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# Dyslexia:
## An Introduction

Developed by the
CSU Center for the Advancement of Reading and Writing
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# Why This Topic?

Dyslexia is receiving increasing attention in California, the nation, and beyond, and scientific knowledge about dyslexia is expanding. All teachers should be aware of current activity and research regarding serving students with dyslexia. All teachers have a role in serving students with dyslexia.

This presentation will be most valuable if viewers explore the links provided throughout.

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# Current Activity: AB 1369

California Assembly Bill 1369 (2015; link below) adds two sections to California's *Education Code*, both of which are relevant to serving students with dyslexia. The next two slides describe these additions.

http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1369

# Current Activity: AB 1369

Given the phonological basis of dyslexia, AB 1369 required the addition of Section 56334 to CA's *Education Code*. It states that "phonological processing" shall be included in the description of "basic psychological processes" identified in the definition of specific learning disabilities in Section 3030 of Title 5 of CA's *Education Code* to read as follows:

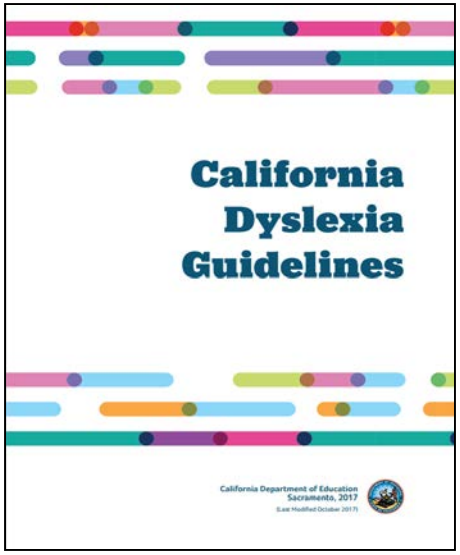
"The basic psychological processes include attention, visual processing, auditory processing, **phonological processing**, sensory-motor skills, cognitive abilities including association, conceptualization and expression." (bolding added)

# Current Activity: AB 1369

AB 1369 also added Section 56335 to CA's *Education Code*. It requires the California Superintendent of Public Instruction "to 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...for use no later than the beginning of the 2017-18 academic year."

# Current Activity: Guidelines

The development of guidelines was undertaken by a Dyslexia Guidelines Work Group under the leadership of the California Department of Education. This presentation draws on information from the resulting document published in 2017 (hereafter, *Guidelines*). Readers are encouraged to view the entire document here: https://www.cde.ca.gov/sp/se/ac/documents/cadyslexiaguidelines.pdf



# Defining Dyslexia

The most widely used definition of dyslexia follows:

"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."

(IDA 2002)

Source: International Dyslexia Association (IDA). (2002). *Definition of Dyslexia*.

# Defining Dyslexia

The definition is repeated here with key concepts in bold:

"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."

(IDA 2002, bolding added)

Source: International Dyslexia Association (IDA). (2002). *Definition of Dyslexia*.

# Defining Dyslexia

Let's examine the bolded text in the definition of dyslexia presented on slide 9:

**specific learning disability**—a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written… (See p. 3 of the *Guidelines*.) Note: In accordance with AB 1369 "phonological processing" was added to the list of basic psychological processes identified in CA's *Education Code*. (See slide 5.)

# Defining Dyslexia

**neurobiological**—having to do with the anatomy and physiology of the nervous system (in this case, the brain); in other words, the reading difficulty is not a result of low intelligence, laziness, lack of motivation, or poor instruction—it has a neurobiological basis (See p. 6 of the *Guidelines* for an image of differences in activity in key brain structures.)

**difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities**—the most widely reported characteristics of dyslexia are problems at the word level, that is accurately and readily recognizing or decoding words and encoding them (i.e., writing them accurately)

# Defining Dyslexia

**phonological**—having to do with the speech sound system of a language (See slides 17 & 18 for details.)

**unexpected**—no cognitive or external circumstances (e.g., limited exposure to reading instruction due to extensive absences from school) explain the difficulties the student is experiencing

**secondary consequences**—outcomes (in this case, difficulties) that are not a direct result of the occurrence (in this case, dyslexia) but that are cascading effects (e.g., dyslexia causes difficulty with decoding, which in turn results in poor comprehension, a secondary consequence of dyslexia)

# Understanding Dyslexia

- Dyslexia affects people from different cultural, ethnic, and socioeconomic backgrounds nearly equally.
- Dyslexia is heritable; it runs in families.
- Dyslexia often occurs in combination with other conditions (e.g., ADHD, oral language impairment).
- Dyslexia exists on a continuum from mild to severe.
- Students with dyslexia represent a subgroup of students who experience difficulties in reading and written expression. In other words, ***not all reading and written expression difficulties are due to dyslexia***.

