TRANSCRIPT

Title: Supporting Students with Dyslexia: Digging Deeper

- So if you haven't already looked at the guidelines, this is the table of contents. These are the areas that are covered. Some of the key topics that are covered in the guidelines are the definition of dyslexia and how it's addressed in California education code, what the scientific research has to say about the neurobiology of dyslexia. There's a lot of detailed information on the characteristics of dyslexia broken down by grade level and by age, and probably most importantly there's a lot of information on effective instruction for students with dyslexia. So, the guidelines include the definition of dyslexia that was developed by the International Dyslexia Association and this is a widely adopted definition. It's a lot of other states have adopted this definition of dyslexia. The National Institute of Children Health and Human Development has adopted this definition. NICHD is, they're one of the federal agencies that's really involved in research and development around reading for, reading interventions for struggling readers. So, as we just mentioned dyslexia is also addressed in California state code. It's specifically in there and it, dyslexia falls under the category of specific learning disability. It is one of the specific learning disabilities and as we talked about in our little quiz at the beginning, this makes sense because you know around 80% of the students that get identified with a specific learning disability have a primary deficit in either reading or language processing. AB1369 also changed California education code to include phonological processing as one of the basic psychological processes that can be evaluated when we're identifying students with a specific learning disability. So that was a concrete change to law and to education code that came out of AD1369. So we're just going to talk very briefly about the neuroscience of dyslexia. What the research has shown, now it's been a little bit over two decades of brain imaging research has shown that the brain patterns of readers with dyslexia differ from the brain patterns of readers without dyslexia, and I'm not supposed to step in front of the screen so I'll just kind of point. You can see that for a reader with dyslexia, there's a lot of activation in the inferior frontal area of their brain and that's the area of the brain that's typically associated with early reading skills, with sounding out words, and for most readers after you have read a word accurately a number of times, it gets stored, that word and information about that word like how it's spelled, how it sounds, what it means, that gets stored in the occipital temporal area of the brain, and so for most readers when they're reading fluently that's the part of the brain that's activated and again the brain imaging research can show us that, but something is happening in people with dyslexia that disrupts that process of going from sounding out words, reading them accurately a few times, and then getting stored in that area of the brain so then those words aren't available to them for automatic recall, and so they don't develop that fluent reading. So, the good thing is that the imaging research is also showing us that with effective, intensive intervention the brain patterns of readers with dyslexia come to resemble the brain patterns of readers without dyslexia. It actually changes the way that their brains process print and there's a solid bank of research now showing us that.

- And if you think about that, that means that good teaching, the right kind of teaching, alters neural pathways which we, it should because that's what we assume happens right? But they've got neural imaging to show that it does. So good, effective, correct instruction has the power to alter neural pathways.

- So as we, you know as we were just talking about the students with dyslexia I mean typically they struggle to decode words, and then that negatively affects their reading comprehension. Most people with dyslexia, they have good listening comprehension but they have to devote so many cognitive resources just to decode those words on the page that they can't devote any more resources, or enough resources to comprehend the words on the page. It's exactly what Teresa's student described. I mean that's classic. So, you know we've mentioned phonological processing a number of times. It's in California Ed code, it's in the definition of dyslexia as developed by the International Dyslexia Association and so we'll just talk a little bit about what phonological processing is. Phonological processing is that interrelationship between phonological awareness, especially phonemic awareness, and phonological memory and rapid naming. So, phonemic awareness, that's the ability to identify or manipulate the smallest units of sound in our language called phonemes, and so an example of a phonemic awareness task would be if I say, and this is all auditory. We're not looking at letters on a page. If I say the sounds guh oh t. Can you hear those sounds and put them together and make a word? The word is goat. If you can do that, that's you have good phonemic awareness, or you hear, if you hear the word bat and you can say what those individual sounds in the word are that's a phonemic awareness task and for people who have phonemic awareness deficits, they hear that word bat as one unit of sound without training. And then if you hear that as one sound, then it makes it really difficult for you to start to map the letters that represent those sounds onto the sounds. Phonological memory is that recall of... Short term memory. Recall of sounds in short term memory, so an example of that would be if someone told me a phone number and I had to walk across the room and dial that number, that's phonological memory and again many students with dyslexia have a deficit in that area and then finally rapid naming is retrieval of long term phonological information, so for instance a rapid naming task would be if I'm presenting colors on cards and you can quickly say what those colors are or if you see letters and can quickly say what the names of the letters are then that's, then you have, you don't have a deficit in rapid naming. And so phonological processing, it's that interrelationship of all of these skills. So, the guidelines have detailed information on the characteristics of dyslexia, but these are just kind of the general categories that these characteristics often fall into. So, again we've been talking about inability to sound out new words, limited sight word vocabulary. Very good listening comprehension but very low reading comprehension. And then that... That ineffective response to even effective instruction intervention, and by that we mean effective for most students. If you have a class where all of your students are really progressing well in their reading skills, you have a good idea, you're providing good instruction but you've got one or two that just aren't getting it, well that's of course that's a red flag, that's a warning signal. So the guidelines have a lot of information also on the strengths of students with dyslexia and those fall into some categories too. Often students with dyslexia will have a real talent in working with their hands and building things, just like Teresa's son. Working with models or in three dimensions, three dimensional objects. Very good listening comprehension and this last one's really interesting that the research is showing that a lot of the people with dyslexia often have an increased ability to get the big picture or the gist of things and there are a number of very, very successful people who have dyslexia. Gavin Newsom, our lieutenant governor has dyslexia. Tom Cruise talks about his dyslexia, and Richard Branson who's the, if you don't know him he's the founder of Virgin, the Virgin group. Virgin Airlines, Virgin Records, has dyslexia.

