STRUCTURED LITERACY IN SPORT: A MODEL FOR SUPPORTING COLLEGIATE STUDENT ATHLETES WITH READING DISABILITIES

by

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(Under the Direction of

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ABSTRACT

With the recent update to the NCAA waiver process, the number of collegiate student athletes with education-impacting disabilities (EID) has steadily increased. Dyslexia is an increasingly common EID affecting student athletes in the classroom. Current research supports the use of individualized, systematic, and explicit word-level interventions to address the needs of students with dyslexia. Young adults with dyslexia present particular challenges related to the implementation of these evidence-based interventions; student athletes present even more unique challenges because of academic, social, and athletic pressures. Despite these known conditions, little research has been done to address how to support this population. The accommodations provided by universities and athletic associations are insufficient means of remediation of reading disabilities. A proposed model of support includes intensive, explicit reading instruction that is individualized for each student athlete's needs.

INDEX WORDS: collegiate athletics, student-athletes, reading disabilities, dyslexia

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CHAPTER 1

PROBLEM OF PRACTICE

In May of 1998, the US Department of Justice concluded a 30-month investigation of the NCAA's academic eligibility requirements with the finding that the eligibility requirements were too rigid, particularly in terms of their exclusion of special education classes as acceptable credits. The NCAA's requirements at that time made collegiate competition almost impossible for students with learning disabilities. The Department of Justice mandated that the NCAA revise their waiver process in the following ways: (a) accept classes designed for students with learning disabilities, as long as the classes provided the same skills as courses designed for college-bound students; (b) include experts on learning disabilities as well as an ADA compliance officer on the board that reviews waiver applications; and (c) allow student athletes a fourth year of eligibility if they meet satisfactory progress toward their degree (US Department of Justice, 1998). As a result of the updated NCAA waiver process, the number of collegiate student athletes with education-impacting disabilities (EID) has steadily increased over the past twenty years. Although results from a 2008 survey of NCAA athletic academic advisors showed that 2.7% of college athletes have a learning disability, a recent study conducted at one Division I university indicated that 54% of student athletes on three revenue-producing teams had diagnoses of learning disabilities (NCAA, 2007; Farrey, 2009). Approximately 11% of all college students at Division I, II, and III post-secondary institutions are reported to have disabilities, with as many as two-thirds diagnosed with specific learning disabilities (National Center for Education

Statistics, 2011). Given these statistics, it is likely that all post-secondary athletic programs have student athletes with learning disabilities in need of unique academic supports.

Due to the growing prevalence of students with learning disabilities at universities and involved in college athletics, athletic associations are in a distinct position to identify, develop, and deliver the supports needed by their student athletes with learning disabilities. All student athletes, whether or not they have a disability, experience challenges that other college students do not. These challenges include balancing competing academic and athletic demands, experiencing negative stereotypes from peers and faculty, and navigating required support services and extraordinary scheduling demands (Etzel et al., 1996). Student athletes with learning disabilities face additional challenges that include difficulties in core academic areas such as math, reading, and writing as well as the social and emotional difficulties that come with learning to cope with a learning disability (Barton & Fuhrmann, 1994). Collegiate student athletes with learning disabilities also face high-visibility eligibility issues and stereotypes of being unmotivated or uncooperative in the classroom (Robinson, 1998). These secondary academic challenges are the result of learning disabilities, and they contribute to the need for a comprehensive support program.

Of course, there has been a great deal of research on how to appropriately support college students with learning disabilities (Hamblet, 2014). Much of this research proposes models that include teaching students to self-advocate for their learning needs with instructors, seek knowledge about the learning disability, and practice conflict resolution skills when seeking accommodations (Antcil, Ishikawa, & Scott, 2008). In addition, scholars recommend that support programs reinforce behaviors that include (a) a desire to succeed, (b) the ability to find coursework that maximizes strengths and minimizes weaknesses, (c) the use of creativity when

coping with weaknesses, and (d) the promotion of independence rather than dependence (Hamblet, 2014; Kerka 2002). Although many of these strategies can be applied in the support of student athletes, to these recommendations do not directly address or remediate a student's core instruction need nor do they address how to incorporate appropriate interventions (Clark & Parette, 2002).

In contrast to recommendations for accommodations or the teaching of self-advocacy skills, several programs have been implemented to address the unique instructional needs of student athletes with learning disabilities. One currently utilized model of support, the Student Services for Athletes (SSA) program pioneered by the University of Delaware, involves helping student athletes navigate the social and academic environment of the university, develop foundational academic skills, and strengthen organizational skills and planning to ensure success after their sport (Jordan & Denson, 1990). Clark and Parette (2002) proposed specialized additions to SSA programs in order to better meet the needs students with learning disabilities. In their revised model, Clark and Parette emphasized self-monitoring of grades and specialized, new-student orientations to ease transitional struggles for student athletes, as well as academic supports such as peer mentoring, study hall, career development instruction, and diagnostic testing (Clarke & Parette, 2002). College athletic associations are also encouraged to provide support for student athletes with learning disabilities pre-admission during the recruitment process by utilizing the Student-Athlete Pre-Screening Questionnaire (SA-PSQ), a measure that can help inform prospective student athletes on their college readiness and academic strengths and weaknesses (Lombardi et al., 2012).

Despite the widespread understanding that specialized supports are necessary for student athletes with learning disabilities, it is important to note that all learning disabilities are not the

same nor do they present uniformly in all student athletes. Among student athletes with learning disabilities, there is a great diversity of learning needs and severity of those needs (Gerber & Reiff, 1991). For example, some student athletes will have dyslexia, sometimes diagnosed as a specific disability in reading. Dyslexia is a language-based disorder that is neurobiological in origin affects a person's ability to decode, recognize words and read fluently, which affects comprehension (International Dyslexia Association, 2002). As such, student athletes with dyslexia may require more intensive, direct reading support. In contrast, a student athlete with organizational or attention difficulties would require different types of support. Despite the widespread awareness of the critical needs of student athletes with dyslexia, particularly those who are reading far below college-level, there has been little research on how to incorporate evidence-based dyslexia interventions in support plans while taking into account the unique challenges that supporting a collegiate student athlete may bring.

There are many effective evidence-based interventions for students with dyslexia, most of which include reading instruction that is systematic, multi-sensory, direct, and scaffolds concepts with constant review and consolidation (Snowling & Hulme, 2011). However, these interventions have not been uniformly or directly applied in the service of supporting student athletes with dyslexia. In addition, research has shown that many college students with dyslexia often feel frustrated and unsupported by university accommodations (MacCullaugh et al., 2016). Finally, research on ways to support student athletes with learning disabilities does not address specific diagnoses (Clarke & Parette, 2002), which means that the general recommendations for support are not specific to specific needs of student athletes with dyslexia. Given the research on the capacity of intensive intervention to improve reading outcomes, it is clear that student athletes should receive more specialized, specific support that targets their dyslexia. This support

would go beyond the delivery of accommodations to include direct remediation of reading skills. In short, a proposed model of support for student athletes with dyslexia should address all areas previously mentioned in student athlete support but also include intensive evidence-based interventions that target the student athlete's dyslexia.

CHAPTER 2

READING DISABILITIES

The Individuals with Disabilities Education Act defines a specific learning disability as a disorder that affects one or more of the psychological components which facilitate the processing of spoken or written language. To be categorized as a specific learning disability, the disorder must not be a result of visual, hearing, or motor impairments, nor can it be a product of the student's environmental, cultural, or economic disadvantage. The specific learning disability may affect a student's ability to read, write, spell, speak, think, listen, or complete mathematical operations (IDEA, 2004). According to the National Center for Learning Disabilities, 5% of students enrolled in public schools have diagnoses that include specific learning disabilities (NCLD, 2011). Specific reading disabilities, commonly referred to as dyslexia, make up a large part of that subcategory, as anywhere between 5-15% of Americans have dyslexia (Society for Neuroscience, 2004).

As previously stated, dyslexia is one of the most common learning disabilities affecting Americans. The most widely accepted definition of dyslexia comes from the International Dyslexia Association:

> [A] specific learning disability that is neurobiological 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 (2002).

This definition encompasses the three major facets of dyslexia: (a) it causes deficits in word recognition and decoding, (b) these deficits may affect reading comprehension, and (c) dyslexia is a neurobiological disorder. Thus, appropriate intervention should be rooted in research on those three major facets.

SIMPLE VIEW OF READING

Dyslexia and other reading disabilities vary by symptoms and presentation, but, in general, can be explained by the Simple View of Reading proposed by Phillip B. Gough and William E. Tunmer (1986). According to Gough and Tunmer, reading ability is a product of decoding and language comprehension, or R = D x LC, where (a) decoding is defined as one's ability to use letter and sound correspondence to decipher novel words and use an orthographic cipher to recognize whole words, and (b) comprehension is defined as one's ability to use lexical information, sentences, and discourse to comprehend a language. According to the Simple View of Reading, decoding is not sufficient for reading but is necessary. In other words, a person cannot read without the ability to decode, but in the absence of understanding language, a person would not be able to bring meaning to the words that were decoded. Similarly, comprehension is not sufficient but necessary, as one may comprehend spoken language—for example, a five year-old may be able to follow a conversation but cannot read from the page.

