intervention to reading, spelling, and writing. It is important to ensure that all new content is taught through multi sensory instruction which incorporates auditory, visual, and kinaesthetic/tactile sensory input. (Hakkaart-van Roijen, 2001; Ehri et al., 2001; Duff, & Clarke, 2011; Duff et al., 2014; Witzel, & Mize, 2018). (Appendix C) Some evidence-based interventions supported by What Works Clearinghouse ([https://ies.ed.gov/ncee/wwc/](https://ies.ed.gov/ncee/wwc/)) include; Literacy Express (Farver, Lonigan, & Eppe, 2009; Lonigan, Farver, Clancy-Menchetti & Phillips, 2005; Preschool Curriculum Evaluation Research (PCER) Consortium, 2008); Reading Recovery ® (Pinnell, Deford, & Lysons, 1988; Pinnell,
For the students who will not be identified until later in their schooling, further intervention beyond phonemic awareness and letter-sound knowledge is typically necessary. The National Reading Panel recommends including phonemic awareness, phonics skills, vocabulary, fluency and reading comprehension (Odegard et al., 2008). Withal and Mize, 2018, suggest that due to their struggles with decoding and fluency, interventions should include support for decoding multisyllabic words. One such strategy is dividing a word by syllables, common prefixes, and suffixes. The students will need to understand their meanings in order for them to grasp the semantics of the words. An effective strategy for fluency development is repeated reading, to help improve hesitations, repetitions, misidentifications, self-corrections, and omissions. Withal and Mize, 2018, suggest interventions should include task analysis; breaking tasks down into small steps and sequentially prompting the students through each step. (Appendix E).

**Non-Responders**

Although individuals with Dyslexia have a difficult time with phonemic and phonological awareness, and studies have shown that interventions focusing on the foundational skills tasks can be effective in supporting our struggling readers, there are still 2% to 6% of children who do not respond to these phonologically based interventions (Odegard et al., 2008). Individuals who, despite normalization of phonological processing skills as a result of intervention, continue to struggle with word decoding are considered to be ‘non-responders’.
These learners require alternative support and assistance. Recent advancement in technology and brain imaging has allowed researchers to gain new information about how the brain functions in individuals with Dyslexia. Odegard et al., 2008, suggest that there are fundamental differences in brain activation between students who successfully respond to phonological based intervention and those who do not. “After treatment, responders demonstrated a more normalized reading network, but treatment for non-responders continued to show abnormalities in the brain circuit…” (p. 3). This means that there is something neurologically different in the brains of non-responders. Non-responders require an alternative supplementary plan of intervention. A plan that makes sense to the way their brains process.

**Top-Down Reading Intervention**

When looking for a supplementary intervention programs that may better match the way non-responders brains process, it is important to look for a program that follows the top down approach to reading. Top down programs appeal to learners who rely heavily on the right hemisphere of their brains. They need a program that allows for them to start with the big picture. The top down program should begin with an idea, then introduce words and sentences related to the main idea. From there, the individual will be required to read the whole word in isolation and then differentiate the individual sounds.
One such reading intervention is the Right Hemisphere Reading Intervention Method (Hedican, 2013). This method is an extension of the Broun and Oelwein Literacy Method (2007), which was designed for exceptional learners including those with Down Syndrome and Autism.

The Right Hemisphere Reading Intervention Method follows a top down reading approach. It requires the interventionist to build a relationship encouraging the student to come up with personal topics that create emotional connections and construct words that are highly visual. Once a topic has been chosen, the intervention begins helping the student learn to read those meaningful words. The program follows three stages to assist participants in learning words. First students visually match words by discriminating what looks the same and what looks different. Then the student must select the word from an oral command. And finally, the student will read the words off of flash cards. After the student has successfully completed those steps, they then use their newly learned words along with common, familiar or sight words and begin creating sentences that are related and meaningful to the topic. Those sentences are recorded and saved for later use where the students can use them to illustrate pictures to match their sentence.

It is important for educators to ensure that their struggling readers have received evidence-based phonological interventions first to ensure they have those necessary skills before moving on to include a supplementary top-down reading intervention program.
Chapter 4

Reflection

The goal of this professional development session is to open educators to the idea that students with learning disabilities, including Dyslexia, do not necessarily require a full-scale psycho-educational assessment which can be time consuming and costly for the school or the student’s family. The diagnosis of a learning disability does not provide the student or school with any additional funding or support and may even delay the start of any interventions. With proper screening, support, and intervention, educators can help students who may have a potential learning disability sooner, without needing to wait for an official diagnosis. The design for this session is to educate and support teachers who are just beginning their teaching journey and who may need assistance in determining and supporting their striving readers. It is also designed to support teachers who have tried everything they have learned previously to support their striving readers and who are in need of some new intervention strategies. The purpose of this session is not to promote specific intervention programs, but to educate teachers on what they should be looking for in an intervention program, based on research, that will best assist their students as well as provide support in a timely manner.

After reviewing the most recent definition of Dyslexia, participants will be given a handout sharing the current myths and misconceptions surrounding Dyslexia. The purpose of this will be to ensure that everyone attending the session has a clear understanding of the meaning of Dyslexia. The hope will be to engage teachers to have an open mind as the research is presented and possible new supplementary intervention techniques are shared. The session will continue by focusing on the importance of universal early screening and identifying which skills should be a part of the screening process. This universal early screening process will flag those students who
need extra, more intensive, research-based, explicit phonemic and phonological awareness instruction and intervention. The session will share with educators what these interventions need to include in order to be the most effective and most successful. A few sample examples will be shared, however, as stated previously the purpose of this session is not to tell teachers what interventions to use, but to help guide them in finding an intervention that works for them. There will always be that 2%-6% of students who will not respond to the phonemic and phonological interventions (Odegard et al., 2008), and will therefore require an additional approach to their reading intervention. Until recently, there has not been a great deal of research available on how educators can support these non-responders. This will lead to the final part of the professional learning session which will focus on right-hemisphere brain research and top-down reading instruction methods that can be helpful when working with those students who require a different approach to reading instruction.
References


discrimination of speech speech sounds in developmental Dyslexia. *Speech Lang Hear
Res, 44*, 384-399. doi:10.1044/1092-4388(2001/032)

Shaywitz, S. E., Shaywitz, B. A., Pugh, K. R., Fulbright, R. K., Constable, R. T., Mencl.,
reading in Dyslexia. *Proc Natl Acad Sci USA, 95*, 2636-2641.

Shaywitz, B. A., Shaywitz, S. E., Pugh, K. R., Mencl, W. E., Fulbright, R. K., Skudlarski,
with developmental Dyslexia. *Biol Psychiatry, 52*, 101-110. doi:10.1016/s0006-
3223(02)01365-3

and Dyslexia: Examination of a critical assumption. *Journal of Learning Disabilities,
32(1)*, 2-5. doi:10.1177/002221949903200101

219-234. doi:10.1007/bf00309831

Thorwarth, C. (2014). Debunking the myths of Dyslexia. *Leadership and Research in
Education: The Journal of the Ohio Council of Professors of Educational Administration,
(1)*. 51-65

necessary for students with severe reading difficulties. *Psychology in the Schools, 47(5)*,
432-444. doi: 10.1002/pits.20481


Appendix A

Dyslexia Myths and Misconceptions Handout

There are many myths and misconceptions surrounding Dyslexia. It is important to clear them up in order for educators to begin to understand what they need to be looking for in their students and how they can begin to help them.