- [Teresa] Richard can I share real quick?

- Yeah.

- So just two things, or maybe three on this list. One of the things that teachers would always say about my son is like it looks like he's not paying attention and I'm always trying to catch him, but then he knows the answer and I'm thinking that should tell you something okay? Like he's sitting over there in the corner 'cause he's in trouble, and he looks like he's not paying attention but when you ask him a question he knows the answer? To get into the Caterpillar program he had to write an essay about why he wanted to be in the Caterpillar program and I'm like great, 'cause I really love writing essays and helping with essays about Caterpillar programs, but he had to explain in the essay why he thought he would be a good fit for the program, and what he wrote was when I'm working on a machine it's just me and the machine. It's like a puzzle, and he said I just have to take it all apart and figure out what's not working, and then put it all back together. Okay, I could no more put a cat machine back together okay? I am a tiny part to whole person. He is a whole part, whole, he gets the big picture, he takes it all apart. He used to build all the Legos without ever looking at the instructions okay? He also like he can put the Ikea furniture together and he-- He's very handy to have around the house okay? But it's just interesting the way he framed that without any coaxing from me, he could say I can take it apart, it's like a puzzle. I figure out what's wrong and I put it all back together. He has to read the manual sometimes, but for the most part it's very visual and very tactile kinesthetic. He also, what was the other thing? Oh, I do want to give you this little proviso too. Every time I talk about him I have his permission to talk about him. He's 19, but I have his permission to talk about him but there are bribes involved, so every time I talk about him I have to give him like gift cards to Cabela or something like that. He's a real outdoorsman so there is a trade here okay? He gets something out of this.

- So. Students with dyslexia in the classroom they often exhibit increased anxiety and depression and that can come across as lazy, or resistant, or defiant because that's a defense mechanism for them. I saw this all the time with the kids in my classroom. It's that idea that if I act out, I don't have to read in front of the class and be embarrassed and it just, it's an effective defense mechanism for them but it's important to recognize what's really going on. You know it's that issue with their reading and not wanting to splay it out for the class that's really at the root of it.

- I had somebody say to me once, I did a lot of research in student discipline and student behavior as part of my dissertation work, and I don't remember what researcher I was reading but there was a comment in there that just resonated with me where he said if a student has to choose between being bad and being dumb or being stupid, especially like you think middle school males, high school males, they will pick bad every time. When my son, when he had to go for testing and he was waiting in the office for the school psychologist to come and pick him up to go the testing room, he said I had to tell all my friends that I was in trouble because I was sitting in the principal's office because I wasn't going to tell them I was gonna go get tested. Something to think about in terms of that social emotional piece that we, particularly he was in the eighth grade at the time. It's very profound.

- So again the guidelines have a whole chapter on screening and assessing for dyslexia and we're just going to touch on it in a very broad way, but some questions to think about to help guide that screening and assessing process are you know do the students struggle to sound out words, to spell words, to generally just read with accuracy and fluency? Do students have a hard time identifying words that rhyme when they're in kindergarten or first grade or again the phonemic processing skills or tasks? Do they have a hard time hearing a word and breaking it down into its individual sounds? Is their reading ability significantly below their cognitive level? So are they really good at math, they're on grade level or above but they're reading several grades below that. Has the student been provided with quality first instruction and they're still

falling behind? And as we mentioned before, is there a history of dyslexia in their family or do you know their brothers or sisters? Are they in the school and do they struggle with reading? Again just a big red flag.

- I'm just curious, how many of you have met or worked with a student that you knew was super bright, but their classroom, their schoolwork, their grades, their assessment results did not reflect that? And there may be other things going on there, it may not be dyslexia, but I've been amazed sometimes having conversations with students where you know that student, I call 'em kids but that student has got a brilliant mind, but it does not show in their classwork at all.