Scarborough (2001) illustrated the two components of the Simple View of Reading in her reading rope. She used several strands of the rope to represent the interconnectedness of early literacy skills that a student must acquire to become a fluent reader. The rope, seen in Figure 1, demonstrates how the two variables of the simple view, comprehension and word recognition, are composed of several interconnected skills. According to Scarborough's reading rope,

background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge are all necessary skills in developing a student's language comprehension.

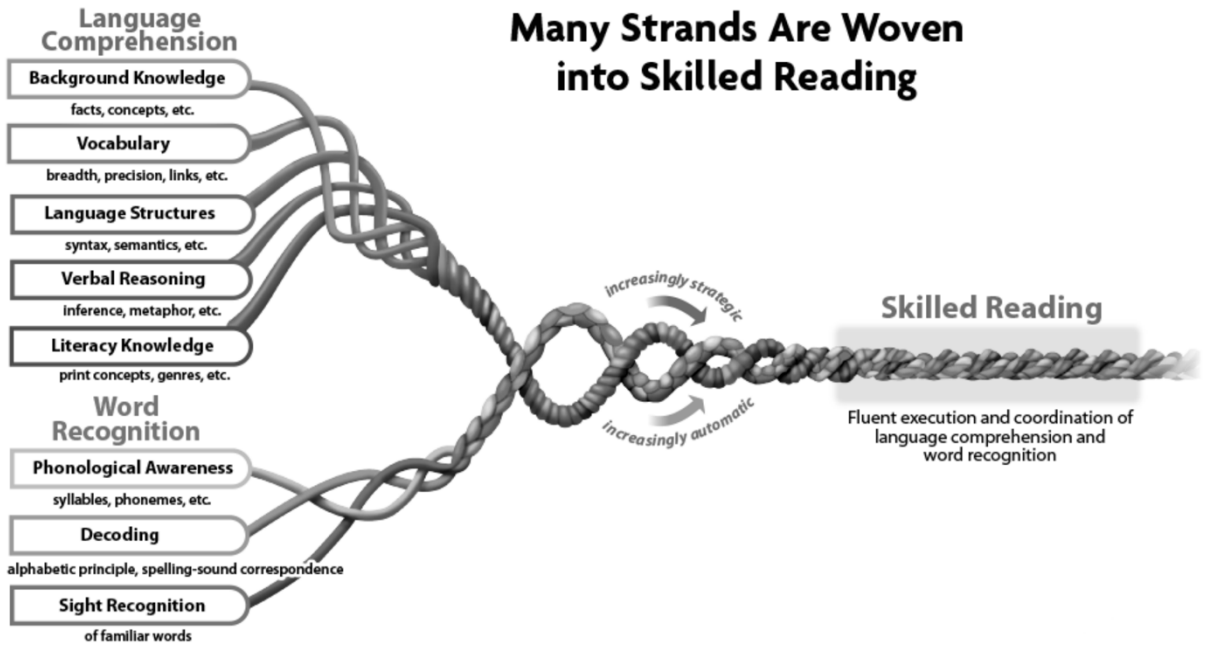


Figure 1. Scarborough's reading rope.

The other major strand, word recognition, relies on phonological awareness, decoding, and sight recognition. Phonological awareness refers to the ability to recognize and manipulate the sounds of speech (Moats, 2000). Students that possess strong phonological awareness can identify and produce rhymes, utilize alliteration, and count syllables in words or words in a sentence. Decoding is a student's ability to use letter-sound relationships to pronounce written words. Students utilize decoding abilities to sound out new or unknown words. Early readers especially depend on decoding because it provides a generally reliable method of identifying new words (Kamhi & Catts, 2014). However, efficient readers depend more on sight word recognition, or the ability to identify words by sight. Once students become more familiar with a word through the repeated mapping of phonology with the orthography, they no longer need

decode it each time (Kilpatrick, 2016; Moats, 2000). The process of connecting the phonology to the orthography is called orthographic mapping, and the process allows students to read words by sight, accurately spell words, and connect words with their meaning (Ehri, 2014). One glance at a sight word is enough to derive pronunciation and meaning; these words are read in less than a second (Ehri, 2005). When students become proficient with the aforementioned skills, they can focus their cognitive energy on comprehension, which involves the language components of the reading rope (Ehri, 2014; Scarborough, Newman, & Dickenson, 2002).

Students with dyslexia have deficits in the phonologic domain; these phonological processing weaknesses are considered to be the hallmark sign of dyslexia. Before the majority of students with dyslexia learn to read or spell, they will display difficulty in phonological processing (Kamhi & Catts, 2014). Weaknesses in phonological awareness are highly predictive of dyslexia (Melby-Lervåg, Lyster, & Hulme 2012). The phonological weaknesses of dyslexia in turn affect the development of later reading and writing skills such as a student's ability to segment, decode, and spell words (Kamhi & Catts, 2014; Shaywitz & Shaywitz, 2003). Furthermore, as illustrated by the reading rope (Scarborough, 2001), decoding weaknesses can negatively affect comprehension and overall reading ability. Thus, students with dyslexia may face weaknesses across all fundamental reading skills.

BIOLOGICAL FACTORS

Dyslexia is a heritable disorder. As early as 1950, scientists identified a link between dyslexia in children and their parents. Hallgren (1950) found that at least one parent of a child with dyslexia would show signs of the disability. In addition, Hallgren found that children displayed more severe reading impairments if both parents were poor readers. A wide body of research has shown that a defining trait of dyslexia—phonological processing deficit—is passed

from parent to offspring (Olson & Byrne, 2005; Pennington & Lefly, 2001). Thus, it is now widely accepted that dyslexia has a familial component, and this contributes to the understanding that it is a disorder with a biological basis (Shaywitz & Shaywitz, 2003).

In addition to being a heritable disorder, dyslexia can be observed through structural and functional differences in the brain. Through brain-imaging techniques such as magnetic resonance imaging, researchers have localized reading processes to the language-dominant left hemisphere of the brain, specifically in the posterior inferior frontal gyrus, precentral gyrus, occipito-temporal cortex, and tempero-parietal regions (Kearns et al., 2018). Researchers have also been able to identify the white-matter tracts such as the left longitudinal fasciculus and the corona radiata, both of which connect areas of the reading network (Vandermosten, Boets, Wouters, & Ghesquière, 2012). Most importantly, this neurobiological research has shed light on how the brain of someone with dyslexia may differ structurally and functionally from the brain structure and function of someone without dyslexia. Specifically, the existence of dyslexia is characterized by reduced gray matter in these left-lateralized areas as well as reduced activation in reading tasks along the white-matter pathways, which suggests decreased connectivity and communication among the auditory and language areas of the brain (Boets et al., 2012; Richlan, 2012). Reduced volume and organization of gray matter in the left longitudinal fasciculus and corona radiata have also been observed in brain scans of patients affected by dyslexia (Vandermosten, Boets, Wouters, & Ghesquière, 2012). However, the largest difference between the brains of individuals without dyslexia and brains of individuals with dyslexia is the reduced activation in the occipito-temporal cortex and tempero-pariatel regions of the brains of individuals with dyslexia during reading and rhyming tasks (Kearns et al., 2018). Some critics of brain-imaging studies claim that the structural and functional differences may be a direct result

of poor reading ability not the clinical disability (Norton, Beach, & Gabrieli, 2015). However, studies that controlled for age and ability in children found that activation differences in the reading networks were in fact due to dyslexia, not ability (Hoeft et al., 2007).

Along with neurobiological differences, there are cognitive deficits associated with dyslexia that include weaknesses in phonological awareness and delayed rapid automatic naming (RAN). As previously stated, phonological awareness is a foundational early literacy skill and is the most prevalent and predictive symptom of dyslexia (Melby-Lervåg, Lyster, & Hulme 2012; Kamhi & Catts, 2014). Rapid automatic naming (RAN) tasks require individuals to automatically identify familiar letters, numbers, shapes, and colors (Moats, 2000). Like phonological awareness, RAN serves as a predictor for reading achievement later in life. Students with dyslexia struggle with RAN tasks, which suggests difficulty in integrating cognitive and linguistic processes associated with reading fluency (Norton & Wolf, 2012).

PREVALENCE OF READING DISABILITIES

Dyslexia is the most common learning disability. It is estimated that between 5-15% of Americans have dyslexia (Society for Neuroscience, 2004). According to the National Center for Education Statistics (2019), 34% of students ages 3-21 receiving services under IDEA had at least one diagnosis of a specific learning disability. In addition, the majority of students (~80%) that qualify for special education with a specific learning disability diagnosis have dyslexia or significant weaknesses in reading (Society for Neuroscience, 2004; Shaywitz & Shaywitz, 2003).