Link to the google doc:

Myths and Misconceptions Handout
**Dyslexia Myths & Misconceptions**

<table>
<thead>
<tr>
<th>Myth</th>
<th>Truth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversals of letters and words are a sign of dyslexia.</td>
<td>Reversals of letters and words are typical of children up to age 7.</td>
</tr>
<tr>
<td></td>
<td>The difficulty lies in auditory processing and memory.</td>
</tr>
<tr>
<td>Words ‘jump around on the page’ for persons with dyslexia.</td>
<td>Dyslexia is a problem with language processing at the phoneme level rather than a visual problem.</td>
</tr>
<tr>
<td>Coloured overlays improve the reading skills of children with dyslexia.</td>
<td>Coloured overlays do not improve reading rate or accuracy.</td>
</tr>
<tr>
<td>Children with dyslexia have low intelligence.</td>
<td>Children with dyslexia have average and above average intelligence.</td>
</tr>
<tr>
<td></td>
<td>Individuals with dyslexia are often late in developing language and may have difficulty formulating speech sounds after the age when these are typically acquired.</td>
</tr>
<tr>
<td>Dyslexia occurs more often in boys than in girls.</td>
<td>Boys may be referred for testing for dyslexia more often than girls.</td>
</tr>
<tr>
<td>Dyslexia is the result of brain damage.</td>
<td>The term <em>dyslexia</em> grew out of studies of persons with brain damage, but children with dyslexia do not have brain damage. Dyslexia tends to run in families.</td>
</tr>
</tbody>
</table>

Information retrieved from: “Dyslexia: What Teachers Need to Know”
Joan A. Williams, & Sharon A. Lynch, 2010.
Appendix B

Reading Readiness Screening Tool (RRST)

The RRST is a one-on-one administered screening tool for students in kindergarten and grade one. The tool assesses a student’s phonemic awareness skills, as well as a few phonological skills. The RRST is developed and designed in the order of the developmental continuum (Chard, & Dickson, 1999).

![Diagram of phonological awareness activities]

**Figure 1.** A continuum of complexity of phonological awareness activities.

Training opportunities for the Reading Readiness Screening Tool can be accessed through the Right To Read website at https://www.righttoread.ca/. Permission has been given to share part of the RRST.

Attached are a few example pages from the Reading Readiness Screening Tool.
Reading Readiness Screening Tool

Recording Booklet

Complementary Documents:
Student Stimulus Booklet
Teacher Manual

© Learning Disabilities Association of Alberta, March 2018 Version, Reading Readiness Screening Tool
# Student Summary Score Sheet

(Fill out using Excel template)

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher:</td>
<td>Birthdate:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pretest age (Y:M):</th>
<th>Posttest age (Y:M):</th>
<th>Pretest date:</th>
<th>Posttest date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Subtest Title</th>
<th>Difficulty</th>
<th>Page</th>
<th>Pretest Score</th>
<th>Posttest Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object Naming</td>
<td>Expressive Vocabulary</td>
<td>3</td>
<td>/10</td>
<td>/10</td>
<td></td>
</tr>
<tr>
<td>Sentence Syntax</td>
<td>Oral Cloze</td>
<td>4</td>
<td>/5</td>
<td>/5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oral Expression Skills</strong></td>
<td></td>
<td></td>
<td>/15</td>
<td>/15</td>
<td></td>
</tr>
<tr>
<td>Rhyme</td>
<td>Rhyme Detection</td>
<td>*</td>
<td>5</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Rhyme Generation</td>
<td>**</td>
<td>6</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td>Segmenting</td>
<td>Word Detection</td>
<td>*</td>
<td>7</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Syllable Detection</td>
<td>**</td>
<td>8</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Phoneme Segmenting</td>
<td>***</td>
<td>9</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td>Blending</td>
<td>Syllable Blending</td>
<td>*</td>
<td>10</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Phoneme Blending</td>
<td>**</td>
<td>11</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td>Deletion</td>
<td>Syllable Deletion</td>
<td>*</td>
<td>12</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Phoneme Deletion</td>
<td>**</td>
<td>13</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td>Isolation</td>
<td>Initial Sound Isolation</td>
<td>*</td>
<td>14</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Final Sound Isolation</td>
<td>**</td>
<td>15</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td>Medial Sound Isolation</td>
<td>***</td>
<td>16</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Phonological Skills</strong></td>
<td></td>
<td></td>
<td>/60</td>
<td>/60</td>
<td></td>
</tr>
<tr>
<td>Text Awareness</td>
<td>Print Concepts</td>
<td>*</td>
<td>17</td>
<td>/7</td>
<td>/7</td>
</tr>
<tr>
<td>Identification</td>
<td>Letter Identification</td>
<td>*</td>
<td>18</td>
<td>/26</td>
<td>/26</td>
</tr>
<tr>
<td></td>
<td>Sound Identification</td>
<td>**</td>
<td>19</td>
<td>/24</td>
<td>/24</td>
</tr>
<tr>
<td>Recognition</td>
<td>Word Recognition</td>
<td>*</td>
<td>20</td>
<td>/10</td>
<td>/10</td>
</tr>
<tr>
<td></td>
<td>Non-Word Decoding</td>
<td>**</td>
<td>21</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td>Encoding</td>
<td>Spelling</td>
<td>**</td>
<td>22 &amp; 21</td>
<td>/5</td>
<td>/5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Print-Based Skills</strong></td>
<td></td>
<td></td>
<td>/77</td>
<td>/77</td>
<td></td>
</tr>
</tbody>
</table>

* easier ** harder *** hardest

© Learning Disabilities Association of Alberta, March 2018 Version, Reading Readiness Screening Tool
Rhyme Detection

**Script:**

"Here is a picture of a cat. Which word rhymes with cat? fish, sun, hat"

Point to and name each of the three pictures. Pause a second between each word.

If the student responds incorrectly, provide the correct answer (hat).

For the example only, explain that hat rhymes with cat because they sound the same at the end /at/.

If a child appears to be having difficulty with memory, use alternate script. Note use of alternate script on recording booklet.

**Alternate Script**

"Here is a picture of a cat. Which word rhymes with cat?

Cat — Fish? | Cat — Sun? | Cat — Hat?"

Continue with remainder of test using alternative script model.

**Second prompt (use as needed):**

<table>
<thead>
<tr>
<th>Stimulus Word</th>
<th>Response Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>spoon</td>
<td>dog</td>
</tr>
<tr>
<td></td>
<td>moon</td>
</tr>
<tr>
<td></td>
<td>ship</td>
</tr>
</tbody>
</table>

**Stimulus (use as necessary throughout test):**

"Which word rhymes with__________.

Note: Accompanying Student Stimulus Booklet provided.

<table>
<thead>
<tr>
<th>Stimulus Word</th>
<th>Response Items</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 boat</td>
<td>foot</td>
<td>shoe</td>
</tr>
<tr>
<td>2 key</td>
<td>cow</td>
<td>tree</td>
</tr>
<tr>
<td>3 chair</td>
<td>car</td>
<td>door</td>
</tr>
<tr>
<td>4 bell</td>
<td>shell</td>
<td>dress</td>
</tr>
<tr>
<td>5 sock</td>
<td>clown</td>
<td>clock</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Rhyme Detection

<table>
<thead>
<tr>
<th>Instruction Example</th>
<th>[Image of cat]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Image of fish]</td>
<td>[Image of sun]</td>
</tr>
<tr>
<td>[Image of top hat]</td>
<td></td>
</tr>
</tbody>
</table>

© Learning Disabilities Association of Alberta, March 2018 version, Reading Readiness Screening Tool, Student Stimulus
| Practice Example | ![Spoon](image.png) | ![German Shepherd](image.png) | ![Moon and Clouds](image.png) | ![Ship](image.png) |
Appendix C

Phonological Intervention Lesson Ideas

Here are a few ideas that you can use during phonological intervention. The interventions ideas include those found under the Phonological Intervention umbrella.