Sources:
CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE.
DyslexiaHelp. (2018). *Debunking the Myths about Dyslexia*.
Regents of the University of Michigan.

# Understanding Dyslexia

What do you think? Are the following statements myths or based on evidence?

- Dyslexia is rare.
- More boys than girls have dyslexia.
- Dyslexia cannot be diagnosed until third grade.

Source: DyslexiaHelp. (2018). *Debunking the Myths about Dyslexia*. Regents of the University of Michigan.

# Understanding Dyslexia

The answer: *All are myths*.

- Myth: Dyslexia is rare.

  In fact, research indicates that from 5%-17% of the U.S. population has dyslexia.

- Myth: More boys than girls have dyslexia.

  In fact, the number of boys and girls having dyslexia is nearly identical. Boys are identified more often, however.

Source: DyslexiaHelp. (2018). *Debunking the Myths about Dyslexia*. Regents of the University of Michigan.

# Understanding Dyslexia

- Myth: Dyslexia cannot be diagnosed until third grade.

  In fact, some indicators of dyslexia can be identified as early as age 5. The earlier the diagnosis, the more quickly help can be provided, which can minimize socioemotional impacts.

For information about these and more myths, go to this website:

http://dyslexiahelp.umich.edu/dyslexics/learn-about-dyslexia/what-is-dyslexia/debunking-common-myths-about-dyslexia

Source: DyslexiaHelp. (2018). *Debunking the Myths about Dyslexia*. Regents of the University of Michigan.