Previously, research supported the prevalence of gender differences in reading disabilities, citing higher incidences of dyslexia in boys than in girls (Critchley, 1970). One early study by Naidoo (1972) reported a 5:1 boy-to-girl ratio in reading disabilities. However, gender differences in dyslexia are a misconception. Shaywitz et al. (1992) tested this hypothesis of

gender differences by comparing two groups of poor readers—students that scored at least 1.5 standard deviations below their IQ in a reading achievement measure and students that were classified by school districts as reading-disabled. In their study, Shaywitz et al. found a much higher incidence of reading disabilities in the school-identified group, indicating a possible selection bias. Later studies have shown that when standardized reading achievement measures were used as the identifier for reading disabilities, there were nearly as many girls with reading disabilities as boys (Shaywitz & Shaywitz, 2002; Shaywitz et al., 1990). Subsequent research has supported the study by Shaywitz and Shaywitz (2002). Jimenez and colleagues (2011) found no gender differences in the prevalence of dyslexia. Furthermore, when gender differences exist in research-identified groups with reading disabilities, these differences have been explained by statistical properties of the tests utilized to measure reading abilities (Share & Silva, 2003; Siegel & Smythe, 2005). Therefore, gender differences in prevalence of reading disabilities are largely a misconception.

DIAGNOSIS

Dyslexia requires a clinical diagnosis. When assessing someone for dyslexia, a clinician takes into account several factors including history, observation, and psychometric assessment; there is not one symptom or measure that can be used to confirm a diagnosis dyslexia. In addition, before being diagnosed with dyslexia, other common causes for lower reading achievement must be ruled out such as inadequate instruction, low intelligence, sensory impairments, emotional and behavioral problems, and neurological impairment caused by injury or illness (Kamhi & Catts, 2014).

If the aforementioned possible reasons for reading difficulties are ruled out, the student does not respond to evidence-based intervention, and the student possesses unexpected reading

difficulties compared to their general intelligence and cognitive achievement, then a parent or educator may recommend the student be evaluated for dyslexia (Kamhi & Catts, 2014; Lindstrom, 2019). The identification process as modeled by Flanagan and colleagues (2006) includes several steps (Flanagan, Ortiz, Alfonso, & Dynda, 2006). Clinicians may first look at family history and academic achievement; as previously mentioned, signs of dyslexia include familial reading difficulties, weaknesses in phonological awareness, poor spelling, and reading without fluency and/or below grade-level. A comprehensive assessment may be conducted by school district school psychologists or by a private, licensed psychologist, and it will include several measures that assess intelligence, academic achievement, and underlying language skills associated with reading ability and dyslexia. A typical dyslexia assessment battery will measure receptive and expressive language skills, phonological skills, phonemic awareness, and rapid automatic naming of letters and numbers; additionally, the battery will include measures that assess a student's ability to decode real and nonsense words in isolation and in context (Lindstrom, 2019). Assessments will also measure reading comprehension, fluency, writing, and spelling abilities, which are all skills that could be affected by dyslexia (Lindstrom, 2019; Shaywitz, 2004). Table 1 includes a list of common assessments used to diagnosis dyslexia and the skills that they measure (Lindstrom 2019; University of Michigan, 2020). After administering the assessment, the clinician will examine the results and write a detailed score report. If the profile matches that of someone with dyslexia, the clinician will assign a diagnosis of dyslexia and provide recommendations for intervention (Farrall, 2012).

Table 1

Common Measures in a Dyslexia Battery

Assessment	Skill(s) measured
Comprehensive Test of Phonological Processing – 2 (CTOPP-2)	• Phonological awareness • phonological memory • rapid automatic naming
Gray Oral Reading Test – 5 (GORT-5)	• Reading fluency • Comprehension
Gray Silent Reading Test (GSRT)	• Comprehension
Kaufman Test of Educational Achievement – 3 (KTEA-3)	• Letter-sound knowledge • Decoding • Spelling • Reading fluency • Comprehension
Rapid Automatic Naming/Rapid Automatic Stimulus (RAN/RAS)	• Rapid automatic naming
Test of Auditory Processing Skills (TAPS)	• Comprehension • Auditory processing • Phonological processing
Test of Written Language - 4 (TOWL-4)	• Narrative writing • Spelling • Vocabulary
Test of Written Spelling – 5 (TWS-5)	• Spelling
Woodcock-Johnson IV Tests of Achievement (WJ-5)	• Letter-sound knowledge • Decoding • Reading fluency • Spelling • Comprehension
Woodcock Reading Mastery Test (WRMT)	• Phonemic awareness • Phonological awareness • Vocabulary • Reading fluency • Comprehension • Rapid automatic naming

INTERVENTION

Although dyslexia is a life-long disability, effective intervention can greatly increase reading achievement. Typical reading instruction, however, is ineffective for students diagnosed

with dyslexia. Torgesen and colleagues (2003) asserted that in order for reading instruction to be effective for students with reading disabilities such as dyslexia, instruction should be more explicit, intensive, and supportive than what is typically provided by teachers. The term *structured literacy* has been used to capture features of effective reading instruction that have been demonstrated as effective for struggling readers (Moats, 2017). The overarching principles of structured literacy align with Torgesen's model of effective instruction; instruction should be (a) systematic and cumulative, (b) explicit, and (c) diagnostic and responsive (Spear-Swerling, 2019). Under those three principles, structured literacy instruction will address phonology, sound-symbol associations, syllables, morphology, syntax, and semantics (see Table 2). Together, these principles and content create a framework for structured literacy programs.

Table 2

Framework for Structured Literacy

Principles	Content
• Systematic • Cumulative • Explicit • Diagnostic	• Phonology • Sound-Symbol Correspondence • Syllables • Morphology • Syntax • Semantics

Principles of Structured Literacy

Structured literacy instruction is systematic and cumulative (Spear-Swerling, 2019). This means that instruction follows a planned scope and sequence of language instruction, beginning with the most basic elements of language and building up to more complex and challenging concepts (Ehri, Nunes, Stahl, & Willows, 2001). Structured literacy is also cumulative, meaning that one concept builds on another, and review is constant (Torgesen, 2006).

Another principle of structured literacy is explicit instruction (Birsh & Carreker, 2018). One of the guiding principles of explicit instruction in reading is that instructors should make no assumptions about what students may or may not know (e.g., letter-sound correspondences, spelling rules; Archer & Hughes, 2011). Lessons should include modeling of new concepts, guided practice, and immediate feedback from instructors. Structured literacy does not depend on discovery or intuitive learning by the students (Spear-Swerling, 2019).

Finally, structured literacy is diagnostic and responsive. The instructor is constantly diagnosing and pacing lessons based on student responses. Diagnostic instruction is individualized; presentation and practice are informed by the student's performance in real time. Additionally, structured literacy incorporates constant formal and informal progress monitoring to promote diagnostic instruction (Birsh & Carreker, 2018).

Content of Structured Literacy

Structured literacy is the application of evidence-based research to reading instruction. The content areas of structured literacy programs address the underlying language processes necessary for skilled reading. A typical structured literacy curriculum includes instruction in phonology, sound-symbol association, syllables, morphology, syntax, and semantics (Carreker, 2020). Explicit instruction in these areas is necessary to build on the foundational cognitive processes of reading.

Phonology

Phonology refers to the speech-sound relationships in any language, including rules and patterns of how sounds are combined to form words and phrases (Moats, 2000). Understanding the sound-symbol relationships is a foundational skill in literacy development, and although these relationships may be intuitive to some students, students with dyslexia benefit greatly from

explicit instruction of phonological rules and patterns (Moats, 2017). In the scope and sequence of structured literacy, phonological awareness is one of the first skills to be taught, and it is reinforced constantly and explicitly throughout the curriculum (Spear-Swerling, 2019).

Sound-Symbol Association

Structured literacy should include direct, explicit instruction of sound-symbol correspondences. In languages like English, graphemes (alphabetic symbols), or groups of graphemes correspond to phonemes, or sounds of the language (Moats 2000). Once students can identify phonemes, they must learn how to attach the phonemes to graphemes. Once students develop strong sound-symbol associations, they can develop reading skills such as segmenting and blending written words (Moats, 2000).

Syllables

Language is made up of syllables, or groups of phonemes with one vowel sound (Moats, 2000). In structured literacy programs, the types of syllables are systematically taught to students. This can help students orthographically memorize parts of words, and it will increase their ability to decode unfamiliar words by allowing them to identify parts of the word as certain syllable types (Carreker, 2020). In addition to decoding, explicit syllable instruction also helps students to apply orthographic patterns to spelling (Spear-Swerling, 2019).

Morphology

Structured literacy also incorporates morphology. Morphemes are the smallest units of words that retain meaning, such as root words, prefixes, and suffixes (Moats 2000). By receiving explicit instruction in morphemes, students can decode and derive meaning from large, unfamiliar words (Goodwin & Ahn, 2013). Therefore, morphology instruction not only supports

word recognition and spelling but also incorporates vocabulary instruction into structured literacy.

Syntax and Semantics

Syntax, or the system of rules governing how words can be combined grammatically in phrases and sentences, is also explicitly taught in structured literacy (Spear-Swerling, 2019). Knowledge of syntax supports reading comprehension and ability to read fluently. In structured literacy, reading texts for meaning is a critical component; instruction in syntax allows students decode and comprehend simple and complex sentences, reinforcing fluency (Nelson, 2013). From the very beginning, structured literacy programs incorporate semantic instruction. Semantics refers to the part of language concerned with meaning at the word and sentence levels. (Moats, 2000). As the goal of reading is to comprehend, explicit instruction in semantics is necessary for students to derive meaning from words and increase comprehension (Soifer, 2018).