Image retrieved from: https://kelseytoolkit.weebly.com/

Although most of the materials on this list are from www.teacherspayteachers.com you can easily create your own materials. The purpose of providing you with these links is to allow you to begin right away. There are both free and paid links.

Link to the google doc:
Phonological Awareness Intervention Ideas
Phonological Awareness Intervention Ideas

Rhyming Intervention Ideas

Rhyme Recognition

Students who struggle to recognize if two words rhyme will benefit from extra practice. The ability to detect a rhyme is a necessary skill for beginning literacy acquisition.

- Orally ask students if two words rhyme

  ![Image](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762)

- Show students pictures of objects and have them decide between a few choices of possible rhyming words

  ![Image](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432)
Rhyme Generation

Producing words with common word patterns often have similar spellings that can be used when learning to read and spell.

- Orally ask students to name words that rhyme with your suggested word

What is a word that rhymes with ten?

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762

- Play ‘Roll and Rhyme’ - having students create a rhyming word for the picture they roll

https://www.teacherspayteachers.com/Product/Roll-a-Rhyme-293311

Link to Reading

As you work with students who are working on building their rhyming skills, be sure to include texts/poems that have rhymes within them. The students can begin by pointing out the rhymes, and may eventually be able to generate the correct rhyming word to finish a sentence.

**Words in Sentences Intervention Ideas**

The ability to segment sentences into their individual words is an early phonological awareness skill that usually begins to develop quite early. I have my students clap words.

- Have students sort pictures of letters, words, and sentences.

![Image of a sorting activity](https://www.teacherspayteachers.com/Product/Letter-Word-Sentence-Sort-2235576)

- Orally give the students a simple sentence. Have them clap once for each word.

![How many words are in this sentence?](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762)
**Syllable Intervention Ideas**

**Syllable Detection**

Before a student will be able to break a word into its individual sounds (phonemes), they need to be able to break a word into syllables. I usually have the student tap out how many syllables are in a word either on the table or on their lap.

- Have students sort picture cards by how many syllables they have

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432

https://www.teacherspayteachers.com/Product/Syllable-Sort-Literacy-Work-Station-222090
Syllable Blending

Blending syllables is much easier than blending phonemes. Therefore, learning how to blend syllables will help students learn the concept of blending.

- There are a few options for using the syllable blending cards. You can put balls of play-doh in each square and have the students squish one ball for each syllable they say. You could also have them put a chip/counter on each square for each syllable they say.

Syllable Deletion

The ability to manipulate syllables will lead to the ability to manipulate phonemes.

- Orally ask a student to say a multi-syllable word and then ask them to say the word without saying one of the syllables at the beginning or the end of the word.


https://www.teacherspayteachers.com/Product/Syllable-Deletion-Cards-3818704
Link to Reading

As your students begin their reading journey and they come across a tricky word, help them by breaking the word into syllables and then putting it back together.

Link to Writing

When a student comes to a tricky word to spell, have them break the word into syllables and then draw them syllable boxes. In each box, they only need to include the sounds in the syllable they hear, remembering that each box needs a vowel sound.
Onset-Rime Intervention Ideas

Word Families (Rime)

- Have students sort picture cards by rime at the end of the word.

[Image]

https://www.teacherspayteachers.com/Product/Word-Family-Picture-Sort-3084901

- Have students sort word cards by rime at the end of the word.

[Image]

https://www.teacherspayteachers.com/Product/Word-Family-Sorts-for-Word-Work-249936
Onset-Rime Blending

- Have students roll both the onset die and rime die and put the two parts together to make either a nonsense word or a real word.

https://www.teacherspayteachers.com/Product/Roll-Blend-Write-It-An-Onset-Rime-Blending-Center-1622218

- Have your student pull an onset piece and a rime piece to create either a nonsense word or a real word

https://www.teacherspayteachers.com/Product/Onset-Rime-Phonics-Center-1381725
**Phoneme Intervention Ideas**

**Phoneme Blending**

Blending the sounds within a word, without any breaks between the phonemes, is a necessary skill for being able to use letter-sound knowledge in decoding words.

- Orally say the sounds of a word and ask your student to put the sounds together to make a word.

  ![Phoneme Blending Example](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762)

- Have your student say each sound on the phoneme blending card and then run their finger on the arrow as they put the sounds together to make the word.

  ![Phoneme Blending Example](https://www.teacherspayteachers.com/Product/Phoneme-Blending-2303992)
Phoneme Segmenting

Being aware of the individual sounds within a word helps students gain an understanding of the alphabetic principle.

- Orally ask your student to stretch out a word saying all of the sounds. I use my arm to assist in sounding out a word. The student starts at the fingertips of their right hand and moves up their arm touching their wrist, elbow, and shoulder for each sound.

![Stretch out: fun](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762)

- There are a few options for using the phoneme blending cards. You can put balls of play-doh in each square and have the students squish one ball for each syllable they say. You could also have them put a chip/counter on each square for each phoneme they say. You can extend the activity by having the student use little magnets for each phoneme and then use a magnetic wand to scoop all the sounds together to make the word.

![phoneme blending cards](https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432)
Phoneme Deletion

The ability to delete sounds within words will help to create different words. This is an advanced phonological awareness skill. These activities will help students to pay attention to the subtle differences that exist between similar sounding words when spelling and correctly reading similar words.

- Orally ask your student to say a word and then ask them to say the same word without either the beginning sound or the final sound. Never delete the middle sound.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762
Initial Sound

Students need to be able to clearly hear and distinguish the initial sound in a word and then attach the corresponding letter to the sound.

- Orally say a word and ask your student to tell you the initial sound. Be sure they tell you the sound and not the letter.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762

- Have students match pictures that have the same initial sound.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432
Final Sound

Students need to be able to clearly hear and distinguish the initial sound in a word and then attach the corresponding letter to the sound.

- Orally say a word and ask your student to tell you the final sound. Be sure they tell you the sound and not the letter.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762

- Have students match pictures that have the same final sound.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432
Medial Sound

Students need to be able to clearly hear the medial sounds embedded within a word in order to attach the corresponding letter. This is more difficult than hearing and distinguishing the initial and final sound.

- Orally say a word and ask your student to tell you the middle sound. Be sure they tell you the sound and not the letter.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762

- Have students match pictures that have the same middle sound.

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432

Link to Reading

As your students work on sounding out new words, remind them to break the word into each of its individual sounds and then blend them back together.

