

CDE DYSLEXIA GUIDELINES AND SCHOOL PSYCHOLOGISTS

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Current Events

- **Cassidy-Mikulski Senate Resolution 275**
 - Designated October 2015 as National Dyslexia Awareness Month
 - defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader
 - Early diagnosis is critical
- **Department of Education Guidance Letter October 23, 2015**
 - IEP teams can use terms dyslexia, dysgraphia and dyscalculia
 - May be useful in planning interventions
 - Use of MTSS, RTI
 - "may be used to identify students at risk for poor learning outcomes, including dyslexia dyscalculia or dysgraphia; monitor their progress; provide evidence based interventions and adjust ...interventions" p. 2
 - Referenced in CDE Guidelines

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Outline

- Current Events: Legislation/Guidelines
- Reading Basics
- Dyslexia Basics
- Screening and Assessment
- Intervention

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CA Legislation

- **AB 1369**
 - Add phonological processing to basic psychological processes
 - "shall develop program guidelines for dyslexia to be used to assist regular education teachers, special education teachers, and parents to identify and assess pupils with dyslexia, and to plan, provide, evaluate, and improve educational services to pupils with dyslexia"
 - Work group met and guidelines published August 2017

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Parent groups

- www.decodingdyslexia.net
- www.understood.org
- www.ldonline.org

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CDE Guidelines

<http://www.cde.ca.gov/sp/se/ac/documents/cadyslexiaguideline.pdf>

- Definition of dyslexia
- Neuroscience of dyslexia and language learning disability
- Characteristics of students with dyslexia
- Socioemotional factors
- Dyslexia in English Learners
- Preparation for Educators
- Screening and Assessment
- Special Education and 504
- Effective instructional approaches
- Assistive technology
- Assessment tools

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CDE Guidelines

- **"Notice** The guidance in *California Dyslexia Guidelines* is not binding on local educational agencies or other entities. Except for the statutes, regulations, and court decisions that are referenced herein, the document is exemplary, and compliance with it is not mandatory. (See *Education Code* Section 33308.5.) "
- Provide good resources for parents and educators on each chapter

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DEFINITIONS OF DYSLEXIA

CDE
21st Century Definition of Dyslexia

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- **CDE Guidelines**
- **"School psychologists and school counselors.** Regarding students with dyslexia and other learning challenges, the role of school psychologists and school counselors is a critical yet often unrecognized one. Wilson and Colmar (2008) suggest that school counselors are important professionals in advising students with dyslexia who exhibit poor self-esteem, behavior challenges, and a lack of interest in school. They also state that school counselors and school psychologists are often unaware of the research-based practice for reading intervention and, consequently, are not prepared to fully understand the challenges experienced by individual students who are struggling to learn to read. Wilson and Colmar (2008) recommend that school counselors learn about the elements of phonological and phonemic awareness and phonics in addition to the socioemotional needs of these students." p.39
- **CASP Response Letter Suggested Language**
- As part of a multidisciplinary team that conducts comprehensive assessment of students suspected of reading disorders and dyslexia, School Psychologists have unique training in understanding and diagnosing processing disorders including phonological processing, neuropsychological processes related to reading such as rapid naming, knowledge of effective screening and assessment processes, and understanding patterns of strengths and weaknesses in learning. School Psychologists review and consider a student's history of learning and areas of difficulty to help teachers and specialists effectively use response to instruction and intervention to address reading problems early in the student's education, and assist in collecting and monitoring data on student progress. School psychologists are knowledgeable regarding screening tools, assessment methods, effective class-wide and individual interventions, and can assist schools in selecting evidence-based interventions for specific reading difficulties (VanderHayden and Burns, 2017). School Psychologists are essential members of the diagnostic assessment process for identifying students with dyslexia and reading disorders."

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What is Dyslexia?

International Dyslexia Association, National Institute of Child Health and Human Development

One of most commonly accepted definitions:

"Dyslexia is 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."

- Used in CDE Guidelines
 - Also includes "dyslexia may be understood as one type of a specific learning disability....."

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CASP Position Paper: Dyslexia and Assembly Bill 1369

- At www.casponline - go to publications tab at bottom

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What Is Dyslexia?

DSM-5:

Specific learning disorder is a neurodevelopmental disorder with a biological origin that is the basis for abnormalities at a cognitive level that are associated with the behavioral signs of the disorder. The biological origin includes an interaction of genetic, epigenetic, and environmental factors, which affect the brain's ability to perceive or process verbal or nonverbal information efficiently and accurately.

- With impairment in reading 315.00 (F81.0):
 - Word reading accuracy
 - Reading rate or fluency
- With impairment in written expression 315.2 (F81.81):
 - Spelling accuracy

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American Psychiatric Association (2013, pp. 67-68)

What Is Dyslexia?

Cassidy Mikulski Resolution

....1) defined as an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader; and (2) due to a difficulty in getting to the individual sounds of spoken language, which affects the ability of an individual to speak, read, spell, and often, learn a language;

CDE Guidelines

- "...unexpected difficulty in reading for an individual who has the intelligence to be a much better reader...."
- "...is a paradox; an individual with dyslexia may have weakness in decoding ...and strengths in higher-level cognitive functions...These strengths reflect the 'Sea of Strengths Model of Dyslexia' (Shaywitz, 2003)"
- "...support the Individuals with Disabilities Education Act (IDEA) 2004 criteria that identification of individuals with dyslexia does not require a discrepancy between reading and other cognitive abilities, such as IQ"

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CASP Position Paper

- CASP acknowledges the importance of addressing the needs of students with dyslexia. The consequences of reading failure are significant: children who are poor readers in third grade are four times less likely to complete high school on time than proficient fourth grade readers (Hernandez, 2012); children with poor reading in first grade are 72% less likely to attain higher education than their proficient reading peers (McLaughlin, Speirs, Shennassa, 2012). Early intervention is critical to addressing the needs of these students, as it is virtually impossible to "catch up" if intervention is not provided within the early years (Catts, Hogan & Fey, 2003). As school psychologists, we are aware of the educational toll of poor reading as reading problems constitute 80% of all special education referrals (Lyon et. al, 2001).

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What Is Dyslexia?

- Language Learning Disability -
- CDE - One type of language learning disability
 - Difficulties with the phonology aspect of language
- "Students with language disorder and specific learning disability may also be referred to as students with a language-learning disability"
- "Dyslexia involves a specific deficit in single-word decoding that is based on a weakness in the phonological aspect of language and has only a secondary impact on reading comprehension which distinguishes it from other types of reading disabilities."

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How does dyslexia affect kids?