Conclusion

Structured literacy incorporates explicit, cumulative instruction in the six content areas of phonology, letter-sound association, morphology, syllables, syntax, and semantics. Evidence-based guidelines for instruction should drive the intervention implementation for readers with dyslexia (Carreker, 2020). Structured literacy directly addresses the areas in which students with dyslexia may struggle, and it provides scaffolded remediation for students. The intervention continues to be the gold standard over typical classroom reading instruction, especially for individuals with reading disabilities (Spear-Swerling, 2019).

CHAPTER 3

STUDENT ATHLETES WITH READING DISABILITIES

As the number of students with learning disabilities admitted to postsecondary institutions rises, the number of college students with dyslexia also increases (Saletta, 2018). Dyslexia is classified as a lifelong disorder (Shaywitz, 2003); students with dyslexia will feel the effects of the disorder long after the end of their schooling. However, the symptoms of dyslexia may be fluid throughout one's lifetime, as the symptoms of dyslexia in adolescents and adults may present differently from the symptoms of children with dyslexia (Saletta, 2018). In addition, the postsecondary environment presents unique challenges for older students with dyslexia. Student athletes with dyslexia, in particular, navigate even more challenges as they balance competition and academics.

DYSLEXIA IN POSTSECONDARY SETTINGS

Problems specific to older students with dyslexia include: (a) difficulty with transitions from high school to college or college to the workforce; (b) higher expectations of independence; (c) dependence on compensatory reading and spelling strategies; and (d) more challenging reading materials (Shanahan, 2019). In addition, without effective early intervention, the reading achievement gap between students affected by dyslexia and their non-affected peers increases (Ferrer et al., 2015; Shaywitz, Morris, & Shaywitz, 2008). Therefore, adult readers with dyslexia that did not receive effective interventions will read on a level far below that of the content presented to them in a postsecondary setting, and they may have developed maladaptive reading strategies at the expense of fluency (Miller-Shaul, 2005; Shaywitz et al., 2008).

Cutting and Scarborough (2006) examined the compensatory strategies of older struggling readers, noting that these strategies can include a dependence on whole-word recognition or laborious decoding. Some readers may depend strictly on memorization of entire words for pronunciation and meaning; others may depend more on decoding, sounding every word out as they read. Both reading strategies are limiting and laborious for readers with dyslexia. As a consequence of these compensatory strategies, students face a depletion of their cognitive resources which, in turn, affects their ability to comprehend (Cutting & Scarborough, 2006). Relatedly, in a study of reading abilities in university students with dyslexia, Simmons and Singleton (2000) found that comprehension—specifically, making inferences from texts—was the weakest skill among students. As noted previously, lower-level deficits related to decoding will have a direct effect on higher-level cognitive processes, which include processes related to comprehension.

To explore the learning experiences of university students with dyslexia, MacCullagh and colleagues conducted interviews of several students with reading disabilities (MacCullagh, Bosanquet, & Badcock, 2016). Through these interviews, they found that the majority of students engaged in or experienced the following: (a) selective reading (i.e., students reported that they rarely completed course readings); (b) difficulties with taking lecture notes; (c) preference for face-to-face instruction; (d) frequent use of supplemental videos as study aids; (e) a need for low-distraction learning environments, and (f) inability to complete exams (MacCullagh et al., 2016). Similarly, a 2014 study identified common struggles of college students with dyslexia that included maladaptive coping strategies such as academic dishonesty, the stigma of the dyslexia label, anxiety surrounding faculty interactions, the need for course accommodations or adjustments, and utilization of numerous assistive technology devices (Pino

& Mortari, 2014). Other research found that university students with dyslexia struggle to identify main ideas in texts or effectively prepare for exams (Kirby et al., 2008) and read and take notes on course texts (Olofsson, Ahl, & Taube, 2012). One study conducted by Nelson and colleagues showed that college students with dyslexia read at a much slower rate than their peers; on average, students with dyslexia read 30% slower (Nelson et al, 2019). For a college student with dyslexia, the reading demands of a typical full load of courses can seem virtually impossible. To keep up with reading and course content, students with dyslexia may seek out extra tutoring in reading, writing, and other subjects. These additional hours of academic support create additional demands on the schedule of a student with dyslexia, as they spend far more hours than their peers receiving extra instruction (Barga, 1996),

Research has also demonstrated the toll that dyslexia takes on a college student's mental health. Many college students with dyslexia do not feel like they belong in academic spaces (Cameron, 2016), which alienates them from their peers and professors. In educational contexts, college students with dyslexia have shown much lower levels of self-esteem (Carroll & Iles, 2006). These self-esteem issues may stem from negative academic experiences early in their schooling, which follow them throughout their academic lives (McNulty, 2003). By remediating academic difficulties, universities may be able to improve the confidence of students with dyslexia.

Accommodations

When a student discloses a disability, such as dyslexia, the Americans with Disabilities Act (1990) requires postsecondary institutions to provide necessary accommodations that allow students reasonable access to coursework and exams. The most common accommodation for students with reading disabilities is extended time (Lindstrom, 2007), but other reasonable

accommodations for students with learning disabilities include note-taking services, recorded lectures, captioned films, alternative testing locations, word processing software with spell check, and written instructions or visual aids (Louisiana State University-Shreveport, 2017). Table 3, adapted from Lindstrom (2007), gives an overview of the accommodations typically provided for students with reading disabilities. Note that although such accommodations can be helpful, they do not address nor remediate the underlying knowledge deficits of postsecondary students with dyslexia. Accommodations allow students access to content, but they do not increase the reading abilities of the student receiving accommodations.

Table 3

Accommodations for Reading Disorders in Higher Education

Test Accommodations	Access Accommodations	Program Accommodations
• Low-distraction location • Extended time (1.5, double, or untimed) • Speech-to-text technology • Word processing software • Proofreader • Reader • Interpreter to clarify instructions • Scribe • Scheduled breaks	• Special allowances on in-class assignments that include reading or writing • Note-taking services • Alternative texts (e-book, audio tape, screen reader)	• Reduced course load • Course substitution • Priority registration

UNIQUE PROBLEMS OF STUDENT ATHLETES

More than 11% of student athletes competing at the Division I, II, and III levels have documented disabilities; as many as two-thirds have a diagnosis of a specific learning disability. (National Center for Education Statistics, 2011). Reading disabilities make up the largest

subgroup of learning disability diagnoses (Shaywitz, 2003). Therefore, many student athletes must navigate the difficulties of dyslexia in post-secondary education. In addition to coping with a disability in a university setting, collegiate student athletes also face unique issues that accompany the status of being a student athlete. These unique issues include competing obligations of their sport and academics, negative stereotyping from faculty and peers, a desire for autonomy, and lack of control.

Competing obligations

The biggest challenge collegiate student athletes face is balancing the competing demands of academics and their sport (Etzel, Watson, Visek, & Maniar, 2006). Student athletes commit a significant amount of time each week to their sport. The NCAA allows athletes to participate in 20 hours of practice and team meetings weekly, or four hours each day (NCAA, 2020a). To maintain eligibility, athletes are also required to enroll in a full load of classes—12 to 15 hours weekly—in either face-to-face or online courses (NCAA, 2020b). Their rigid athletic schedule limits student athletes in what courses they may take, and in season, competition and travel schedules put even more time constraints on a student athlete's academic demands (Monda, Etzel, Shannon, & Wooding, 2015). Although most collegiate athletic programs encourage students to prioritize academics, athletic staff send mixed messages. Although coaches reinforce athletic success regularly, there is far less reinforcement when it comes to success in the classroom (Adler & Adler, 1985). In their study, Adler and Adler reported that student athletes often perceived the lack of academic reinforcement as a reason to focus more on athletics. Student-athletes also feel the imbalance of athletic and academic demands; in one survey of Division I athletes, 65% of athletes reported that they would likely have a higher GPA if they did not participate in a sport (Potuto & O'Hanlon, 2007). The competing academic and

athletic demands can overwhelm student athletes with learning disabilities, who may need an additional 10-15 hours of academic support each week (Stokowski et al., 2017).

Negative stereotypes

Collegiate student athletes often face negative academic stereotypes from faculty and peers (Baucom & Lantz, 2001). Non-athletic peers often perceived student athletes to be less intelligent, less capable, and more likely to receive special benefits (Engstrom & Sedlacek, 1991). Similarly, it has been shown that faculty have held negative perceptions of student athletes concerning academic performance, recognition and special services, and academic dishonesty (Engstrom, Sedlacek, & McEwen, 1995). Faculty have also expressed negative attitudes surrounding perceived preferential treatment of athletes in admissions, financial support, and academic services (Baucom & Lantz, 2001). Furthermore, negative stereotypes and perceptions of student athletes reinforce perceptions by the student athletes that they do not belong at the university, and instead, student athletes focus on their athletic performance (Adler & Adler, 1985).