Link to Writing

Encourage your students to ensure that as they sound out new words, they are including each sound they hear when they segment the word. They can double check that they have a beginning, middle, and end sound.
Appendix D

Diagnostic Reading Tool - 2 (DRT-2)

The DRT-2 is a tool that screens for deficits in phonemic awareness, phonics, fluency, vocabulary, and reading comprehension for students in grades 2-6, created by the LDAA. Training opportunities for the DRT-2 can be found at


Attached are a few example pages from the Diagnostic Reading Tool -2.
## Student Summary Score Sheet

### Concepts
- **Syllables**
  - Syllable blending: * 2 /10
  - Syllable segmenting: ** 3 /10
- **Phonemes**
  - Phoneme blending: * 4 /10
  - Phoneme segmenting: ** 5 /10
- **Letter Sounds**
  - Sound identification: * 6 /26
- **Word Spelling**
  - Phonically regular: 7 /10
  - Phonically less regular: 8 /10
- **Word Reading**
  - Step 1 – short vowels: * 9 /10
  - Step 2 – short vowels: ** 10 /10
  - Step 3 – short vowels: *** 10 /10
  - Step 4 – long vowels: * 11 /10
  - Step 5 – long & short vowels: ** 11 /10
  - Step 6 – r-controlled vowels: * 12 /10
  - Step 7 – vowel diphthongs: ** 12 /10
  - Step 8 – vowel diphthongs: *** 13 /10

### Passages
- **Step 1 – short vowels**
  - Grade Equivalent: 0.6
  - Page: 14
  - Words %: 14
  - Fluency %tile: 14
  - Comprehension %
    - Literal: 14
    - Inferential: 14
    - Vocabulary: 14
- **Step 2 – short vowels**
  - Grade Equivalent: 1.6
  - Page: 17
  - Words %: 17
  - Fluency %tile: 17
  - Comprehension %
    - Literal: 17
    - Inferential: 17
    - Vocabulary: 17
- **Step 3 – short vowels**
  - Grade Equivalent: 2.6
  - Page: 20
  - Words %: 20
  - Fluency %tile: 20
  - Comprehension %
    - Literal: 20
    - Inferential: 20
    - Vocabulary: 20
- **Step 4 – long vowels**
  - Grade Equivalent: 3.4
  - Page: 23
  - Words %: 23
  - Fluency %tile: 23
  - Comprehension %
    - Literal: 23
    - Inferential: 23
    - Vocabulary: 23
- **Step 5 – long & short vowels**
  - Grade Equivalent: 4.6
  - Page: 26
  - Words %: 26
  - Fluency %tile: 26
  - Comprehension %
    - Literal: 26
    - Inferential: 26
    - Vocabulary: 26
- **Step 6 – r-controlled vowels**
  - Grade Equivalent: 5.5
  - Page: 29
  - Words %: 29
  - Fluency %tile: 29
  - Comprehension %
    - Literal: 29
    - Inferential: 29
    - Vocabulary: 29
- **Step 7 – vowel diphthongs**
  - Grade Equivalent: 6.4
  - Page: 32
  - Words %: 32
  - Fluency %tile: 32
  - Comprehension %
    - Literal: 32
    - Inferential: 32
    - Vocabulary: 32
- **Step 8 – vowel diphthongs**
  - Grade Equivalent: 7.5
  - Page: 35
  - Words %: 35
  - Fluency %tile: 35
  - Comprehension %
    - Literal: 35
    - Inferential: 35
    - Vocabulary: 35

Diagnostic Reading Tool – 2 © Joanne Heckbert
## Syllable Blending

**Script:**

"I will say the parts of a word. You guess what the word is. What word is this?"

Pause for a second between syllables.

"cross — walk"

**Prompt**

If the student repeats the word in parts, say:

"Say it like you speak, like this — crosswalk."

**Second prompt (use as needed):**

"hair — cut"

**Stimulus (use as necessary throughout test):**

"What word is this __________?"

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pop — corn</td>
<td>popcorn</td>
<td>1 0</td>
</tr>
<tr>
<td>2 pic — nic</td>
<td>picnic</td>
<td>1 0</td>
</tr>
<tr>
<td>3 ti-ger</td>
<td>tiger</td>
<td>1 0</td>
</tr>
<tr>
<td>4 buff-al-o</td>
<td>buffalo</td>
<td>1 0</td>
</tr>
<tr>
<td>5 can-is-ter</td>
<td>canister</td>
<td>1 0</td>
</tr>
<tr>
<td>6 di-no-saur</td>
<td>dinosaur</td>
<td>1 0</td>
</tr>
<tr>
<td>7 rhi-noc-er-os</td>
<td>rhinoceros</td>
<td>1 0</td>
</tr>
<tr>
<td>8 mac-a-ro-ni</td>
<td>macaroni</td>
<td>1 0</td>
</tr>
<tr>
<td>9 im-ag-in-a-tion</td>
<td>imagination</td>
<td>1 0</td>
</tr>
<tr>
<td>10 vet-er-in-ar-i-an</td>
<td>veterinarian</td>
<td>1 0</td>
</tr>
</tbody>
</table>

**Total** /10
## Step 8: Vowel Diphthongs ('oi/oy'), Three Syllables (prefixes & suffixes)

<table>
<thead>
<tr>
<th>Word</th>
<th>Incorrect Response</th>
<th>Corrected</th>
<th>&gt; 1 sec.</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>distrusted</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>usefulness</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>unkindly</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>invasive</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>employment</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>avoidable</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>interject</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>replenish</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>magnetic</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td>inflection</td>
<td></td>
<td></td>
<td></td>
<td>1 0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>1/10</td>
</tr>
</tbody>
</table>

## Passage Reading

**Instructions:**

1) Choose the passage level based on the level at which the student was able to read approximately 70% of the single words correctly at the rate of one second or less per word.

2) Ask the student to read the passage aloud. Time the reading. Mark miscues, omissions, and additions.

3) After the student has completed the oral reading, remove the passage, and ask the comprehension questions. Write the student’s responses in the spaces provided.

4) If the student struggled with either reading the words correctly, was slow, or had difficulty answering the questions, select an easier passage and repeat. If the passage was too easy, select a harder passage. (See Teacher Manual for guidelines)

5) When the assessment has been completed, complete the Analysis Sheet and record the information on the Student Summary Score Sheet.
Diagnostic Reading Tool - 2

Step 1

Can a cat be a pet for you? Will a kitten fit in best? Do you want a cat to sit on your lap? Do you need a tom cat to kill a rat?

When you get a cat for a pet, you have to look after it. That can be a big job. It will beg you when it wants to be fed. It has to be fed well so it will not get fat. You will have to clean its cat box. There are vet bills if your cat gets sick.

A cat will run after a ping-pong ball. It will bat at a bug and a catnip toy. It will play with a napkin or in a bag. A cat will sit on a sill and nap on your bed.

A cat will tell you if it is sad or mad. If it is upset, it can hiss or get in a huff. Do not yell or hit your cat but pet it and it will rub up on you. If you give it lots of love, it will love you back.
Diagnostic Reading Tool - 2: Analysis Sheet

Step 1 – Flesch-Kincaid Readability = Grade 0.6

Reading Rate

# of words read correctly ÷ # of seconds × 60 = Words Correct per Minute

_____ ÷ _____ × 60 = _____ WCPM

Percentile

Oral Reading Fluency Rubric

Pacing

___ (4 pts.) Fluent and accurate
___ (3 pts.) Some pauses and hesitations
___ (2 pts.) Word-by-word reading
___ (1 pt.) Very slow/very fast inaccurate

Punctuation

___ (4 pts.) Natural solid use
___ (3 pts.) Some pauses too long or short
___ (2 pts.) Occasionally ignored
___ (1 pt.) Frequently ignored

Expression

___ (4 pts.) Supports meaning
___ (3 pts.) Some phrasing
___ (2 pts.) Lack of enthusiasm
___ (1 pt.) Almost absent

Scoring Guide

10 – 12 pts. = Very good
7 – 9 pts. = Good
4 – 6 pts. = Fair
3 pts. = Poor

Word Miscue Analysis

High-frequency Word Miscue

Phonic Word Miscue

Word Matching Omissions Additions

Diagnostic Reading Tool – 2 © Joanne Heckbert
Diagnostic Reading Tool - 2
Step 1 - Comprehension Questions

Literal:

What facts or details do you remember?

1. 

2. 

3. 