- Learning to read is associated with positive adult outcomes
- 1/3 of students with LD have been retained at least one year (ld.org)
- Around 40% of adjudicated youth are reading more than two years below grade level
- Early identification and treatment of reading disabilities is essential.
 - "Matthew effect"
 - Reduces at-risk readers from approximately 20% to 6%
 - Upside to dyslexia?

CDE
Students with dyslexia face social and emotional challenges in addition to academic challenges (p. 24)

Footman (2003); Frieden (2004); Mellard & Woods (2007); O'Brien et al. (2007)

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SOCIAL EMOTIONAL/LIFE OUTCOME IMPACT

CDE Social Emotional Aspects of
Dyslexia

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CDE Guidelines:

Dyslexia "can have adverse effects on students' psychological well-being" p. 24

■ Anxiety	■ Focus on strengths
■ Depression	■ Build resiliency
■ Poor self-concept	■ Promote positive teacher-student relationships
■ Low self-esteem	■ Resiliency can counter effects of dyslexia
■ Parental stress	


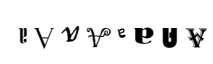
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LEARNING TO READ

CDE:
Preparation for Educators

Basic Assumptions

- Our brains are wired for speech – it is a biological specialization
 - *Direct instruction is not needed*
- Reading requires explicit instruction – no brain specialization
- Reading integrates multiple systems
 - *Visual system*
 - *Phonology*
 - *Working memory*
 - *Language*

Learning To Read

CDE Guidelines
IDA Knowledge and Practice Standards
for Teachers of Reading

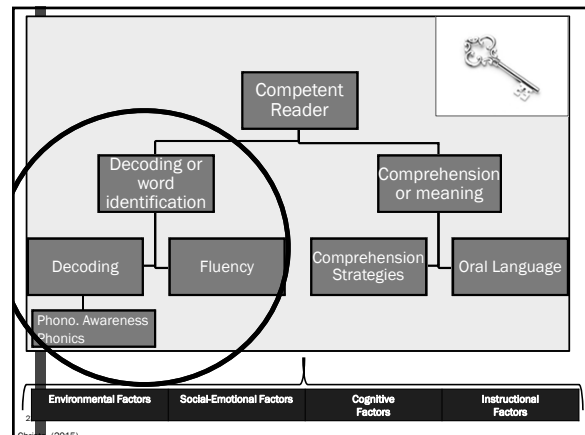
Understand the role of:

- Oral Language
- Phonological skill
- Word recognition
- Spelling
- Reading Fluency
- Reading Comprehension
- Written Expression


Language Processing Requirements

- Phonological Processing **The sound**
- Orthographic Processing **The look**
- Semantic Processing **The meaning**
- Syntactic Processing **The sentence**
- Discourse Processing **The text**


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Basic Assumptions



- Simple model of reading (Turner and Gough)



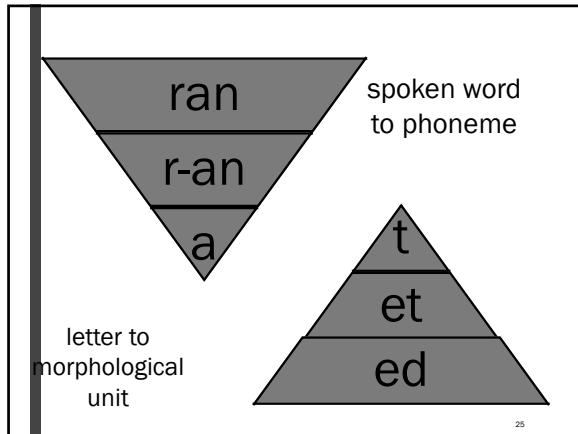
- Competent reading rests on the development of basic skills
 - *The "hands and feet of genius"*
- Multiple components of reading must be taught in a systematic, explicit manner that also immerses children in language and text

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Acquiring The Alphabetic Principle

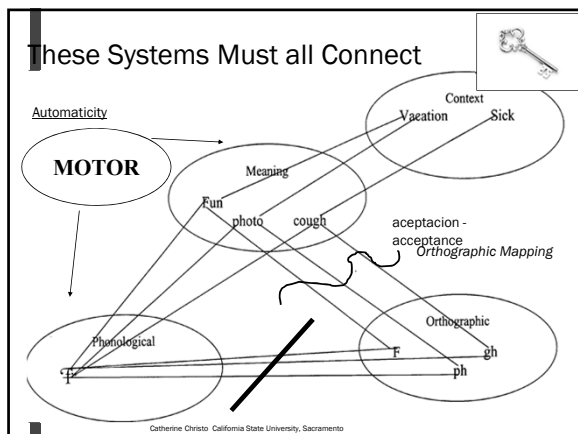
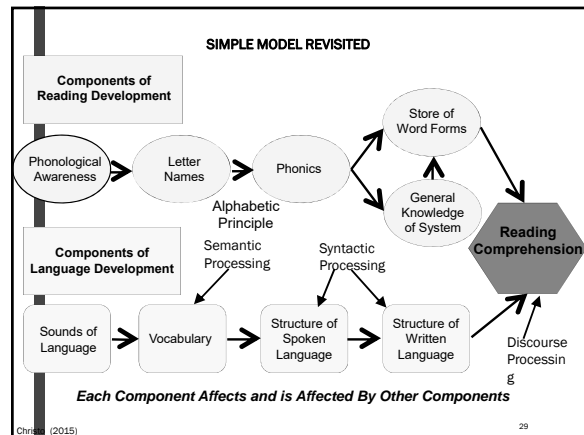
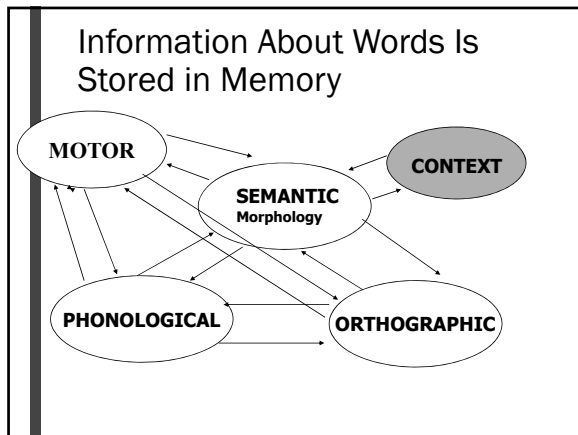
- Alphabetic Principle
- Children must learn how visual information is linked to speech – the words and sounds they know
- *"The first steps in becoming literate, therefore, require acquisition of the system for mapping between print and sound" – (Ziegler and Goswami, 2006)*
- Learn about word boundaries
- Develop understanding that words have parts (phonological awareness)
- Develop awareness about individual sounds (phonemic awareness)
- Link sounds to print

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Automatic Readers:

- Develop generalized knowledge of the orthographic system
 - Develop word knowledge in tandem with spelling knowledge
 - Are aware of multi-letter units
 - Are aware of syllables and orthographic conventions
- Have reduced memory load while reading- **critical to comprehension**
- Requires
 - Development of internal, mental representations of words
 - Representations have meaning, sound and letter information (semantic, phonological, orthographic)
 - <https://www.youtube.com/watch?v=oD1aMr8WzFk>



Differences in Early Experiences

- From the Beginning
 - Hear the language
 - Understand the concept of symbol
 - Beginning phonological awareness
 - Print exposure - build orthographic knowledge
 - Story structure
 - In some homes children will have had about 25 hours of storybook experience by 1st grade (Teale, 2015) - in others thousands of hours
 - From 0 to 200+ books in the home
 - 32 million less words heard by age 5
 - Producing half as many words at age 3
 - Vocabulary deficits at school entry **predict later reading**

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*Socioeconomic status and maternal education were significantly correlated with the level of phonemic awareness of the child...correlations stronger than those of race or ethnicity" p. 27

Bilingual Environments

- "Dyslexia affects people from different cultural, ethnic, and socioeconomic backgrounds nearly equally" (CDE)
- English learners are identified as having dyslexia later than their peers.
- Expected progress depends on prior schooling and vocabulary.
- Concepts learned well in one language can be transferred to another
- Knowledge of phonemes may be absent for English Learners
 - Training helps
 - Children with no phonological problems catch up with their peers in 1 to 2 years
- National Literacy Panel on Language Minority Children
 - Profiles of both groups with reading problems are very similar

Phonological Awareness

Consider critical area for assessment; causal link to reading problems

- **Phonological Core Deficit**
 - Perception, interpretation, recall and production of language at the level of the speech sound system (phonology)
 - Necessary but not sufficient for learning to read
 - Strongly linked to decoding problems
 - Linked to reading problems in multiple languages
- Phonological processing is an unnatural act.
 - Hard wired for understanding and production of speech
 - In some ways this makes reading more difficult

Not all students with reading problems will show deficits in phonological processing

Good Readers:

- Have a wealth of information about how speech is represented in print.
 - They use this knowledge to generalize to new words
 - They use this knowledge for both decoding and encoding
- Have adequate language skills: vocabulary, syntax, phonology.
- Read relatively effortlessly so that they can devote their mental energies to content.
- Activate phonological code when reading.
- Recognize new printed words after 1-4 exposures
- Read up to five words + per second
- Read every word in order and visually process all letters in words.

Phonological Awareness → Phonemic Awareness

- Go from phonological awareness to phoneme awareness
 - Rhyming
 - Blending
 - Segmenting
 - Deletion
 - Manipulation

DIFFICULTIES IN LEARNING TO READ

CDE:
Characteristics of Students with Dyslexia

Rapid Naming

a n d o t u k l w c f p
b n x o w p e c k w d
s o g b h x e o g w u

- **Fast, Automatic Retrieval Processes**
- Differentiate dyslexic readers from average and other poor readers
- Are present in poor readers across languages
- Marker for quick access to phonological information
- Phonological process or different cognitive process
- May be more related to fluency
 - CDE
 - Deficits in phonological component of language.
 - "A strong predictor of dyslexia and early literacy acquisition..." p.49

Double Deficit

- Deficits in phonological processing and rapid naming
- Most impaired population
- Most at risk
- Differential effects on remediation and intervention
- Difficulties in building a “reading brain” (Berninger)
- Highlights need to link intervention to assessment and to differentiate interventions

(Wolf and Bowers, 1999)

Other Cognitive Processes

- Verbal working memory
 - Attend to differences in visual and verbal working memory
 - Phonological memory
- Verbal ability
 - “The ultimate goal of reading instruction is to help children acquire the knowledge and skills necessary to comprehend printed material at a level that is consistent with their general verbal ability or language comprehension skills”(Torgesen, 2002)
 - Conversely lack of reading may impact development of verbal ability
- Processing Speed
- Attention and Executive Function

Orthographic Processing/Learning

- Creation of word forms requires the linking of print to sounds and of “chunking” letters into units
- Adds unique variance to some basic reading skills
- Question of delay or disability ?
- Result or cause ?
- Associative memory?

CDE
 “Some students with dyslexia demonstrate average phonological processing abilities with deficits in orthographic processing..” p. 13

Other Cognitive Processes

- No link to spatial processing deficits
 - Some poor readers have problems with copying designs
- Question of relation to auditory processing
 - Not generalized auditory processing
 - Link to language processing not clear
- Temporal Processing
 - Difficulty tracking acoustic frequency changes occurring over time.
 - Questionable research to support

Retrieval of Visual – Phonological Links

- May also impact math – calculation
- Not just visual memory but the linking of visual-verbal
- Associative memory?

WRAML 2 Sound Symbol

Visual Processing: American Academy of Pediatrics (2009)

Numerous studies have shown that **children with dyslexia or related learning disabilities have the same visual function and ocular health as children without such conditions.** Specifically, subtle eye or visual problems, including visual perceptual disorders, refractive error, abnormal focusing, jerky eye movements, binocular dysfunction, and misaligned or crossed eyes, do not cause dyslexia. In summary, research has shown that most reading disabilities are not caused by altered visual function. Many children with reading disabilities enjoy playing video games, including handheld games, for prolonged periods. Playing video games requires concentration, visual perception, visual processing, eye movements, and eye-hand coordination. Convergence and accommodation are also required for handheld games. Thus, if visual deficits were a major cause of reading disabilities, children with such disabilities would reject this vision-intensive activity.

www.pediatrics.org/cgi/doi/10.1542/peds.2009-1445

American Association for Pediatric Ophthalmology and Strabismus

- Do "training glasses" work?
 - The scientific literature shows no experimental evidence of any benefits from a low-plus "training glasses".
- Does vision therapy improve learning disabilities and dyslexia?
 - Many scientific studies have demonstrated that ocular coordination, motility, and visual processing are normal in children with dyslexia. The scientific evidence does not support the use of eye exercises or behavioral/perceptual vision therapy in improving the long-term educational performance in children with learning disabilities.
- Why might a teacher recommend vision therapy?
 - When a teacher notices that a student has problems with writing or fluent oral reading he/she may believe that the child has a vision problem. A common misconception is that dyslexia is a problem of letter or word reversals. Reversals of letters or words, and mirror writing occur in normal early readers and writers. Children with dyslexia are not unusually prone to reversals. So, although they do occur, reversals of letters or words, or mirror writing is not included in the definition of dyslexia. Letter and word reversals and skipping words have been demonstrated to be a symptom, not a cause, of reading disorders and have been shown to result from linguistic deficiencies rather than visual or perceptual disorders. Children with dyslexia often lose their place while reading because they struggle to decode a letter or word combination and/or because of lack of comprehension, not because of a "tracking abnormality."