For student athletes with learning disabilities, the negative stereotypes can be detrimental. For example, the widely-held belief that student athletes receive preferential academic support may prevent students from seeking out necessary accommodations. In addition, the perception that student athletes are academically incapable may prevent them from seeking assistance from instructors or accommodations for fear of perpetuating the stereotype (Stokowski et al., 2017). These negative stereotypes can lead to low self-esteem and low frustration tolerance for student athletes with learning disabilities such as dyslexia (Clark & Parette, 2002).

Autonomy and Lack of Control

From the time they enter college, student athletes have academic counselors and assistant coaches making academic decisions (e.g., registration, major selection) for them. Because of this lack of control, student athletes often do not develop the initiative or interest to handle academic matters (Adler & Adler, 1985). The handling of academic matters by academic or coaching staff also creates a false sense of security for student athletes. They may feel that because their administrative academic responsibilities are "handled," their grades are as well (Adler & Adler, 1985). This false perception of academic safety may cause student athletes with learning disabilities to put in less effort and ignore additional academic support opportunities because they feel that they do not need it.

In a 2018 study, Haslerig found that student athletes greatly value their autonomy. In the beginning of their academic careers, student athletes are assigned copious amounts of mandatory tutoring, study hall, and mentoring hours. As they become academically successful, student athletes are rewarded with less academic support and more autonomy. Lack of extra academic support signifies academic success for student athletes (Haslerig, 2018). Therefore, student athletes that need accommodations or additional support may be resistant to request services because they may lose autonomy or be labelled as less successful.

In addition to the difficulties that most college students with dyslexia may face in a university setting, student athletes with dyslexia have additional circumstances that may affect their academic success. With a documented disability, student athletes have the option to receive accommodations from their university to promote success in their coursework. However, competing priorities, negative stereotypes, and lack of autonomy may prevent student athletes

with learning disabilities such as dyslexia from seeking services or additional support (Adler & Adler, 1985; Haslerig, 2018).

CURRENT SUPPORT SERVICES FOR STUDENT ATHLETES

Although there has been little research on how to best support student athletes with dyslexia, a fairly standardized model of support for student athletes with learning disabilities is utilized in most Division I institutions. Building on the Student Services for Athletes model proposed by Jordan and Denson (1990), the currently accepted model of support for student athletes with learning disabilities is a holistic approach that incorporates specialized support services that enhance the student athlete experience (Clark & Parette, 1990; Weiss, 2017).

The Student Services for Athletes model (Jordan & Denson, 1990) requires academic support staff to provide the following: (a) academic monitoring, support services (tutoring), and planning; (b) academic and social counselling; (c) programming and workshops specific to their needs; (d) frequent communication, collaboration, and consultation with faculty, staff, and family; and (e) leadership and self-advocacy skills. Clarke and Parette (1990) noted that the model was not sufficient for supporting student athletes with learning disabilities. They provided several adjustments to better serve the individual needs of those students (see Table 3). Among the major changes that were recommended included academic self-monitoring, specialized tutoring services, structured study halls, peer mentors, diagnostic testing, education on their disability, and teaching self-advocacy related to the Americans with Disabilities Act (Clarke & Parette, 1990).

The most current model for supporting student athletes with learning disabilities was outlined by Weiss (2011; see Table 4) In addition to the supports outlined by Clark and Parette (1990), this model details the individualized academic support that student athletes with learning

disabilities need. Specifically, academic coordinators identify student athletes that either have a diagnosis or are suspected of having a learning disability. These students then receive a psychoeducational evaluation. They are then matched with a learning specialist that develops and implements an individualized plan for support that includes obtaining accommodations, organizing individual and group tutoring, and instruction in academic planning and monitoring. The goal of this support model was to lead student athletes with learning disabilities to independence within two years of academic support, and the outcomes support that. After five years of implementation, 54 of 60 student athletes that worked with learning specialists had at least a 2.0 GPA (Weiss, 2011).

Table 4

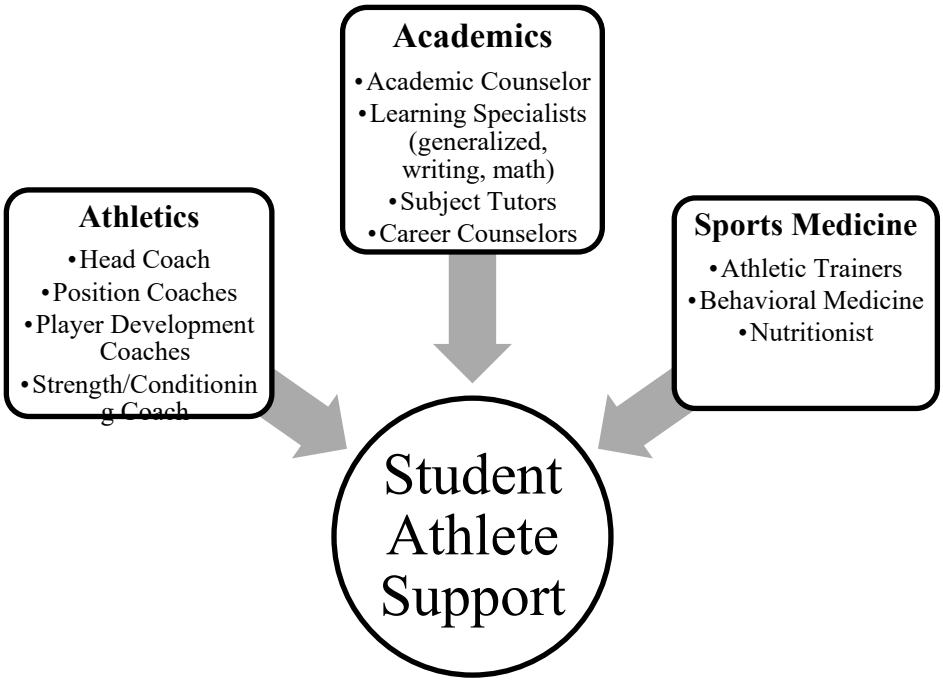
Current Support Models for Student Athletes with Learning Disabilities

Clark and Parette (1990)	Weiss (2011)
Academic monitoring/planning: • Pre-advisement coaching • Teach monitoring and planning strategies • Subject tutoring • Study hall • Diagnostic testing (psychoeducational evaluations) Programming: • Attend career development workshops • Train for academic success • Examine interpersonal relationships Consultation and Collaboration: • Meet frequently with professors • Communicate academic goals and successes with coaches, family Leadership and Self-advocacy: • Develop leadership through student organizations • Learn self-advocacy skills of disability • Education on Americans with Disabilities Act	Academic coaching: • Help the student learn content, time management, and study skills • Set weekly learning goals Structured study hall: • Small-group-based study halls • Focus on content, task analysis, or time management Study groups: • Small-group tutoring • Review readings, vocabulary, and study strategies for specific courses • Peer-to-peer teaching College success seminars: • Large group • Focus on study skills, college topics, life as a student athlete Assistive technology: • Individual training on utilization of assistive technology such as speech to text programs, alternative texts, or e-readers.

Figure 2 is an outline of the typical network of support SAs receive from athletics, academics, and sports medicine; this model conforms to the recommendations by Weiss (2011) and Clark and Parette (1990). In the athletic sphere, student athletes typically interact daily with their sport's respective head coach, specialized position coaches, and a strength coach that oversees their workouts. Academically, the student athletes will have an academic counselor that coordinates their academic scheduling, monitors their grades, and organizes additional academic support such as subject tutors, learning specialists, and writing and/or math specialists. Learning specialists provide academic coaching, instruction in study skills, time management, and organization strategies. Student athletes also interact with sports medicine personnel on a daily basis that may include athletic trainers, nutritionists, or behavioral medicine counselors. Together, these professionals create an individualized network of support for each and every student athlete.

Figure 2

A Typical Support Network for Student Athletes



CONCLUSION

Despite the development of student services for student athletes with learning disabilities, little research has been done on how to address one of the most common learning disabilities—dyslexia. Services provide general academic support through tutoring and planning as well as education on how to obtain accommodations and self-advocate for needs stemming from learning disabilities. The goal of support services for student athletes is ultimately academic independence and success. To achieve independence for student athletes with dyslexia, support services should incorporate evidence-based interventions that address the underlying weaknesses of the disability.

CHAPTER 4

PROPOSED MODEL OF SUPPORT

In addition to the support that student athletes with learning disabilities currently receive, institutions should implement evidence-based interventions to remediate reading weaknesses. Adult readers respond well to intensive instruction (Scarborough et al., 2013); therefore, intensive instruction can greatly benefit post-secondary students with reading difficulties. To support student athletes with reading disabilities such as dyslexia, structured literacy should be added to an institution's current model of support. Structured literacy can seamlessly be included in the intervention models proposed by Clark and Parette (1990) and Weiss (2011) as a supplement to the academic coaching and tutoring the student athlete already receives. The proposed model of support includes an intensive structured literacy program that addresses the unique issues of both the adult reader and student athlete populations. The following recommendations are provided as a framework for institutions.