4. What will a cat do when it wants to be fed? (beg you)

5. What does a cat do when it's not playing or eating? (sit on a sill, nap on your bed)

Inferential:

6. What is the main idea of this story? (having a cat for a pet)

7. Why does a cat need a cat box? (for its litter, pee or poop, going to the bathroom)

8. Why should you play with your cat? (so it will be healthy and happy)

Vocabulary:

9. What is “a sill”? (a shelf or the ledge at the bottom of a window)

10. What does “in a huff” mean? (ignore, walk away, be annoyed, be offended)
Appendix E

Decoding and Fluency Intervention Ideas

Decoding and fluency intervention strategies will benefit students who are not identified as struggling readers until later in school.

Link to the google doc:

Decoding and Fluency Intervention Ideas
Decoding and Fluency Intervention Ideas

Decoding Multisyllabic Word Intervention

It is important to teach students the 6 different types of syllables to help them decode larger words. According to https://www.allaboutlearningpress.com/how-to-teach-syllable-types, the six types of syllables are:

1. A **closed syllable** ends in a consonant. The vowel has a short vowel sound, as in the word *bat*.
2. An **open syllable** ends in a vowel. The vowel has a long vowel sound, as in the first syllable of *apron*.
3. A **vowel-consonant-e syllable** is typically found at the end of a word. The final e is silent and makes the next vowel before it long, as in the word *name*.
4. A **vowel team syllable** has two vowels next to each other that together say a new sound, as in the word *south*.
5. A **consonant+l-e** syllable is found in words like *handle*, *puzzle*, and *middle*.
6. An **r-controlled syllable** contains a vowel followed by the letter r. The r controls the vowel and changes the way it is pronounced, as in the word *car*.

There are many intervention ideas on www.teacherspayteachers.com to get you started. Here is one example:

https://www.teacherspayteachers.com/Product/Multisyllabic-Words-Decoding-using-Syllable-Types-3151260?gclid=EAIaIQobChMIqOba5Kmg4QIVXiCtBh0YFweOEAYYAiABEgLYyvD_BwE
Prefix and Suffix Intervention

A **prefix** is a group of letters placed before the root of a word. For example, the word “unhappy” consists of the prefix “un-” [which means “not”] combined with the root (or stem) word “happy”; the word “unhappy” means “not happy.”

A **suffix** is a group of letters placed after the root of a word. For example, the word flavorless consists of the root word “flavor” combined with the suffix “-less” [which means “without”]; the word “flavorless” means “having no flavor.”


There are many intervention ideas on [www.teacherspayteachers.com](http://www.teacherspayteachers.com) to get you started. Here is one example:

https://www.teacherspayteachers.com/Product/Prefix-and-Suffix-Activities-2461684
Fluency Intervention

Fluency is defined as the ability to read with speed, accuracy, and proper expression. In order to understand what they read, children must be able to read fluently whether they are reading aloud or silently. When reading aloud, fluent readers read in phrases and add intonation appropriately. [http://www.readingrockets.org/helping/target/fluency](http://www.readingrockets.org/helping/target/fluency)

Appendix F

Right Hemisphere Reading Intervention Method

Research suggests that individuals with Dyslexia have an increased involvement with the right hemisphere of their brain when reading. The right hemisphere operates in a non-linear fashion, specialized in visuospatial thought (Vlachos, Andreou, & Delliou, 2013). The Right Hemisphere Reading Intervention Method follows the top down reading approach allowing students to completely engage in literacy based on how their brain processes language (Hedican, 2013).

Information can be accessed by emailing the creator at Jennifer.Hedican@sd71.bc.ca or on her website (soon to be finished) at www.rightbrainreading.com

Attached are a few example pages from the Right Hemisphere Reading Intervention Method.
A Right Hemisphere Reading Intervention Method

Right brain

I am the right brain.
I am creativity. A free spirit. I am passion.
Yearning. Sensuality. I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am everything I wanted to be.

INSTRUCTOR’S MANUAL 2nd edition

Jennifer Hedican
VIU Masters in Educational Leadership 2013
1. Explain the two different ways to teach reading

For your initial session, begin with explaining the two different teaching methods to teach reading using the top down and bottom up illustrations (templates 1 & 2).

"The typical way teachers teach reading is from the bottom up.
We start with the sounds….like sssssss or aaaaaaa. We teach how sounds blend into words – sssssss, aaaaaaaa, ttttttt, s..a..t.., sat.
We teach rhyming, such as hat, cat, mat.
We then teach the word in isolation or in easy sentences – I sat.
Then we put the sentences into meaning – I sat on a mat."

"Another way to teach reading is from the top down.
We start with an idea of something you like – that idea can be thought of in an image like a picture from a camera or in a moving image, like a video. We can see action, color and detail. We can hear sounds and feel emotions. (I give an example at this point)
Then we talk about that idea. I write down the words you’ve talked about with that idea and then I decide which ones you will learn. You learn the word completely, just like you know your name. We don’t sound it out (use their name as an example of sounding it out with pronunciation that matches how it’s spelled, not how it is said.). We teach in an easy structured process for you to learn the words like that – (I snap my fingers to show it’s quick and just like their name).
The last part of the triangle is the sounds of the words."

"We have found that some students brains learn to read better this way (the top down method) and we want to use this method to teach you how to read."

The next steps are to find out things that the student is interested in and then use one of those topics to do their first teaching session."
5. Three Stages of Reading Acquisition

There are three different stages of reading acquisition with this method: Matching, Selecting, and Reading. Each stage has 3 repetitions with the words to strengthen their acquisition of the word.

5A. Matching

The student will be matching up the words on the flashcards onto the words on the grid. It requires the student to be able to visually discriminate between same and different and to match up.

Place the grid in front of the child.

```
  dog  wags
  run  tail
```

Hold one flashcard facing the student, say the word on the card, ask the child to repeat that word, you say the word again and hand it to the student to match up to the word on the grid.

The discussions at this stage of the reading acquisition is critical to access their right hemisphere for learning the word. You want to talk about the visual aspect of the word, the movement, the sounds and the emotions of each word. Ask the student questions to have them provide this information for you. Allow the student to use movement to show you their connection with that word too. Each word should have 5-10 seconds of description/discussion at the Matching Stage.

Do this for all remaining flashcard words.

Do the matching stage two more times, for three times in total. Check off each time you do a matching repetition (templates 6 or 7). Have the student see this so they can track the progress of their learning tasks.
5B. Selecting

The student will select cards that have been placed out on the table in front of them and match them up to the words on the grid.

Keep the grid in front of the child, as it provides a nice support to help learn the words. Place the word cards in random order and arrangement in front of the child.

Say one of the words on the flashcards, along with some of the information that they talked about in the matching stage or when talking about the topic. As you do this stage, use the connections they talked about with the words to help cue them to what ones to select.

Have the student select the card from the ones in front of them and have them place it on the grid again. Have them read the word as they select it.

If the student has difficulty, point to the word on the grid and ask them to find it again.

Also place their name card or any instantly read cards on the table for this stage of reading acquisition to strengthen their confidence and connection with the topic. Ask the student to select that word too within each repetition.

Depending on the student’s ability to do the selecting and learning, you can also add in other connections that are relevant to that word but aren’t tied to the current topic. This encourages them to be able to generalize the word to other topics. This is best done on the last repetition.

Do the selecting stage two more times, for three times in total. Check off each time you do a selecting repetition (templates 6 or 7). This helps the student track the progress of their learning tasks.

2 Selecting
- 1
- 2
- 3
5C. Reading

The student will read the word when you hold up the word card to show them and then they will place it on that word on the grid.