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Causes - Conclusions

- Causes likely to be additive/interactive
- Use a hypothesis testing approach (Pearson, 2016)
- Consider compensatory factors
- Some risk factors greater than others but individuals compensate with strengths in other areas.

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Heritability

- CDE: "It has long been known that dyslexia is heritable so it runs in families." p.
- Genetics
 - Heritability
 - About 40% of children who have parent or older sibling with dyslexia will have difficulty in learning to read. (Scarborough, 1999)
- Environment
 - Not completely heritable
 - Supports the notion of gene x environment interactions
 - A genetic predisposition to dyslexia can be exacerbated or mitigated by the environment

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Associated Conditions

CDE: "Dyslexia often occurs in combination with other handicapping conditions..." p.4

- Dysgraphia
- Reading Fluency problems
- Reading comprehension
- Math
- ADHD

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Neurobiological Structures

- Good readers use different parts of the brain than do dyslexic readers
 - Under activation of the back of the brain is a neural signature of dyslexia
 - Present in all languages
 - Present in gifted students with dyslexia reading at grade level
 - Present with and without discrepancy

CDE: Neural signatures for dyslexia

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SCREENING

CDE: Screening and Assessment
 "May include checklists, work samples, curriculum-based assessment tools and informal or formal standardized achievement tools" p. 43

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CASP Position Paper

- A district wide universal screening process specifically designed to measure reading skills is a key element to determining the needs of the students. The results from the universal screening should be analyzed for the purposes of informing and guiding instruction and intervention within schools. Universal screening can provide both student data (who needs intensive instruction and intervention) and instructional data (what needs to be taught, e.g. phonemic awareness, vocabulary).

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Screening

Shaywitz Dyslexia Screener
Ready to Learn (Fawcett, Nicolson, & Lee, 2004)
KTEA 3
WIAT 3
Test of Early Reading Ability (3rd ed.; Reid, Hresko, & Hammill, 2004)
Dynamic Indicators of Basic Early Literacy Skills (Good et al., 2003)
AIMSweb

- Kindergarten screening
 - Phonological awareness
 - Vocabulary
 - Letter naming
 - Naming speed tasks

CDE
Screening should be conducted by spring during kindergarten and continue each year...
p. 44

- "Children who enter school with good language skills (i.e., phonologic, semantic, and syntactic skills), knowledge about the alphabet, and no family history of dyslexia are likely going to be successful readers."

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Screening: Early Predictors

- Family history
 - Having a parent with dyslexia is a significant risk factor
 - 66% of 4 year olds identified as at risk for reading failure due to having a parent with dyslexia were significantly delayed in reading at 8 years of age
- Language skill development
 - Important to understanding the meaning of language (i.e., semantics and syntax)
 - Oral language
 - Vocabulary
- Speech skills development
 - Important to phonological processing and development of the alphabetic principle
 - Phonological processing

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Screening: Assessing Progress of Critical Skills (Good, Simmons, Kame'enui)

- Kindergarten
 - Phonological awareness (onset rhyme fluency, phonemic segmentation fluency)
 - Letter name fluency
 - Phonemic segmentation
- First Grade
 - Letter Name and Phonemic segment. continue
 - Alphabet principle (nonsense word fluency)
 - Accuracy and fluency with connected text (oral reading fluency)
- Second Grade
 - Accuracy and fluency with connected text (oral reading fluency)

Screening

- Letter knowledge
 - Strong preschool predictor of reading success.
 - May be facilitative of learning to read.
 - May also be a task that assesses:
 - cognitive processes (verbal memory)
 - predispositions (interest in books)
 - environmental factors (access to print)
 which are all important to reading.
- Otitis media (OM) (ear infections)
 - Conflicting results in studies examining the relationship between OM and later academic outcomes

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CDE: May Also Use Information About:

- Listening comprehension
- Oral expression
- Handwriting
- Written Expression
- RTI2/MTSS
 - Use process to identify students who need more intensive interventions and/or evaluation for special education
 - Tier 2
 - "Reasonable duration ((tier 2) would be four to eight weeks" p. 47
 - "Ideal ratio would be one to educator to five students"
 - 3 to 5 days per week in 20-40 minute sessions
 - Progress monitoring
 - Tier 3
 - One to three ratio
 - Four to eight weeks

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CDE Provides “Signs” of Dyslexia for Preschool through College

- Preschool
 - Language delays
 - Problems with rhyme, recognizing letters, book behaviors
- Kindergarten to First
 - Phonemic awareness
 - Lack of letter-sound knowledge
 - Reading errors not connected to letters on page
- Second to Third
 - Difficulty segmenting and decoding
 - Misspellings
 - Trouble with high frequency words
 - Difficulty with remembering facts, directions, planning,
 - Mispronunciation
- Fourth to Eighth
 - Reading to learn
 - History of reading difficulties
 - Difficulty with multisyllabic words and fluency
 - Difficulty with new vocabulary and foreign languages
 - Illegible handwriting
 - Difficulty with planning, organizing,
- High School to College
 - Slow pace much effort in reading
 - Imprecise language
 - Difficulty with remembering and pronouncing names
 - Fatigue when reading
 - Organizational issues

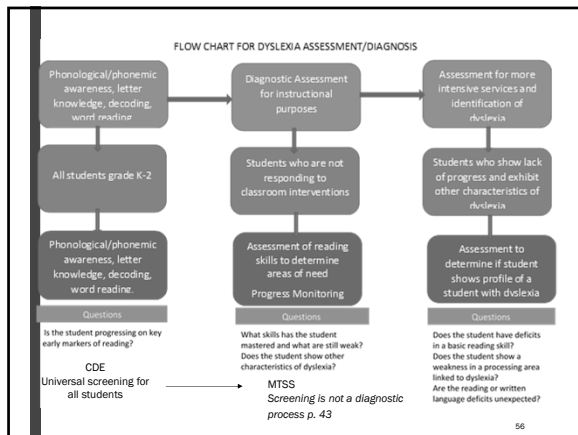
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Assessment

- Purposes of Assessment
 1. Non-categorical identification of dyslexia
 2. Special education eligibility decision

3. Inform interventions

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DSM -5 Diagnosis

- DSM-5 – possible 504 plan if not special education
 - *Specific Learning Disorder*
 - A. Difficulties learning and using academic skills....
 - B. The affected academic skills are substantially and quantifiably below ... chronological age, ... cause significant interference with academic ... performance ... as confirmed by individually administered standardized achievement measures and comprehensive clinical assessment.
 - C. The learning difficulties begin during school-age years ...
 - D. ... not better accounted for by intellectual disabilities, uncorrected vision or auditory acuity, other mental or neurological disorders, psychosocial adversity, lack of proficiency in the language of academic instruction, or in adequate educational instruction.