THE STRUCTURED LITERACY INTENSIVE

The proposed Structured Literacy Intensive consists of a summer intervention program for select, high-need student athletes. Each summer, the program would provide intensive, structured literacy instruction for a caseload of the most at-risk student athletes with dyslexia. With a conservative estimate of 5% of the population being affected by dyslexia (Shaywitz, 2003), at least 35 student athletes may have dyslexia at any Division-I institution (out of ~700 student athletes). The Structured Literacy Intensive is designed to target the most at-risk of that population, so the program would accommodate 10-15 student athletes per summer. The

program will be coordinated by a lead learning specialist with a background in reading disabilities and intervention. The lead learning specialist will be supported by a team of 2-4 learning specialists trained in structured literacy interventions. After completing a caseload selection process and administering reading assessments, the lead learning specialist will plan individualized instructional plans for each student athlete participating in the Structured Literacy Intensive. Depending on individual needs, the student athlete may be enrolled in the program for four, six, or eight weeks, receiving 2-4 hours of instruction daily. The lead learning specialist will also be responsible for writing daily lesson plans for each student; the lesson plans will include exercises in phonological awareness, word reading, spelling, sentence or passage reading, and comprehension. The supporting learning specialists will conduct sessions following the pre-written lesson plans. In addition, they will be responsible for formal and informal progress monitoring. After the conclusion of instruction, the lead learning specialist will meet with the student and their academic counselor to discuss areas of growth, skills that still need improvement, and a support plan for the academic year. See Appendix A for an outline of the Structured Literacy Intensive.

Program Coordinator

A lead learning specialist will serve as the program coordinator. The lead learning specialist should have a background in reading disabilities and structured literacy interventions. Responsibilities of the coordinator will include (a) identifying a possible caseload of student athletes, (b) conducting a diagnostic assessment of these student athletes and selecting the most at-risk student athletes to participate in the Structured Literacy Intensive, (c) creating a structured literacy plan based on students' individual needs, (d) developing and implementing daily lesson plans for each student, (e) conducting regular progress monitoring of student athletes' reading

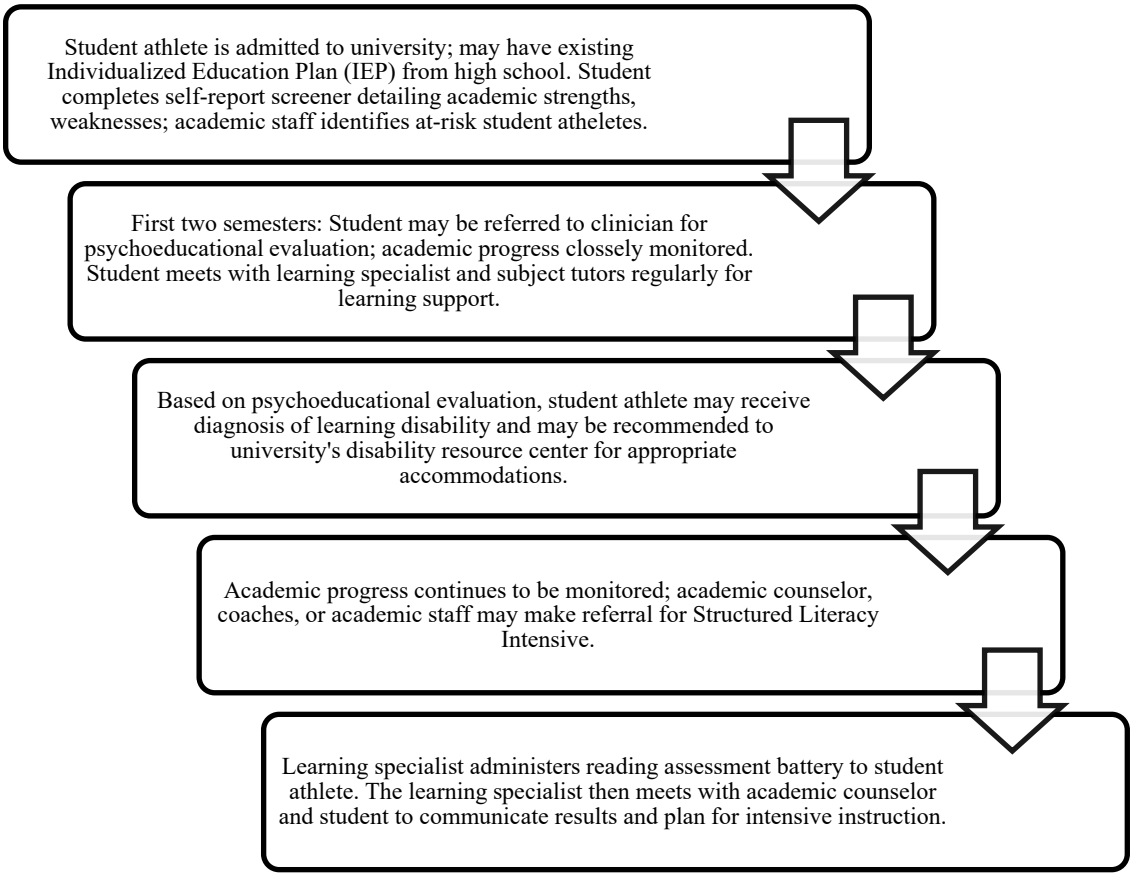
development, and (f) communicating and collaborating progress and student needs with other academic staff such as academic counselors, learning specialists, and subject tutors. The lead learning specialist will also oversee the operations of the supporting learning specialists.

Caseload Selection

A caseload of 10-15 student-athletes that demonstrate the highest need will be selected each summer. Eligibility for the summer intensive will be determined by academic counselor recommendations, previous psychoeducational testing performance (specifically, student athletes who received special education services in high-school or were flagged during the admission process as possibly needing academic support receive a psychoeducational evaluation by a psychologist), and monitoring of academic performance in previous coursework and academic support sessions (see Appendix B for selection guidelines). Academic counselors will identify student athletes that they believe have reading weaknesses based on academic monitoring, self-report, or other anecdotal evidence. The lead learning specialist will also review past psychoeducational testing results, paying special attention to phonological awareness, decoding, spelling, and reading fluency measures. In addition, a student athlete's academic performance in coursework and support sessions will be monitored for at least two semesters; student athletes will be eligible for the Structured Literacy Intensive after completing their first year of study. The lead learning specialist will select up to 15 students to be assessed for each summer term and then initiate the process by meeting with each student athlete and the respective counselor to present the program, schedule a reading assessment, and answer any questions the student athlete may have. Figure 3 details the timeline from admission to the institution to the start of the Structured Literacy Intensive.

Figure 3

A Timeline from Admission to Structured Literacy Intensive



Pre-Assessments

Once a student athlete has been identified as a possible candidate for the Structured Literacy Intensive, the lead learning specialist will administer a reading assessment battery to measure the student athlete's reading strengths and weaknesses. The battery should include a measure of phonological awareness, real and nonsense word decoding, spelling, reading fluency, and reading comprehension (Lindstrom, 2019). Table 5 details a suggested battery for the pre-assessment.

Table 5

Suggested Reading Assessment Battery

Assessment	Skills measured
Comprehensive Test of Phonological Processing – 2 (CTOPP-2)	• Phonological awareness • phonological memory • rapid automatic naming
Woodcock-Johnson IV Tests of Achievement (WJ-4)	• Letter-sound knowledge • Decoding • Reading fluency • Spelling • Comprehension
Gray Oral Reading Test – 5 (GORT-5)*	• Reading fluency • Comprehension
Nelson-Denny Reading Test (NDRT)*	• Comprehension
Test of Irregular Word Reading Efficiency (TIWRE)	• Sight word recognition

*Either the GORT-5 or the NDRT can be administered.

Once the student athlete completes the battery of assessments, the coordinator will hand-score each measure and complete a score report that includes raw scores, standard scores, and percentiles. The score report will allow the student and coordinator to establish a starting point for instruction and a baseline to which post-assessment scores can be compared. The coordinator will analyze the student's performance on each measure to create an individualized curriculum of instruction, using the student's strengths and weaknesses to inform instruction.

Scheduling

The structured literacy program will conform to the rigid schedule of the student athlete. Due to the intensive nature of a structured literacy program, it is not feasible to implement the program during the fall or spring semesters when student athletes have 12 to 15 hours of coursework as well as up to 20 hours committed to their sport. To ensure that the student athlete will receive reading instruction that is intensive and consistent, the reading program should take

place during the summer term when both athletic and academic demands are relatively low for the student athlete (Monda, Etzel, Shannon, & Wooding, 2015).

For the Structured Literacy Intensive, student athletes will receive at least two hours of reading instruction daily, five days per week. The duration of weeks will be dictated by the student athlete's performance on the assessment; students with lower scores in the foundational areas of phonological awareness, decoding, and word recognition will require many more hours of instruction (Vaughn, Denton, & Fletcher, 2010). As such, the Structured Literacy Intensive will be tailored to specific student needs. Some students may receive services for the duration of the summer term—up to twelve weeks. Student athletes enrolled in the structured literacy intervention will receive a minimum of 40 hours of instruction in reading with the possibility of up to 120 hours. The two-hour, five day weekly schedule of intervention is substantiated by research conducted by Torgesen and colleagues (2001), in which they measured the efficacy of an intensive intervention that consisted of 8 weeks of 100 minutes of daily instruction (~67.5 hours). The study found the intervention to be effective immediately after the conclusion of the 8-week intervention, and the gains were retained two years later in a follow-up study (Torgesen et al, 2001). In addition, Blachman and colleagues (2004) found 105 hours of intensive intervention to be effective for students with severe reading disabilities (Blachman et al, 2004). Therefore, the 40-120 hour schedule of intervention should lead to reading gains for student athletes.