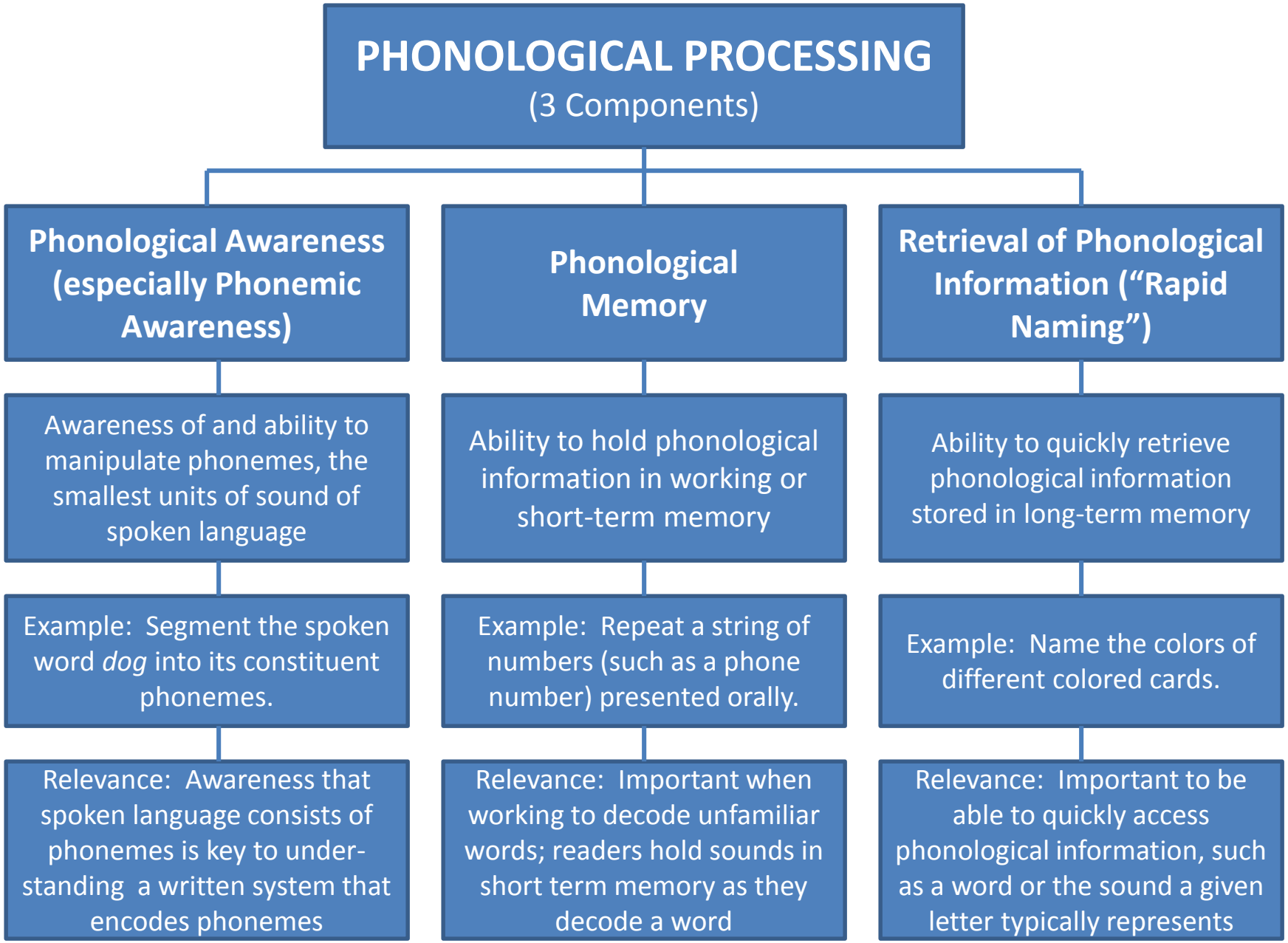
# Understanding Dyslexia

- The majority of individuals with dyslexia have significant difficulty in one or more of the three aspects of **phonological processing** of language:
  - phonological memory
  - phonological awareness (especially phonemic awareness)
  - retrieval of phonological information (i.e., speed of naming)

  (See next slide.)

- Some individuals with dyslexia have difficulty in **orthographic processing**.

  (See slide 19.)




Graphic developed by CAR/W. See pages 10-13 of the *Guidelines* for a related discussion.

# Orthographic Processing

The *Guidelines* (p. 52) define orthographic processing as follows:

Orthography is the writing system of a language (i.e., spelling) and includes conventions, punctuation, and capitalization. Knowledge of orthography is stored in memory in the form of rules and representations of words or parts of words—and used to read and spell words.

Orthographic processing contributes to the ability to read words.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE.

# Indicators of Dyslexia

All teachers should be familiar with behaviors that may indicate dyslexia, organized by age group, at this site:

http://dyslexiahelp.umich.edu/parents/learn-about-dyslexia/is-my-child-dyslexic/clues-to-dyslexia

See also pages 14-22 in the *Guidelines*:
https://www.cde.ca.gov/sp/se/ac/documents/cadyslexiaguidelines.pdf

The next slide presents a table with two examples of many possible indicators by age group.

Sources:
CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE.
DyslexiaHelp. (2018). *Debunking the Myths about Dyslexia*. Regents of the University of Michigan.

# Indicators of Dyslexia

| Age Group | Possible Indicators (Examples) |
|---|---|
| Preschool | • Difficulty naming things quickly or automatically<br>• Difficulty learning nursery rhymes |
| Kindergarten-Grade 1 | • Inability to create a rhyme for a simple one-syllable word like "hot" or "cat"<br>• Inability to segment spoken words into their constituent sounds |
| Grades 2-3 | • Consistent reading and spelling errors<br>• Difficulty telling a story in sequential order |
| Grades 4-8 | • Frequent errors in reading common sight words (e.g., "where," "there," "what," "then")<br>• Difficulty learning a foreign language |
| High School-College | • A tendency to read with great effort and at a slow pace<br>• A tendency to pause or hesitate often when speaking and the use of imprecise language, such as "stuff" and "things" |

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 14-22)

# Assessment

The *Guidelines* state:

- Screening and assessment should be conducted early in order to identify and serve students with dyslexia. Early interventions are most effective.

- A multi-tiered system of supports should be in place to provide appropriate first instruction, targeted instruction and interventions.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 42-62)

# Assessment

- General education teachers play an important role in screening and assessment; some students require assessment by a specialist.

- Some, but not all, students with dyslexia meet eligibility criteria for special education services.

See pages 42-62 of the *Guidelines* for a discussion. See especially Table 9.1.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 42-62)

# English Learners

The *Guidelines* note:

- English learners are often identified as having dyslexia much later, if ever, in comparison to their peers. This delays or denies them the kinds of support likely to make a difference.

- Identification is complicated due to several factors (e.g., variability in prior language experience, lack of normed measures and qualified practitioners).

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 33-36)

# English Learners

- Assessments should occur in the student's native language or both the native language and English by individuals competent in the languages.

- Challenges faced by English learners who are learning to read in English should not be confused with challenges caused by dyslexia.

See pages 33-37 of the *Guidelines* for a discussion.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 33-37)

# Supporting Students: Instruction

According to the *Guidelines*, the most effective support for students with dyslexia is skilled teaching. The International Dyslexia Association recommends an approach called "Structured Literacy."