- 315.00 (F81.0) With impairment in reading

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ASSESSING FOR DYSLLEXIA

CDE:
Screening and Assessment
Assessment Tools

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CA Code of Regulations Eligibility Criteria : 3030 (b) 10)

(10) Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may have manifested itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, **dyslexia**, and developmental aphasia. The basic psychological processes include attention, visual processing, auditory processing, sensorimotor skills, phonological processing, cognitive abilities including association, conceptualization and expression.

(A) Specific learning disabilities do not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

CA Code 3030 (b) (10) (C) (1) to (2):

- Severe discrepancy option
- Lack of progress when using response to scientific, research based intervention
- Pattern of strengths and weaknesses determined by the group to be relevant to the identification of a specific learning disability

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BUT !

- "...identification of individuals with dyslexia does not require a discrepancy between reading and other cognitive abilities, such as IQ" p. 7
- Twice Exceptional
 - "...gifted children with discrepantly low reading ability, albeit within the average range and not necessarily classified as poor readers, may also be identified as having dyslexia and be qualified to receive services" p.7

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CDE Dyslexia Guidelines
p. 54-55:

- Difficulties with accurate and fluent word recognition and poor spelling and decoding abilities
- Deficits in the phonological component of language
- Difficulties that are unexpected in relation to other cognitive abilities
 - "School psychologists administer a variety of tests to determine the student's level of intellectual ability."
- Difficulties that are unexpected in relation to the provision of effective classroom instruction.

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Ruling Out Other Causes

- Lack of appropriate instruction
 - Stresses National Reading Panel criteria
- Exclusionary criteria
 - English learners
 - Socioeconomic status
- Motivational issues related to repeated failure
- Other processing functions
 - CDE offers Analysis of error and approach patterns Table 6.1 p. 29
 - What are patterns associated with language processing issues, memory, attention?
- "Important to rule out extrinsic factors" p. 32
 - RTI can be "serves to test a student's learning potential and helps inform parents and educators"

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CDE:
"When the concern may not be dyslexia" p. 26


Criteria


DSM 5	SLD	CDE Guidelines
<ul style="list-style-type: none"> ■ Not achieving ■ Below chronological age (7th %ile?) and significantly impact academics ■ Occurs/ed during school years ■ Not accounted for by other disabilities 	<ul style="list-style-type: none"> • Not achieving • Below ability or performance in other areas OR not responding • Processing disorder • Significantly impacts access to curriculum • Not accounted for by other disabilities 	<ul style="list-style-type: none"> ■ Difficulties with word reading, spelling, decoding ■ Deficits in phono. Awareness ■ Unexpected in relation to ability ■ Unexpected in relation to instruction

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CDE
Essential Components of reading writing and spoken language for screening and comprehensive assessment p. 49

TESTS TABLE - WHAT'S AVAILABLE?





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Assess Word Level Knowledge and Abilities

- Has student acquired alphabetic principle/sound-symbol correspondence?
- Is child developing automatic word recognition?
- Components
 - Accuracy
 - Rate
 - Reading
 - Spelling
- Both decoding and encoding
- Timed and untimed

"Dyslexia involves a specific difficulty in word and nonword decoding" p. 50

CDE
Difficulties with word recognition, spelling, decoding

Word Level Assessments

	Real	Nonsense
Decoding - Reading		
Timed	TOWRE 2 PAL II Achievement Tests (e.g. WIAT-II)	TOWRE 2 PAL II Achievement Tests (e.g. WIAT-II)
Untimed	Most achievement batteries	Most achievement batteries
Encoding - Spelling		
Timed	CBM	
Untimed	Spelling	Spelling of Sounds

Word Level Skills to Be Assessed

	Real Words	Nonsense Words
Decoding - Reading		
Timed	Automaticity of Word Retrieval	Automaticity of Decoding
Untimed	Lexicon	Phonics Knowledge
Encoding - Spelling		
Timed		
Untimed	Orthographic Knowledge Lexicon	Phonics Knowledge

TEXT LEVEL ASSESSMENTS: Fluency

- Is child developing automaticity/fluency?
- Does she read with prosody?
- Components
 - Accuracy
 - Rate
- Classroom sources
 - Embedded in curriculum
 - Levels (lexile)
 - District fluency tests
 - Informal reading inventory
 - Running records
- Tests
 - Gray Oral Reading Test-5 (GORT-5)
 - Reading achievement tests
 - Oral reading fluency measures
 - DIBELS
 - AIMSweb
 - EASY CBM
 - Intervention Central

CDE
"Many students with dyslexia have difficulty with reading fluency due to a number of factors.....rate aspect of reading may remain as difficulty" p. 50

Word Level Assessments

- Classroom
 - Embedded in curriculum
 - Spelling tests
 - Invented spelling
 - Writing
- Tests
 - Decoding tests
 - Measure knowledge of phonics
 - Use nonsense words
 - Achievement Tests
 - Real word reading accuracy
 - Isolated word reading
 - Achievement tests
 - Fluency
 - Test of Word Reading Efficiency (TOWRE 2)
 - Test of Silent Word Reading Efficiency
 - Achievement Tests
 - Encoding
 - Going from sounds to letters that represent them
 - WJIII Spelling of sounds
 - Spelling subtests
 - Look at spellings for both knowledge of phonics and orthographic knowledge (legal letter combinations)

CDE
"Spelling...impaired because spelling and reading have reciprocal relationship" p.51

A Disability??

TEXT LEVEL ASSESSMENTS: Comprehension

- Classroom sources
 - Curriculum
 - Lexiles
 - IRI
 - Running records
- Tests:
 - Most achievement batteries
 - Gray Oral Reading Test
 - Gray Silent Reading Test
 - Maze reading tests (CBM)
- Problems in assessing comprehension
 - Students with good background knowledge and language skills may do well on comprehension tests but not in school related reading
 - (Fletcher et al, 2007)
 - Refer back to passages
 - Differences in performance
 - E.g. WIAT vs. GORT

CDE
"Students with dyslexia may have difficulty in reading comprehension with strengths in listening comprehension" p. 50

Related Skills: Dysgraphia

- Dysgraphia is the term associated with specific learning disabilities in writing. It is used to capture both the physical act of writing and the quality of written expression. Features of learning disabilities in writing are often seen in individuals who struggle with dyslexia and dyscalculia, and will vary from person to person and at different ages and stages of development. Common characteristics include:
 - Tight awkward pencil grip and body position
 - tiring quickly while writing, and avoiding writing or drawing tasks
 - trouble forming letter shapes as well as inconsistent spacing between letters or words
 - difficulty writing or drawing on a line or within margins
 - trouble organizing thoughts on paper
 - trouble keeping track of thoughts already written down
 - difficulty with syntax structure and grammar
 - large gap between written ideas and understanding demonstrated through speech

CDE
"Handwriting causally related to quality of written expression" 52

Related Abilities: Verbal Ability

- Verbal ability
 - "The ultimate goal of reading instruction is to help children acquire the knowledge and skills necessary to comprehend printed material at a level that is consistent with their general verbal ability or language comprehension skills" (Torgesen, 2002)
 - Conversely lack of reading may impact development of verbal ability
- TESTS
 - Most cognitive batteries
 - Listening comprehension
 - Oral language assessments

CDE
Unexpected in relation to other cognitive abilities.