Present the words in random order for the students to read. Include the words that they knew instantly too in this stage.

Don’t give any clues about the words unless they get stuck. Ask if they want help or time. If they need help, offer contextual clues – things you have talked about earlier in the learning stages, rather than cueing them with phonetic information.

Do the reading stage two more times, for three times in total. Check off each time you do a selecting repetition (templates 6 or 7). This helps the student track the progress of their learning tasks.

These three stages of reading acquisition are typically done during one learning session. If you can get to the next stage of building sentences during that same learning session, that is optimal but not as critical as trying to keep all three of these stages together.
Appendix G

Breaking Down Dyslexia: What Is It, How Do We Know, And How Can We As Educators Help?

This professional development session will aim to answer the following questions for its participants.

*How can educators identify and support their struggling readers without waiting for and paying for unnecessary assessments? Do schools need to have an official Dyslexia diagnosis in order to help their students, or can teachers be trained to screen and support their striving readers within their own school? How can educators support students who have received intervention but continue to struggle at reading?*

The session is will support educators on their path to understanding Dyslexia and helping those students they believe may need support.

Link for the presentation:

[Breaking Down Dyslexia: What Is It How Do We Know, And How Can We As Educators Help?](#)
Welcome everyone.

What the session will try to answer for participants:

*How can educators identify and support their struggling readers without waiting for and paying for unnecessary assessments? Do schools need to have an official Dyslexia diagnosis in order to help their students, or can teachers be trained to screen and support their striving readers within their own school? How can educators support students who have received intervention but continue to struggle at reading?*
Land Acknowledgment from the area you are presenting in.
Share your journey that got you to this point. Building a relationship with the participants and sharing your qualifications for delivering the session.
Session Outline

Myths & Misconceptions
- Definition
- Diagnosis - necessary or not?
- Screening
- Phonological intervention
- New Research
- New Intervention Techniques

By the end of this session the goal is to help each of you develop an understanding of the Diagnosis of Dyslexia. This session will clarify any misunderstandings you may have about Dyslexia and then help to guide you in what to screen for and then how to help your students while waiting for an official diagnosis.
Have participants use their device (phone, iPad, etc.) to log on to www.kahoot.it and enter game code. They will complete 6 true/false questions.

After each question we will discuss the myth/misconception brought up in the question. After the game is over - hand out the Myths And Misconceptions hand out linked below.

Link to document: https://docs.google.com/document/d/11hiYc4ftbBXfTlgbzcA9W8gnOLFumsk7St3Yml.-xY/edit?usp=sharing

1. False - Reversals of letters and words are typical of children up to age 7. The difficulty lies in auditory processing and memory, not visual processing.
2. False - Dyslexia is a problem with language processing at the phoneme level rather than a visual problem.
3. True - Coloured overlays do not improve reading rate or accuracy - again, it's not visual.
4. False - Children with dyslexia have average and above average intelligence. Individuals with dyslexia are often late in developing language and may have difficulty formulating speech sounds after the age when these are typically acquired.
5. True - Boys may be referred for testing for dyslexia more often than girls, but Dyslexia is not gender specific.
6. False - The term dyslexia grew out of studies of persons with brain damage, but children with dyslexia do not have brain damage. However, Dyslexia tends to run in families.
Dyslexia:

According to the International Dyslexia Association (IDA):

“a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge” (Williams & Lynch, 2010, p. 66).

“The word dyslexia is made up of two different parts: dys meaning not or difficult, and lexia meaning words, reading, or language. So quite literally, dyslexia means difficulty with words” (Hudson, High, & Al Otaiba, 2007, p. 506).

Dyslexia is no longer part of the DSM-V. It now falls under the term Learning Disability. That does not mean that individuals no longer struggle with the deficits that come along with dyslexia. The terms can be used interchangeably.


Why Do We Need To Know About Dyslexia?

Research shows:

★ Young students who get off to a solid start are less likely to stumble along the way, so if we can identify difficulties and implement supports for our students early, it is extremely important (Reutzel, 2015).

Because:

★ Individuals who do not receive the support they need may end up requiring greater supports from their community and may put a strain on the social systems.

Is A Diagnosis Necessary?

★ In many provinces, including British Columbia and Alberta, students with a diagnosis of dyslexia do not receive any supplementary funding.

So...

★ This means that screening, intervention, and support can to be provided by the teachers and the school.

Is a diagnosis necessary to determine who needs support and what type of support they need?
No - a diagnosis of Dyslexia does not give supplementary funding and therefore only ends up costing a school. So let’s talk about how educators can screen, provide appropriate intervention and support individuals with reading deficits without the unnecessary wait costs and times that leave us in the same place we started.

So what do we need to do first?
We as educators can determine who needs support with their reading as early as kindergarten and grade one. All kindergarten and grade one students should be screened to prevent students from slipping through the cracks.

Image retrieved from: [https://kelseytoolkit.weebly.com/](https://kelseytoolkit.weebly.com/)
Early Research Suggests:

★ Reading “difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities” (Williams, & Lynch, 2010, p. 66)

What does that mean?
Individuals who struggle with reading may be missing or struggling with the skills necessary to be a reader and the sooner we screen our students the sooner we can provide the appropriate supports they may need.

What are the foundational reading skills we should screen for?

One of the best indicators of how well a student will learn to read in their first years of instruction, is their understanding of phonemic and phonological awareness.

- **Phonemic Awareness** is defined as “the ability to focus on and manipulate phonemes [sounds] in spoken words” (Ehri et al., 2001, p. 253).
- **Phonological Awareness refers to the ability to attend to and manipulate the sounds in words** (Duff, & Clarke, 2010, p. 3).

So, when you are looking for a screening tool for your early learners, you need to look for one that includes both phonemic and phonological awareness skills. So - what are phonemic and phonological skills?


This Phonological Awareness Umbrella image is a good representation for educators to remember what literacy skills are considered to be Phonological Awareness skills. **Syllables** are defined as a word part that contains a vowel or, in spoken language, a vowel sound. **Onset and Rime** is defined as the parts of spoken language that are smaller than syllables but larger than phonemes. The **Onset** is the initial consonant(s) sound of a syllable and the **Rime** is the part of a syllable that contains the vowel and all that follows it (Armbruster, Lehr, & Osborn, 2001). It is important for educators to remember that Phonemic Awareness is a subsection of Phonological Awareness, as often these terms are used incorrectly.

“Phonemic awareness can be taught and learned. Effective phonemic awareness instruction teaches children to notice, think about, and work with (manipulate) sounds in spoken language.” (Armbruster, Lehr, & Osborn, 2001, p. 5). **Phoneme isolation** refers to recognizing individual sounds in a word including the beginning, middle, and end sound. **Phoneme Blending** is the ability to listen to a sequence of separately spoken phonemes, and then combine them to form a word, whereas **Phoneme Segmentation** is the ability to break a word into its separate sounds. **Phoneme deletion** is the ability to recognize the word that remains when a phoneme is removed, **Phoneme Addition** is making a new word by adding a phoneme to an existing word, and **Phoneme Substitution** is the ability to substitute one phoneme for another to make a new word (Armbruster, Lehr, & Osborn, 2001).
Example:

Reading Readiness Screening Tool (RRST)

https://www.righttoread.ca/

The Reading Readiness Screening Tool (RRST) was created by a group of reading specialists, consultants, psychologists and teachers from the Learning Disabilities Association of Alberta (LDAA). It is an easy tool for teachers to administer to their students. You can screen all of your students or just focus only on the students you have concerns about. The tool is administered one-on-one in kindergarten and grade one, focusing on the students phonemic and phonological awareness skills. Training opportunities for the Reading Readiness Screening Tool can be accessed through the Right To Read website at https://www.righttoread.ca/. They both have two day workshops that you can attend, or you can complete the training online.