In addition, while student athletes are enrolled in the intensive reading intervention, they will not be required to be enrolled in university courses. This will reduce the academic demands placed on the students and allow them to focus on the reading remediation. Finally, daily

intervention sessions will be scheduled around any athletic demands such as team workouts or meetings.

Student Commitment

In order for the intervention to be successful, it is vital that the student athletes are committed to completing the program. Student athletes must understand and value the goals of the structured literacy intervention. The initial meeting with the counselor and the student athlete is when the program coordinator begins to establish commitment by showing student athletes how they can directly benefit from the structured literacy program. In addition, student athletes may be enticed by the reduced academic course load and the promise that they will still receive all scholarship accommodations such as housing, meal plan, and their weekly financial stipend. The program coordinator may opt to have student athletes sign a contract once they have agreed to participate; the contract should outline the program details, possible outcomes, and can serve as a reminder and motivator throughout the duration of the intervention. See Appendix C for an example of such contract.

The Structured Literacy Program

As noted in Chapter 2, the defining elements of a structured literacy program are explicit instruction, continual diagnostics, and a cumulative scope and sequence (Spear-Swerling, 2019). The program should include daily instruction in phonology, sound-symbol associations, morphology, syllables, syntax, and semantics (Carreker, 2020). The Structured Literacy Intensive follows the guidelines of a standard structured literacy intervention.

Key Components

The intervention program will be scaffolded, cumulative, and based on student athletes' individual needs as demonstrated in their pre-assessment and academic monitoring. Instruction

will begin with a systematic introduction to phonemes, syllable types (r-controlled, closed, open, vowel-consonant-e, vowel pair/diphthong, and consonant-le), and irregular words. One syllable type will be introduced at a time, and pace of instruction will be dictated by student progress. In addition, the foundational skills of reading—phonological awareness, decoding, spelling, fluency, and comprehension—will be included in every lesson (Carreker, 2020; Spear-Swerling, 2019). A suggested scope and sequence can be found in Appendix D.

Lesson Plans

The program coordinator will create daily lesson plans for the student athlete based on the student's progress and pace. Adhering to the structured literacy framework, lessons will include phoneme drills, review of previous content, explicit instruction of new concepts, word/sentence decoding, spelling, high frequency word decoding/spelling, and text reading (Spear-Swerling, 2019). These tasks reinforce the structured literacy framework that includes instruction in phonology, sound-symbol associations, syllables, morphology, syntax, and semantics (Carreker, 2020). The coordinator will monitor progress daily and base the following day's lesson plans on student progress. A sample lesson plan template has been included in Appendix E.

Each task in the lesson plan reinforces a skill that is integral to becoming a proficient reader. The first task, phoneme drills, helps to strengthen the student athlete's phonological awareness through speech-sound associations (Moats, 2000). Phonological awareness is also reinforced in blending, segmenting, deletion, and addition drills; these tasks strengthen the student athlete's letter-sound associations as well (Carreker, 2020). Syllable knowledge is reinforced through teaching and reviewing syllable types, marking syllables, or dividing words into syllables; these activities help students to spell and decode multisyllable words (Spear-

Swerling, 2019). Morphology, or knowledge of word parts, is covered throughout the scope and sequence in teaching students to read and spell prefixes and suffixes; morpheme instruction allows students to break unfamiliar words down into smaller decodable parts to derive meaning (Goodwin & Ahn, 2013). Finally, syntax and semantics—both necessary skills to be taught to improve comprehension at the word, sentence, and passage level (Nelson, 2013)—will be address through sentence reading and writing tasks as well as passage reading. Table 6 includes the components of a structured literacy lesson as well as possible tasks for each component.

Table 6

Possible Lesson Plan Activities

Component of structured literacy	Activities to incorporate in lesson plan
Phonological Awareness	Isolation, identification, blending, segmentation, addition, substitution; auditory drills
Sound-Symbol Associations	Visual drills, blending drills
Syllables	Marking words by syllable, syllable division with cards or boards
Morphology	Spelling, word reading
Syntax	Combining sentences, sentence reading/writing, passage reading
Semantics	Vocabulary instruction, passage reading, instruction on "signal words" like transitions, conditionals

Progress Monitoring

The program coordinator will conduct regular progress monitoring. Formal progress monitoring checks should be conducted to assess whether a student has mastered a concept or not. Formal progress monitoring can include written and verbal assessments of decoding, spelling, and reading fluency. The CORE Reading Assessment for grades 9-12 can be a useful monitoring tool to measure progress (Diamond, 2008). The CORE Reading Assessment includes the CORE Reading Maze Comprehension, the San Diego Quick Assessment of Reading Ability, The CORE Phoneme Segmentation Test, the CORE Phonics Survey to measure reading and

decoding skills, and the CORE Graded High-Frequency Word Survey (Diamond, 2008). The interventionists should conduct the CORE Reading Assessment on the first day of instruction to establish a baseline level for each student, and then it should be administered again at the conclusion of the Structured Literacy Intensive to measure areas of growth. The lead learning specialist may also choose to administer the CORE Reading Assessment at a halfway point during instruction for diagnostic or progress monitoring reasons. Appendix F includes a progress monitoring recording form. In addition, informal progress monitoring is conducted throughout the lesson to constantly diagnose and revise lesson plans to match the student's pace. Weekly progress updates led by the lead learning specialist will be conducted with the student athlete and their academic counselor. These progress updates should include discussion of concepts mastered, concepts currently being covered, and concepts that will be covered next. The program coordinator should also communicate whether a student may need additional instruction time that summer, in summers following, or during the academic school year.

Post-Summer Intensive Instructional Support

Reading support will extend beyond the intensive structured literacy intervention. After the conclusion of the intensive program, the program coordinator will establish an individualized support plan that will include reinforcement of reading skills practiced in the structured literacy program. During the academic year, the student athlete should be paired with a learning specialist with experience in reading interventions. The student athlete should receive structured literacy sessions throughout the academic year in addition to their academic coaching and tutoring; these sessions should continue at least two times a week during the academic year. The learning specialist should consistently reinforce reading skills and apply them to course content and readings. In addition, supporting learning specialists should monitor for reading strengths

and weaknesses and communicate them to the program coordinator frequently; they can then recommend further intensive structured literacy intervention for the student if needed.

CONCLUSION

As previously stated, student athletes with dyslexia are not only required to navigate the difficulties of a learning disability in a postsecondary setting, but they also must balance the demands of their sport and their courses. Universities provide accommodations for students with documented disabilities that student athletes may utilize. However, these accommodations do not address the underlying knowledge deficits that are associated with learning disabilities by dyslexia. In addition, little research has addressed how institutions can support student athletes with dyslexia. Athletic associations and their respective academic support staffs can support student athletes with dyslexia by implementing intensive, evidence-based interventions. Structured literacy is an effective intervention for the reading difficulties that are associated with dyslexia, and it can easily be incorporated into the existing support structures that institutions provide for student athletes. The proposed model, the Structured Literacy Intensive, follows the framework of a structured literacy intervention while also addressing the unique demands of student athletes. Future research should investigate the efficacy of structured literacy interventions for student athletes with dyslexia and its outcomes for students that receive structured literacy instruction.

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APPENDIX A – PROGRAM OUTLINE

STRUCTURED LITERACY INTENSIVE - OUTLINE

Purpose: The purpose of the structured literacy initiative is to provide students with decoding weaknesses intensive evidence-based reading intervention to enhance independence in decoding and comprehension.