Measures for Dysgraphia

- PAL II
 - Alphabet Writing
 - Copying tasks
 - Finger Sense
- WIAT III
 - Alphabet Writing Fluency
- Tests of Handwriting Skills Revised

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Related Abilities: Oral Language

- Oral language clusters
 - WJIII
 - KABC II
- Language specific tests
 - CELF
 - Test of Early Language Development
 - Oral and Written Language Scales
- Vocabulary tests
 - PPVT
 - WISC: Vocabulary
 - DAS: Word Definition
 - KABC: Verbal Knowledge
 - WJ: Comprehension Knowledge

"The ultimate goal of reading instruction is to help children acquire the knowledge and skills necessary to comprehend printed material at a level that is consistent with their general verbal ability or language comprehension skills" (Torgesen, 2002)

Conversely lack of reading may impact development of verbal ability

Listening Comprehension
- Most achievement tests

CDE
"Some students with oral language deficits may also have dyslexia" p. 51

Morphological Awareness

■ Morphological awareness
Awareness of structure of words and ability to use that knowledge

CDE
"Difficulties not typical...some students do lack morphological awareness" p. 52

■ Tests

- Language assessments
- PAL II

Are They Related

Does It Fit	The boy ran _____	corner	corn
		builder	build
gluckness	gluckable	gluckly	

Sentence Structure

Glamping is mox.
Mox glamping is
Moxly is glamping

Find the True Fixes

painter disease
word reading
hear, hears, hearing

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Related Abilities: Phonological Processing

- Phonological processing tasks
 - Blending
 - Segmenting
 - Memory
 - Onset rhyme
- Classroom Information
 - Embedded in curriculum
 - BPST, APST
 - Invented Spelling
- Tests
 - TAPS 2
 - CTOPP 2
 - PAL II
 - PAT 2
 - FAR
 - DIBELS
 - NEPSY II
 - Other tests as part of larger batteries
- Informal measures
 - Yopp Phonemic Awareness tasks
 - PAST
 - Lindamood Auditory Conceptualization

CDE
"Difficulties...especially phonemic awareness is one of the best predictors of dyslexia" p.49

Rapid Naming

- The ability to quickly access verbal labels for visually presented material
- Pictures, letters, numbers, simple words
- Can also include switching

CDE
"A strong predictor of dyslexia and early literacy acquisition...less so than phonemic awareness". p.49

- CTOPP 2
 - Digit, Letter, Color, Object Naming
- NEPSY II
 - Speeded Naming
 - PAL II
 - RAN Words, Digits, Words and Digits
 - FAR
 - RAN, Irregular words, PA
 - KTEA 3
 - Naming Facility
 - DAS II
 - Rapid Naming
 - WISC V
 - Naming Facility

Verbal Memory

CDE
"Many students with dyslexia have difficulty with phonological memory" p.

Rote

- WISC V
- DAS 2
- WJIV
- WRAML 2
- Consider contextual versus non-contextual

Working Memory

- WISC V
- DAS 2
- WJIV
- WRAML 2
- PAL II
 - Letters
 - Sentences

Orthographic Awareness

- A less studied area
- Letter name knowledge
- Letter production
- Expressive coding
- Receptive coding
- Berninger's work in developing Process Assessment of the Learner (PALS-II) and in developing interventions
 - Orthographic choice
 - Alphabet writing
 - Receptive and expressive coding

CDE
"Orthographic processing that contribute to the ability to read words" p. 52

Processing Speed

- Processing speed
 - May affect ability to develop store of sight words
 - May affect reading fluency
 - Likely to see in other academic areas as well
- Difference from naming speed
- Most cognitive batteries have a processing speed composite
 - Important to look at the subtests that make up the composite
 - E.g. WISC V

Retrieval of Visual - Phonological Links

- May also impact math - calculation
- Not just visual memory but the linking of visual-verbal
- Associative memory?

WRAML 2 Sound Symbol

Other Areas

- Attention and Executive Function
 - Situational ADHD
 - Written Expression
 - CDE - no evidence that problems in written expression are a sign of dyslexia
 - May be linked to dysgraphia

Documenting Relevant Patterns

- WJIV – Assessment Bulletin #6
 - Use *Discrepancy and Variation* procedures to document differences
 - Compare Gf-Gc composite to reading and spelling
 - Compare learning in other areas to reading and spelling
 - Compare oral language to reading and spelling
 - WISC V – *Pearson Dyslexia Tool Kit*
 - Pairwise comparisons
 - Composite score differences

Index	Score	Composite Score	Difference	Critical Value	Strength or Weakness	Base Rate
VCI	118	103.6	14.4	10.82	S	<=10%
VBI	114	103.6	10.4	10.40	S	<=15%
PSI	97	103.6	-6.6	9.96	W	<=25%
WMI	100	103.6	-3.6	9.96	W	>25%
PSI	89	103.6	-14.6	11.62	W	<=15%

Differences Between Composite Standard Scores Comparison score must be derived from the index scores (3.4.5).

Comparison	Difference	Critical Value (Significance Level: .05)	Significant? (Y/N)	Base Rate
Oral Language vs. Basic Reading	23	11.94	Y	<=25%
Oral Language vs. Written Expression	25	14.07	Y	<=10%
Basic Reading vs. Written Expression	-7	10.13	N	>10%

WIAT – KTEA Academic Tests

- WIAT III
 - K-1
 - Early Reading Skills
 - Spelling
 - 2-12
 - Oral reading fluency
 - Pseudoword Decoding
 - Spelling
 - Word Reading
 - Reading Comprehension
 - Composites
 - Basic Reading
 - Reading Comprehension and Fluency
- KTEA 3
 - Phonological Processing
 - Reading Comprehension
 - Letter and Word Recognition
 - Nonsense Word Decoding
 - Spelling

WJIV Reading Skills Profile

- Basic Reading Skills
- Reading Fluency
- Reading Rate
- Spelling
- Phoneme Grapheme Knowledge