Any research based screening tool that assesses the pre-reading phonemic and phonological awareness skills recommended by researchers will also provide the information educators need to begin interventions.
The RRST is developed and designed in the order of the developmental continuum. Based on the results, educators are able to develop an intervention plan for the students who are missing foundational skills required to become good readers.

Here is a quick snapshot of what the RRST looks like.
The score sheet makes it easy to see how well a student is doing with each skill. The skills are all marked by level of difficulty.
Here is an example of one of the screening pages. The teacher page has a script for you to follow. There are example/practice questions on each page and then five opportunities for the students to show what they know.

This example is the Rhyme Detection subsection. The pictures are provided in the student stimulus book. They are labeled clearly and are appealing to the students.

Any research-based screening tool that assesses the pre-reading phonemic and phonological awareness skills recommended by researchers will also provide the information educators need to begin intervention.
No matter how hard we try as educators, there are always those students who make it past grade one before their struggles are caught. Or, we have new students that catch our attention. So what can we do to help support them?
Example:

Diagnostic Reading Tool - 2 (DRT-2)

www.righttoread.ca/workshops/grade2-6

One tool, created to identify gaps in foundational skills for students in grades 2-6 is the Diagnostic Reading Tool-2 (DRT-2) which screens for deficits in phonemic awareness, phonics, fluency, vocabulary, and reading comprehension, created by the LDAA. Training opportunities for the DRT-2 can be found at www.righttoread.ca/workshops/grade2-6.
The score sheet makes it easy to see how well a student is doing with each skill. The skills are all marked by level of difficulty.
Here is an example of one of the sections in the screening tool. There are strict instructions for the passage reading. The student reads from the student stimulus book and the teacher has a copy to record on.

There is a page for recording the student’s oral reading fluency as well as tracking their miscues. Each short story comes with 5 literal questions, 3 inferential questions, and two vocabulary questions. The teacher manual includes a word reading percentile chart.
Duff and Clarke, 2011, state:

“...it is not the use of a specific reading intervention programme that is important, but the inclusion of phoneme awareness and phonics” (p. 5).

Let's talk interventions!

Duff and Clarke, 2011, state

“...it is not the use of a specific reading intervention programme that is important, but the inclusion of phoneme awareness and phonics” (p. 5).

Once you have identified which phonological awareness skills your student is missing you can then begin interventions.

Ideally, according to Vaughn, Denton, and Fletcher (2010) individuals who are struggling with reading should begin receiving small group intervention (three to five students) for shorter lengths of time (20-30 minutes), three to five times a week for 8-24 weeks. For students who are significantly struggling with their reading, Vaughn et al., state that intervention times should increase to 30-60 minutes per day, five days a week in a small group setting (two to three students) or one on one with a teacher for 20-30 weeks. They recommend that no matter the level of support required, interventions should include explicit instruction, high levels of active student engagement, and extended opportunities to practices their skills (Vaughn, 2010).

Interventions should:

★ Be explicit and systematic
★ Incorporate the application of the skills learned to reading, spelling, and writing
★ Be taught through multi-sensory instruction
  - Auditory
  - Visual
  - Kinaesthetic/Tactile sensory input

Research suggests that effective reading interventions include training in phoneme awareness and letter-sound knowledge that is explicit and systematic. It is recommended that the interventions incorporate the application of the skills learned during intervention to reading, spelling, and writing. It is important to ensure that all new content is taught through multi-sensory instruction which incorporates auditory, visual, and kinaesthetic/tactile sensory input.

(Hakkaart-van Roijen, 2003; Ehri et al., 2001; Duff, & Clarke, 2011; Duff et al., 2014; Witzel, & Mize, 2018.)


Rhyming Intervention Ideas

**Rhyme Detection**
- cab/jab
- Do they rhyme?

- Orally ask students to name words that rhyme with your suggested word

**Rhyme Generation**
- Play ‘Roll and Rhyme’ - having students create a rhyming word for the picture they roll

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-Interventions-1142762
https://www.teacherspayteachers.com/Product/Roll-a-Rhyme-293311
Syllable Intervention Ideas

Syllable Detection

- Have students sort picture cards by how many syllables they have

Syllable Blending

- You can put balls of play-doh in each square and have the students squish one ball for each syllable they say. You could also have them put a chip/counter on each square for each syllable they say

https://www.teacherspayteachers.com/Product/Phonemic-Awareness-The-Bundle-2590432
Phonological Awareness Intervention Ideas

Have handout available for participants.
https://docs.google.com/document/d/1U1DmCfWWvnmexsaVwcnDfK5oFEyofmdqAEwxglDxoAWE/edit?usp=sharing
Decoding & Fluency Intervention

For the students who will not be identified until later in their schooling, further intervention beyond phonemic awareness and letter-sound knowledge is typically necessary. The National Reading Panel recommends including; phonemic awareness, phonics skills, vocabulary, fluency and reading comprehension (Odegard et al., 2008). Withal and Mize, 2018, suggest that due to their struggles with decoding and fluency, interventions should include support for decoding multisyllabic words. One such strategy is dividing a word by syllables, common prefixes, and suffixes. The students will need to understand their meanings in order for them to grasp the semantics of the words. An effective strategy for fluency development is repeated reading, to help improve hesitations, repetitions, misidentifications, self-corrections, and omissions.


Interventions should include task analysis; breaking tasks down into small steps and sequentially prompting the students through each step (Witzel and Mize, 2018).

According to https://www.allaboutlearningpress.com/how-to-teach-syllable-types, the six types of syllables are:

1. A **closed syllable** ends in a consonant. The vowel has a short vowel sound, as in the word *bat*.
2. An **open syllable** ends in a vowel. The vowel has a long vowel sound, as in the first syllable of *apron*.
3. A **vowel-consonant-e syllable** is typically found at the end of a word. The final *e* is silent and makes the next vowel before it long, as in the word *name*.
4. A **vowel team syllable** has two vowels next to each other that together say a new sound, as in the word *south*.
5. A **consonant+1-e syllable** is found in words like *handle*, *puzzle*, and *middle*.
6. An **r-controlled syllable** contains a vowel followed by the letter *r*. The *r* controls the vowel and changes the way it is pronounced, as in the word *car*.

https://www.teacherspayteachers.com/Product/Multisyllabic-Words-Decoding-using-Syllable-Types-3151260?gclid=EAIaIQobChMIqQoba5Kmg4QIVXICtBh0vFweQFAYYAiABEglYyvD_BwE
A **prefix** is a group of letters placed before the root of a word. For example, the word “unhappy” consists of the prefix “un-” [which means “not”] combined with the root (or stem) word “happy”; the word “unhappy” means “not happy.”

A **suffix** is a group of letters placed after the root of a word. For example, the word flavorless consists of the root word “flavor” combined with the suffix “-less” [which means “without”]; the word “flavorless” means “having no flavor.”


https://www.teacherspayteachers.com/Product/Prefix-and-Suffix-Activities-2461684
Fluency Intervention Ideas

An effective strategy for fluency development is repeated reading, to help improve hesitations, repetitions, misidentifications, self-corrections, and omissions (Witzel, & Mize, 2018).

Why The Six-Minute Solution?