1. **Caseload Selection**
    a. Guidelines:
        i. See attached document
2. **Pre-Assessments**
    a. Should take 2-3 hours
    b. Will measure:
        i. Phonological awareness
        ii. Rapid naming
        iii. Phonemic awareness
        iv. Letter-sound associations
        v. Decoding/Word attack (real and nonsense)
        vi. High-frequency words
        vii. Reading Comprehension
    c. Standardized Assessment Battery:
        i. CTOPP-2
            1. Phonological awareness
        ii. WJ-5
            1. Letter-sound knowledge
            2. Decoding
            3. Reading fluency
            4. Spelling
            5. Comprehension
        iii. TIWRE
            1. Irregular sight words
        iv. NDRT
            1. Reading comprehension
        v. GORT-5
            1. Reading fluency
            2. Reading comprehension
3. **Individualized Curriculum Planning**
    a. Duration of instruction
        i. 4, 6, or 8-week instructional plan
    b. Scope and sequence based on individual needs
4. **LS/Mentor Collaboration**
    a. During intensive instruction

b. After intensive instruction
c. Workshop/training to reinforce skills in academic sessions

5. **Instruction**
    a. Lesson Plan Structure
        i. Drills
        ii. Review
        iii. Explicit instruction
        iv. Word/sentence reading
        v. Writing
        vi. Text reading
        vii. High frequency words (sight words)
    b. Content will be scaffolded, cumulative, and review will be consistent
    c. Reading material
        i. Based on student interest
        ii. Articles, college texts
    d. Record/notes
6. **Motivation**
    a. Intrinsic - student must value purpose
    b. No summer classes (or reduced course load)
    c. Continued on-campus housing
    d. Other on-campus benefits
7. **Progress Monitoring**
    a. Formal measures
    b. Informal Measures daily
    c. Reporting
        i. Frequency
            1. Daily, weekly
        ii. Format
            1. Daily recorded notes
            2. Weekly update/consultation w/ counselor
8. **Re-Assessments**
    a. Final day of instruction
    b. Score Reports
    c. Consultations/Collaboration
9. **Instructional Support Plans/follow-up Instruction**
    a. Specialized mentors/school-year support
    b. Additional intensive instruction
    c. Progress monitoring throughout semester

APPENDIX B – CASELOAD SELECTION GUIDELINES

To ensure that the most at-risk students receive intensive reading instruction, the following criteria have been prioritized for caseload selection:

1. **Psychoeducational Reports**
    a. Skills to consider:
        i. Decoding
        ii. Word attack
        iii. Oral Reading Fluency
        iv. Phonological Awareness/Phonemic Awareness
        v. Spelling
        vi. Writing
        vii. Comprehension
2. **Learning Specialist Recommendations**
    a. Students with reading, spelling, and/or writing weaknesses
3. **Counselor Recommendations**
    a. Students that have no diagnosis
    b. Students that do not see learning specialist regularly
    c. Incoming students w/ diagnosis, IEP, red flags
    d. English as a second language
4. **Motivation**
    a. Self-motivated students will be prioritized

APPENDIX C – CONTRACT

NAME
SPORT
STUDENT ID #

Dear NAME,

We are pleased that you have decided to participate in the Structured Literacy Intensive. The Structured Literacy Intensive is a program designed to strengthen your reading skills through daily intensive one-on-one instruction in reading, spelling, and comprehension skills. At the conclusion of the program, you will be a stronger, more confident reader.

Please note that participating in SIW is a **commitment**. It is both time intensive and cognitively demanding. Because of this, you must fulfill a number of requirements in order to see maximum benefits. For your time and effort, you will receive a stipend check upon completion of SIW.

Requirements:

- Daily and timely attendance (DATES AND TIMES HERE)
- Instruction for X number of weeks
- Active engagement and participation
- No cell phone use except during breaks
- If you are sick, you must provide medical documentation and make up the lost time by coordinating with (NAME OF COORDINATOR). Please note that we cannot guarantee make up sessions for *unexcused* absences (e.g. sleeping through session).

By signing this agreement, you acknowledge the above requirements.

_____ _____

Signature of Program Coordinator Date

_____ _____

Signature of Student-Athlete Date

APPENDIX D – SCOPE AND SEQUENCE

Closed Syllables (3 sounds)
• f, l, m, n, r, s, d, g, p, t, a, i, o (blending) (ex: rim)
• b, sh, h, j, c, k, ck, v, w, x, y, z, ch, th, qu, wh, u, e; (ex: check)
• practice the above (ex: wish, chop, wet)
• double consonants l, s, f and - all (ex: bill, kiss, call)
• am, an (ex: ham, fan)
• suffix s (ex: bugs, chills)
Closed Syllables (4-6 sounds)
• ang, ing, ong, ung, ank, ink, onk, unk (ex: bang, pink)
• closed syllables with blends (ex: bled, past, steps)
• closed syllable exceptions - ild, ind, old, ost, olt (ex: mold, host)
• 5 sounds + suffix s (ex: blend, trumps)
• 3 letter blends - 6 sounds (ex: sprint, scrap)
Closed Syllables (Multisyllabic Words)
• two-syllable words with two closed syllables (ex: catnip, wagon)
• two closed syllables, including blends (ex: disrupt, fragment)
• words with two closed syllables ending in ct (ex: contract, district)
• multisyllabic words with closed syllables (ex: Wisconsin, establish)
• ed, ing suffixes added to basewords (ex: slashing, blended)
Vowel - Consonant - E Syllable (VCE)
• VCE syllable in one-syllable words (ex: hope, cave)
• VCE syllable combined with closed syllables (ex: combine, reptile)
• multisyllabic words with two syllable types (ex: compensate)
• ive exception (ex: olive, pensive)
Open Syllable
• open syllable in one-syllable words, y as a vowel (ex: he, hi, shy)
• open syllables combined with VCE and closed syllables in two
• syllable words (ex: protect, decline)
• y as a vowel in two-syllable words (ex: handy, pony)
• multisyllabic words with the 3 syllable types (ex:regulate)
• a and i in unaccented syllables (ex: Alaska, indicate)
Suffix Endings and Consonant-l-e Syllable
• suffixes er, est, en, es, able, ish, y, ive, ly, ty, less, ness, ment,
• ful added to basewords (ex: thankful, classy)
• suffix ed: sounds d, t (ex: thrilled, punished)
• combining 2 suffixes to baseword (ex: constructively, helpfulness)
• consonant - le, stle exception (ex: dribble, whistle)
Introduction to Sound Options, Contractions
• c or g before e, I, or y (ex: concentrate, concede, gentle)
• ge, ce, dge (ex: lunge, indulgence, fudge)
• Trigraph and digraph: tch, ph (ex: fetch, pamphlet)

R-Controlled Syllables
• ar, er, ir, or, ur - in 1 syllable words (ex: firm, turn, barn)
• ar, or - in multisyllabic words (ex: market, cortex)
• er, ir, ur - in multisyllabic words (ex: skirmish, surgery)
• Exceptions vowel rr (ex: hurry, barren) para
• Exceptions ar, or - in final syllable (ex: beggar, doctor)
• ard, ward (ex: blizzard, on-ward)
Vowel Digraph - Dipthong Syllable
• ai, ay (ex: plain, display)
• ee, ey (ex: tweezer, valley)
• oa, oe, ue (ex: croak, toe, revenue)
• oi, oy, au, aw (ex: thyroid, employ, saucer, squawk)
• ou, ow, oo (ex: trousers, drowsy, spoon)
• ea (ex: eat, bread, steak)
• eu, ew, ui (ex: Europe, few, suit)
Adding Suffixes to Changing Basewords
• VCE exceptions: ice, ace, age, ate, ile, ite, ine
• Spelling Rule: baseword ending in e + suffix (ex: taping)
• Spelling Rule: 1 syllable, closed or r-controlled baseword
• + suffix (ex: starred or shopful)
• Spelling Rule: double final consonant of multisyllabic
• baseword when adding suffix (ex: regretting, controlled)
• Additional suffixes: ic, al, ible, ous, ist, ism, ity, ize, ary, ery
Additional I, E, Y Vowel Work
• y in open, closed, VCE syllable (ex: reply, gym, type)
• The Y Spelling Rule (ex: enjoyable, player)
• i in an open syllable pronounced as /e/ (ex: orient)
• i as /y/ (ex: genius, million)
• ie/ei (ex: piece, ceiling, vein)
• igh, eigh (ex: light, eight)
Advanced Concepts
• Split vowels: vowel team exceptions (ex: create, violin)
• Silent letters: rh, gh, mb, mn, kn, gn, wr (ex: rhyme, ghost)
• 'w' influencing vowels (ex: water, worship)
• ch, que, /k/ (ex: chorus, clique)
• ti, ci, tu, ture (ex: patient, official, actual, torture)
• Chameleon prefixes (ex: correct, accent)

APPENDIX E – LESSON PLAN TEMPLATE

Student name: Date: Week ___ of ___

1. Phonemic Awareness/Auditory Practice
2. Drill deck – phonemes
    a. Review:
    b. New:
3. Spelling – phoneme/morphemes
    a. Review:
    b. New:
4. Reading: Last session's dictation
5. Review Past concepts
    a. Decoding Review words:
    b. Spelling Review words:
6. Introduce new concept
    a. Decoding with new concept
    b. Spell words
7. Irregular word practice
    a. Decoding
    b. Spelling
8. Spelling
    a. Words/sentences
9. Reading fluency/comprehension
    a. Passage/novel/article reading

APPENDIX F – CORE READING ASSESSMENT

Structured Literacy Intensive Recording Form

Name: Administered by:

Measure	Baseline Score Date:	Mid-Point Score Date:	Completion Score Date:
CORE Reading Maze Comprehension			
San Diego Quick Assessment of Reading Ability Independent level: 1error Instructional level: 2 errors Frustration level: 3+ errors			
CORE Phoneme Segmentation Test	/20	/20	/20
CORE Phonics Survey – Reading/Decoding Skills • Short Vowels in CVC words • Consonant blends with short vowels • Short vowels, digraphs, and -tch • R-controlled vowels • Long vowel spellings • Variant vowels • Low frequency vowel and consonant spellings • Multisyllabic words	 /15 /15 /15 /15 /15 /15 /15 /24	 /15 /15 /15 /15 /15 /15 /15 /24	 /15 /15 /15 /15 /15 /15 /15 /24
CORE Graded High-Frequency Word Survey			