WISC V Cognitive Areas

- Auditory Working Memory
 - Digit Span
 - Letter Number Sequencing
- Naming Speed Index
 - Naming Speed Literacy
 - Naming Speed Quantity
- Verbal Comprehension Index
 - Similarities
 - Vocabulary
- Processing Speed Index
 - Coding
 - Symbol Search
- Storage and Retrieval Index
 - Naming Speed Index
 - Symbol Translation Index
- Symbol Translation Index
 - Immediate Symbol Translation
 - Delayed Symbol Translation
 - Recognition Symbol Translation

WJIV Cognitive Areas

- Phonological Awareness
 - Auditory processing
 - Phonetic Coding
- Orthographic Processing
 - Letter pattern
 - Number pattern
 - Spelling
 - Word Attack
 - Spelling of sounds
- Memory
 - Auditory Memory Span
 - Short term Working Memory
- Rapid Naming
 - Speed of Lexical Access
- Processing Speed
 - Cognitive Processing Index
 - Perceptual Speed

CDE: Consider Error and Approach Patterns (Table 6.1)

- Error patterns related to processing of content more than basic reading skills (e.g.)
 - weak recall
 - understanding of content but poor inferential understanding
 - understanding of narrative but weakness with expository
 - weak comprehension despite good decoding
- Processing areas considered
 - Language
 - Memory
 - Attention and depth of processing

This table is potentially useful when identifying students whose reading difficulties are not dyslexia. Using these descriptors could be explanatory to parents and teachers.

English Learners

- Consider English language proficiency
 - Use norm referenced tests and informal measures as appropriate
 - ED Code 313.1
 - Long term English Learner
 - At-risk of becoming long term English learner
- Prior schooling
 - Newly arrived with adequate or limited schooling
- Level of development in primary language
- Developmental history
- Vocabulary skills in both languages
- Response to instruction

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MAURIE

Maurie is a 5th grade student who has attended this school since 1st grade. Maurie has no significant health issues. Vision and hearing normal. Diagnosed with ADHD (Inattentive type) and has taken Ritalin since 2011. Parents recently discontinued because of significant side effects. One parent reports minor problems learning to read but lingering problems with spelling.

Maurie engaged in pre-reading behaviors such as learning letter names, naming shapes and colors, and understanding the purpose and handling of books. He did not learn common nursery rhymes, or the ABC's. During kindergarten and first grade, he displayed limited phonemic awareness skills, did not enjoy reading, and did not learn letter/sound combinations. He has displayed significant reading related problems such as pronouncing long words, imprecise language, lack of fluent reading, stronger comprehension than word reading, and finishing homework. Comprehends much better when read to. Active outside of school with sports, pets and friends.

Maurie began receiving special education services in 2nd grade as a student with a SLD with deficits in attention and visual processing. Interventions focused primarily on fluency. Currently Maurie has goals in written language and reading fluency. Services have been provided through small group push in support, note taking support, preferential seating and shortened assignments. Teacher reports positive on work habits, occasional anxiety and lack of work completion.

Primary school based interventions have focused on increasing reading fluency and on written language. Also provided with visual tracking training and Lexia outside of school. No noticeable improvement. Most recent IEP parents were told that Maurie just works slow and needs could be addressed through accommodations rather than special education.

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A Few Additional Bits

- Deficits in spelling
- Deficits in fluency
- Cannot delay assessment due to RTI process
- List numerous tests but Universal Screener only Shaywitz
 - CDE does not endorse
 - Not considered comprehensive - a sample

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INTERVENTION

English Spelling

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CASES


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Now what???

"California Education Code Section 56335(a) defines educational services for students with dyslexia as follows: "educational services" means an evidence-based, multisensory, direct, explicit, structured, and sequential approach to instructing pupils who have dyslexia." p.63

- How do you know if what was tried was evidence based?
- How do you determine what needs to be addressed in intervention?
- How do you help teams determine an evidence based practice or program?

THE BUCK DOES NOT STOP (OR BEGIN) WITH ELIGIBILITY DECISION!!



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Target Intervention by Assessing All Levels of Reading

- Underlying processes
- Word level processes
- Text processes
- Oral language
- Production
- Assess accuracy and fluency
- Assess multiple language systems

Continuum of Services

Student's NEEDS determine level of service

Reading Component	Current Functioning	Relevant Data
Maurie Reading Skills		
Phonological Decoding (reading words by sounding out)	Low for accuracy and fluency	KTEA Nonsense Word Decoding – 69 Decoding Fluency – 77
Phonological Encoding (spelling words by sounding out)		
Word Identification (reading isolated words)	Below average for both accuracy and fluency	KTEA 3 Letter Word 79, Word Recognition Fluency - 76
Text Reading Fluency	Accuracy is average but rate is low Note difference from isolated words Fluency below average on KTEA 3	GORT 5 Accuracy = 9 rate = 5 KTEA 3 - 83
Text Reading Comprehension	Average	GORT 5 – 25 th %ile KTEA 3 - 93
Reading Related Cognitive Processes		
Orthographic Processing: (ability to store letter patterns in words)	Orthographic spelling very low Letter writing automaticity slow	PAL II
Phonological Processing	Below average	CTOPP 2 – 84
Naming Speed	Below average	CTOPP 2 – 76 KTEA 3 - 74
Phonological Memory: remembering information by “sound”	Low	CTOPP 2 70
Verbal Memory	WISC 5 WM low CTOPP	
Associative Memory		
Verbal Ability	Average	WISC V
Verbal Spatial Skills	Average	WISC V
Visual Memory	Below average	WISC V

CASP Position Paper

First, IDEA stresses the importance of research-based interventions and highly qualified teachers.

Second, because children who qualify for special education need to have every educational minute count, it is critical that the intervention used be appropriate for the identified needs of the child

Third, when choosing an intervention, it is important to consider the student characteristics as well as the setting in which the intervention will be provided.

Fourth, there are certain agreed-upon characteristics that are important to interventions for students with dyslexia. The National Reading Panel (2000) listed five components of reading instruction that are relevant to both general education instruction and intervention: phonemic awareness, phonics, fluency, vocabulary and text comprehension. Interventions for students with dyslexia should be structured, systematic, explicit and involve diagnostic teaching. Students with dyslexia need to be taught using an intervention that has a clear sequence of skills, is explicit (i.e. students are directly taught the skills they need to know) assures mastery of basic skills such as phonemic awareness and monitors progress regularly.

Fifth, these students need to be taught by a teacher trained in the intervention who understands reading development, how to meet the needs of unique learners and can provide for diagnostic teaching

CDE: Consider Error and Approach Patterns (Table 6.1)

- Error patterns related to processing of content more than basic reading skills (e.g.)
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 - understanding of content but poor inferential understanding
 - understanding of narrative but weakness with expository
 - weak comprehension despite good decoding
- Processing areas considered
 - Language
 - Memory
 - Attention and depth of processing

This table is potentially useful when identifying students whose reading difficulties are not dyslexia. Using these descriptors could be explanatory to parents and teachers.