See slides 27-28 for content and principles of instruction.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 63-70)

# Instruction: Content

The *Guidelines* identify the following as crucial content of Structured Literacy programs:

- Phonology (especially phonemic awareness)
- Orthography (the spelling system of a language, including letter-sound associations)
- Phonics
- Syllables (including syllable types)
- Morphology (spelling and learning the meaning of morphemes—prefixes, base elements, suffixes)
- Syntax, Grammar, Sentence Structure
- Semantics/Comprehension

# Instruction: Principles

According to the *Guidelines*, the following principles of instruction are effective for teaching students with dyslexia. Structured Literacy is

- Multisensory (incorporating two or more modalities simultaneously)
- Direct and explicit
- Structured (using step-by-step procedures for introducing, reviewing, and practicing concepts)
- Sequential and cumulative (following a logical order that progresses from simple to more complex concepts)

# Socioemotional Factors

- Students with dyslexia have anxiety, depression, and other social, emotional, and mental health conditions on the order of ***two to five times greater*** than their peers.
- Students with dyslexia may experience low self-worth, frustration, despair, and self-defeating coping mechanisms.
- Students with low self-esteem tend to respond less to intervention.
- Families often experience stress.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 24-25)

# Socioemotional Factors

To address socioemotional issues, the following are important in addition to providing effective instruction and intervention:

- Focusing on strengths and building resilience
- Ensuring access to supportive resources and building secure emotional bonds with caregivers, parents, and teachers
- Positive teacher-student relationships
- Positive peer and social interactions
- Low-conflict environments

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 24-25)

# Strengths

The *Guidelines* list strengths observed in ***some*** students with dyslexia. Among these are the following:

- Curiosity
- An advanced maturity level
- An eagerness to embrace new ideas
- A talent at building objects
- A strong imagination
- Problem-solving abilities

See more on pages 22-23 of the *Guidelines*.

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 22-23)

# Success Stories

It is important to help students with dyslexia identify and appreciate their strengths. Learn about some success stories and view a 3½ minute testimonial video here:

http://dyslexiahelp.umich.edu/success-stories

DyslexiaHelp. (2018). *Success & Inspirational Stories*. Regents of the University of Michigan.

# Tips for Families

Families are important partners. The *Guidelines* provide tips for families to support students with dyslexia. One example for each grade level/span is shared here. See pages 82-93 for more.

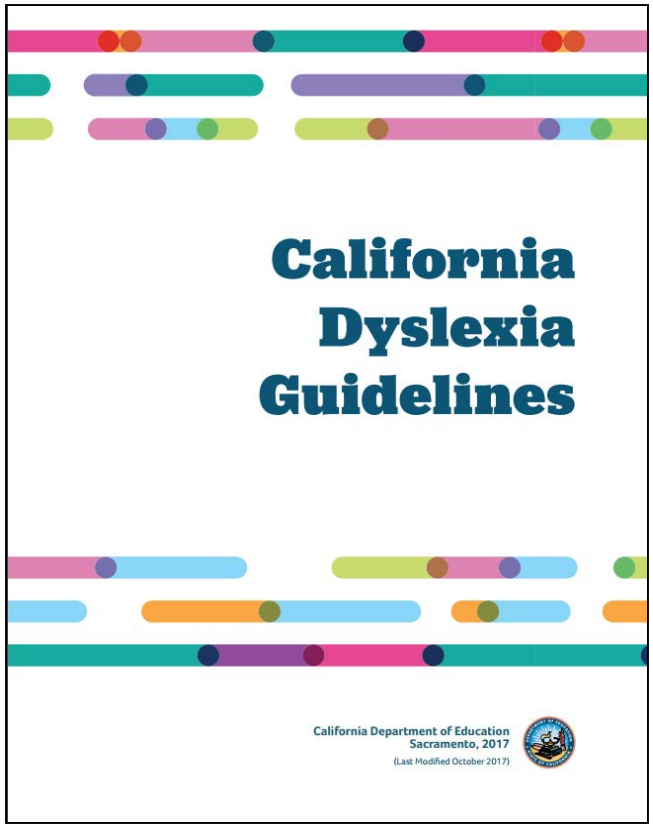
| Grade | Tip |
|---|---|
| Preschool | Read aloud books with rhyme patterns and repetitive text. |
| K | Use fun, highly tactile materials such as shaving cream or sand, have children use their fingers to write and say the letters they are learning. |
| 1 | Encourage children to correct their own errors by asking, “Does that make sense?” Then have them reread the sentence again. |
| 2-3 | Encourage children to read independently for 15 to 20 minutes each day at their reading level. |
| 4-8 | Encourage reading for pleasure with both books and age-appropriate magazines. |
| Middle-High | Help students study for tests by encouraging review or partner practice. |

Source: CDE. (2017). *California Dyslexia Guidelines*. Sacramento: CDE. (p. 82-93)

# Resources and More

See the *Guidelines* for additional information, research citations, and resources.

https://www.cde.ca.gov/sp/se/ac/documents/cadyslexiaguidelines.pdf



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