- Actively engages and motivates students with peer-to-peer interaction
- Increases fluency, time on task, and work completion in all content areas
- Quick, easy and flexible implementation
- Improves student performance in all content areas
- Can be used in classrooms and groups of all sizes with no special materials required
- Research-based and field tested, incorporating proven partnering and repeated-reading techniques
- Professional development is embedded, requiring no teacher training
- Effective with all students, including English language learners and students with special needs
- Addresses multiple levels of fluency, making it easy to differentiate instruction
- Reliable initial and ongoing assessment

https://www.voyagersoopers.com/literacy/six-minute-solution/overview
Decoding & Fluency Intervention Ideas

https://docs.google.com/document/d/1T0RNg_lRfuknY15inA9kD5SfUIChEQks6_g0m3DpQpl/edit?usp=sharing

Have handout available for participants.
https://docs.google.com/document/d/1T0RNg_lRfuknY15inA9kD5SfUIChEQks6_g0m3DpQpl/edit?usp=sharing
What Next?

For most - that’s it! The phonological intervention will be enough to catch them up!

But.... what if it isn’t?

Although individuals with dyslexia have a difficult time with phonemic and phonological awareness, and studies have shown that interventions focusing on these tasks can be effective in supporting our struggling readers, there are still 2% to 6% of children who do not respond to these phonologically based interventions (Odegard et al., 2008). Individuals who, despite normalization of phonological processing skills as a result of intervention, continue to struggle with word decoding are considered to be ‘non-responders’. These learners require alternative supplementary support and assistance.
The New Research

Odegard et al., 2008, suggest that there are fundamental differences in brain activation between students who successfully respond to phonological based intervention and those who do not.

**Meaning:**
that there is something neurologically different in the brains of non-responders. Non-responders require an alternative plan of intervention. A plan that makes sense to the way their brains process.

Recent advancement in technology and brain imaging has allowed researchers to gain new information about how the brain functions in individuals with Dyslexia. Odegard et al., 2008, suggest that there are fundamental differences in brain activation between students who successfully respond to phonological based intervention and those who do not. “After treatment, responders demonstrated a more normalized reading network, but treatment for non-responders continued to show abnormalities in the brain circuit...” (p. 3). This means that there is something neurologically different in the brains of non-responders. Non-responders require an alternative plan of intervention. A plan that makes sense to the way their brains process.

What The Brain Tells Us

**Left Hemisphere**
- operates in a linear, sequential manner
- follows a logical analytical, and propositional thought process
- specializes in language skills.

**Right Hemisphere**
- operates in a non-linear, simultaneous fashion
- deals with non-verbal information, dreams, fantasy, and creative thinking.
- specializes toward visuospatial and oppositional thought

-Recent research on Dyslexia has focused on the cerebral brain function of individuals during the act of reading.
-Cognitive neuroscientists have determined that the left hemisphere of the brain operates in a linear, sequential manner, following a logical analytical, and propositional thought process. It is specialized in language skills.
-On the other hand, the right hemisphere operates in a non-linear, simultaneous fashion. It deals with non-verbal information, dreams, fantasy, and creative thinking. The right hemisphere is specialized toward visuospatial and oppositional thought, (Vlachos, Andreou, & Delliou, 2013).
-Lavdor, Johnston, and Snowling, 2006, and Vlachos, Andreou, and Delliou, 2013, suggest that the cerebral hemispheres are not functionally equal.
-Deficits in the left hemisphere lead to phonological decoding deficiencies, whereas alterations of the right hemisphere lead to visuospatial deficits.
-Individuals with Dyslexia have decreased activity in their posterior left hemisphere, and an increase in right hemisphere involvement. This lack of synchronicity between the two hemispheres can prevent successful reading in individuals with Dyslexia. Their increased right hemisphere involvement explains the difference between people with Dyslexia and individuals whose brain function is considered to be normal. It is also the reason why most individuals with Dyslexia do not successfully respond to frequently used phonological interventions.

Typically teachers teach reading from the bottom up:
- sounds
- phonemes, syllables, rhyming
- words in sentences
- turning sentences into meaning

When looking for an alternative intervention program that may better match the way non-responder’s brain processes, it is important to look for a program that follows the top down approach to reading. Top down programs appeal to learners who rely heavily on the right hemisphere of their brains. They need a program that allows for them to start with the big picture.

Right Hemisphere teaching does the opposite - working from the top down:
- idea
- sentences/whole word reading
- words in isolation
- sounds

It is important for educators to ensure that their struggling readers have received evidence-based phonological interventions first to ensure they have those necessary skills before moving on to include a supplementary top-down reading intervention program.

Interventions should:

★ Begin with an idea and then introduce related words and sentences
★ Require reading of the whole word in isolation and then differentiate individual sounds
★ Include pictures, diagrams, charts, colour-coding, and guided imagery

The top down program should begin with an idea, then introduce words and sentences related to the main idea. From there, the individual will be required to read the whole word in isolation and then differentiate the individual sounds. pictures, diagrams, charts, colour-coding, and guided imagery, (Gregory, 2005;
Vlachos, Andreou, & Delliou, 2013)

Jennifer is currently working on completing her website:  
www.rightbrainreading.com

If you are interested in purchasing her manual or reaching out to her - you can email her.

Vancouver Island University, Nanaimo, B.C., Canada.
1. Together with the student come up with broad topics.

2. Choose one of the topics and come up with highly concrete or visual words (not phrases or sentences). Record 8-12 words and have your student sketch a picture to match the topic.

3. Choose 4-6 of the words that will work well together in sentences and write them on flashcards. If the student can already read one of the flashcard words keep it for use later in the sentence creating and add a new flashcard word. For the words the student can not read - be sure not to let them try sounding it out. Once you have 4-6 words, write them on a 2 X 2 or 2 X 3 grid.

The 3 Stages of Reading Acquisition

**Matching**
- Hold up one card and say the word. Have the student repeat the word. Then say the word again and give the card to the student. Have them match the word to the same word on the grid. Elicit conversation about the word and its meaning, accessing their right hemisphere thinking. Complete this for each card. Repeat 2 more times for a total of 3 matches.

**Selecting**
- Place the flashcards randomly on the table. Say one of the words (along with the information you talked about) and have the student find the flashcard and place it on the grid again, while repeating the word. Repeat 2 more times for a total of 3 matches. On the final repetition - include more information about the word - stretching beyond the current topic to understand topic generalization.

**Reading**
- Show your student one flashcard at a time. Have them read the word and match it to the grid. At this time, you can include the flashcards from step 3 that they already knew. Do not give any clues at this time - if they are stuck, ask if they want help or time. If they choose help, give them contextual clues. Repeat this 2 more times for a total of three matches.

These 3 stages are done during one session.

The intervention program goes on to have the student build sentences, write & sketch, draw & write, etc. I don’t want to give you all the steps, as it is important to read the teacher manual and support the creator. Here is the information once again in case you are interested in getting the manual.

Thank you!

We have a few minutes for questions.

Contact Info: eleesha.gatti@eips.ca

Thank everyone for coming.
Time for a few questions.
Give contact information for further questions.
References


References


Materials To Have Prepped

1. Myths and Misconceptions Handout
   https://docs.google.com/document/d/11hYa4ftth5BTI6hRyuZfmxg9a9W2KbnOjFurnukZSt3Ynl_xY/edit?usp=sharing

2. Phonological Intervention Handout
   https://docs.google.com/document/d/1U1DmCFWuwmezsaYWcnDfK5aFEyoymf9gAEwxg1DXg-AWf/edit?usp=sharing

3. Decoding and Fluency Intervention Handout
   https://docs.google.com/document/d/1T0RNg-I8fuKnY15inA9kD55fUICHEOke6_o0m3DpQpF/edit?usp=sharing