CDE

- “Students with dyslexia are ‘general education students’ first, can be educated in general education classrooms and benefit from a wide variety of supports.....Students with dyslexia sometimes require special education”
- Need evidence based approach to instruction
- Accommodations and assistive technology
- “The California statute also states, “If a pupil who exhibits the characteristics of dyslexia or another related reading dysfunction is not found to be eligible for special education and related services pursuant to subdivision (a), the pupil’s instructional program shall be provided in the regular education program” (Education Code Section 56337.5” p. 63

Two Types of Interventions

<p>Comprehensive Programs</p> <ul style="list-style-type: none"> ■ Address all aspects of reading ■ Generally provided in specialized setting ■ Include elements identified by <ul style="list-style-type: none"> - National Reading Panel - International Dyslexia Association ■ Have evidence of effectiveness 	<p>Targeted Interventions</p> <ul style="list-style-type: none"> ■ Address specific areas of need <ul style="list-style-type: none"> - Phonological awareness - Phonics - Fluency - Comprehension ■ May be provided in specialized setting or general education ■ Have evidence of effectiveness
--	---

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Who Provides Interventions?

- CDE Guidelines
- General Education Teachers
 - IDA Knowledge and Practice Standards
- Credentialed reading specialists
- Speech and Language Pathologists
 - "...supportive team members in prevention, identification, assessment and intervention of students with reading disabilities including dyslexia..." p. 40
- Special Education Teachers
- Assistive technology specialists with expertise in LD
- School psychologists and counselors
- Paraprofessionals
 - Little data but potential if they receive extensive training p. 40

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ESSA Levels of Evidence

- Strong
 - Randomized study - well designed, well implemented experimental study
 - Significant effect
- Moderate
 - Quasi-experimental study - no randomization
 - Significant effect
- Promising
 - Correlational study considering pre-test performance with statistical controls
 - Significant effect
- Research based
 - Rationale based on high quality research findings
 - Ongoing evaluation

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National Reading Panel (2000)

- Phonological Awareness
- Phonics
- Fluency
- Vocabulary
- Comprehension

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Useful Websites

- [Best Evidence Encyclopedia \(BEE\) \(Center for Data-Driven Reform in Education at Johns Hopkins University\)](#)
- [National Center on Intensive Intervention \(NCII\)](#)
- [What Works Clearinghouse \(WWC\)](#)
- [International Dyslexia Association](#)
- [Evidence Based Network](#)
- [IDA Matrix](#)
<https://app.box.com/s/ume7t8rrbgpb7h4z2ihq57y4xbyxt8jt>
- [Checklist](#)

[Berninger Checklist](#)

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International Dyslexia Association

Most of these are just good instructional practice

These are means to an end not the end in themselves

- Systematic and cumulative
- Simultaneous and multi-sensory
- Direct and explicit instruction
- Diagnostic teaching
- Synthetic and analytic instruction
- Comprehensive and inclusive

- Phonology
- Sound-symbol instruction (both ways)
- Syllable instruction
- Morphology
- Syntax
- Semantics
- [Intervention Checklist](#)

Structured literacy encouraged in CDE Guidelines

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Phonology: Developing Phoneme Awareness (NRP and IDA)

- Word boundaries
- Beginning – ending sounds
 - Rhyme
 - Word play
- Syllable awareness
- Individual phonemes
 - Blend
 - Segment
 - Delete
 - Substitute
- Essential to learning to read
- Basic understanding prior to phonics
- Reciprocal relationship with reading development
- Synthetic (blending) and analytic (segmenting)

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Morphology and Word Origin (NRP and IDA)

- Suffixes
- Prefixes
- Inflected endings
- Roots and base words
- Helpful in decoding and encoding
- Provide semantic (meaning) link for orthography

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Phonics: Sound-Symbol Instruction (NRP and IDA)

- Both symbol to sound (decoding) and sound to symbol (encoding)
- Use multiple coding systems
 - Language by ear
 - Language by eye
 - Language by mouth
 - Language by hand
- Start with easiest elements and build upon those
 - Graphemes in visual presentation linking sight, sound, feel
 - Using key words
 - Decoding c-v-c words
 - Encoding
- Graphemes can be multi-letter units

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Syntax, Semantics, Discourse, Uses (NRP and IDA)

- Literacy programs should include instruction in the rules for putting words together into sentences
- Vocabulary development is critical to the development of reading
- Teach comprehension strategies
- Embed instruction in meaningful uses of language

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Syllable Instruction (Explicit in IDA)

- Teach students six types of syllables
 - Open - to-tal
 - Closed - pen - cil
 - Vowel-consonant-e - take
 - Vowel-I - e - table
 - R- controlled - warm
 - Vowel team- boat
- Important for spelling
- Link to ear, mouth , hand, eye

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What About Your Current Intervention?

Intervention checklist

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Group Size and Composition

- Same ability grouping
- Small groups within classrooms
- Small groups equal to or better than one on one
- Up to three to four students
- CDE: *"The ideal educator to student ratio is one to three."* p. 47

Examples of Accommodations

- Extra time
- Oral reading of directions
- Books on tape
- Alternate location for testing
- Note taking support
- Accommodations to assignments that don't impact concepts addressed (reduced amount, dictating answers)

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Sample Interventions

- Focus on Phonological Awareness and Phonics
 - *Phono-Graphix*
 - *Barton Reading and Spelling*
 - *Road to the Code*
- Focus on Phonological Awareness, Phonics and Fluency
 - *Great Leaps*
 - *System 44*
- Focus on Phonological Awareness, Phonics, Writing
 - *Lindamood Phoneme Sequencing Program*
 - *Spell, Read P.A.T.*
 - *Read Write Type*
 - *REWARDS - also vocabulary*
- Focus on most aspects of reading
 - *Wilson Reading System (& other Wilson programs)*
 - *Sonday Systems*
 - *RAVE-O*
 - *Language!*
 - *Corrective Reading*
 - *Reading Mastery*

Assistive Technologies

- Audiobooks
- Text-to-Speech and Speech-to-Text
- Smart Pens
- Spell checkers and word prediction software
- Technology needs to be matched to needs and abilities of student
- Sufficient training needs to be built in
- Identify in IEP or 504 Plan
- CDE provides numerous useful resources p. 80

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Upper Grade Interventions

- Often lack intensity
- Little direct instruction or guided practice in phonics
- Lack of comprehension strategy instruction
- Persistent fluency deficits
- Level of entry word reading predicts later outcome
- Teach phonemic decoding explicitly
- Provide opportunities for supervised practice
- Intensive
- Small group
- Brain studies show intervention effect on brain function
- Teach morphology as need more than phonics at upper grades to read words