- So, the effective approaches for teaching students with dyslexia there's, again, lots of information and guidelines about that, but just briefly these interventions for students with dyslexia need to meet these criteria. They need to be evidence based, multi-sensory, direct, explicit, structured, and sequential, and the guidelines go into detail about what each of those things mean and we'll talk a little bit about it now. So evidence based means the intervention has either there's research to demonstrate its effectiveness that comes from well designed experimental studies and again the guidelines talk about what well designed means. Or does the intervention demonstrate a rationale that's based on high quality research findings? 'Cause sometimes it's hard and expensive to do research so sometimes there will be interventions that have a very good rationale that's based on other research findings, but you have to determine that. Multisensory instruction is defined in the guidelines as an approach that incorporates two or more modalities at one time, and so an example of that is like there are programs where students tap out sounds as they're reading, so if they're reading the word cat they're tapping those sounds out on their fingers first. They're going cuh at, cat. Or if they're spelling, then the word is top. They hear the word top and they go tuh op, T-O-P top and then they write the word, or you know I mean Lindamood-Bell is very well known and Lindamood-Bell that they have the students play really close attention to how their mouths move as they make different sounds as they're reading and that's just another modality that's incorporated during instruction. Direct and explicit instruction. I'll just go, you can read what's on the slide. I'll just give you some examples of what we're talking about when we say direct and explicit instruction. An example of that would be for instance teaching specific syllable types, then teaching students how to, the explicit procedures for breaking multi-syllabic words into their individual syllables and then blending those syllables to read those words. That's an example of direct and explicit instruction. Structured instruction, again instruction that follows a very well established step by step procedures for introducing and reviewing and practicing concepts, so an example of that would be a program where you have, first part of every lesson might be reviewing sounds that you previously learned on sound cards then teaching or reviewing other concepts that you need to learn like syllable blending and then reading words off of word cards that are practicing those other skills you've just reviewed. I mean doing this every day. Then reading sentences that include words that include those sounds or syllables that you've just reviewed. Then learning vocabulary for a passage that you're going to read later. Learning or reviewing comprehension strategies that then you're going to use in the next part of the lesson where you read a passage that includes words with those sounds or syllables that you've just been practicing either that day or in the lessons leading up to that day. That's what we're talking about with structured instruction and sequential instruction, it's instruction that is organized in terms of reading interventions that's instructions that's organized logically following the order of our language. So you start with the most basic concepts and build up in a very sequenced way from there, so again kids learn the letter sounds. Once they've learned a bank of letter sounds they start to read words that just include those letter sounds and then you build up to teaching them syllable types and using those sounds that they've learned to

read those specific types of syllables and then read words that include those syllables and just very gradually increasing the complexity of the content. So, what we were just talking about was how you teach these students with dyslexia or just struggling readers. I mean this is what you teach them. Phonemic awareness, phonics, fluency, vocabulary, comprehension, the interventions from these students need to cover all of these areas. So another name for this approach for reading instruction is structured literacy and these are the components of structured literacy and this is the way it's presented in the guidelines. Most of the information around effective instruction so the components are phonology, sound symbol association syllables, morphology, syntax and semantics and you can see and this slide just shows you how those components of structured literacy map to the elements of effective instruction that we were just talking about.

- Stop right there for just a second. So one of the most, we get kind of like three very common questions at the state department. One is parents calling and saying I think my child has dyslexia but the school says we don't assess for dyslexia, so that's kind of another conversation and we can share with you a little bit later if you're interested in that discussion, but another one that we get from school district staff or school site staff is tell us what to buy, okay? Just tell us what curriculum to buy. We don't, as the state department, we don't endorse or recommend any specific curriculum but what you need to do as you go about the process of selecting a curriculum is you need to use the criteria, what Richard showed you just now, use that as your criteria or your foundation to evaluate the type of curriculum that you want to purchase or that, so part of it is instructional strategies and part of it is is it structured, sequential, systematic, direct, explicit, multi-sensory, those pieces based on solid evidence. What you will find is it's not like there's 3,000 programs out there that meet those criteria, so you're, part of building this reading intervention or foundational reading program would be to first of all evaluate what you might already have because you might have something in the closet that meets those criteria, but if you don't research around those specific components to start finding something. And I suspect as I've kind of moved around and talked to people that some of you are a little further in this process than other districts, so you talk to each other later on to find out what other districts may be using. So even here at the office of ed level, so. So we're going to, this is the active learning part again. So what we want you to do is to talk again a little bit to a neighbor and talk about maybe what have you learned so far that you didn't already know, and then maybe what has your school or district done to address dyslexia or more broadly, struggling readers? So we'll give you one minute and 33 seconds. That's a little trick I learned in middle school. If you tell 'em you have a minute, but if you say like you have 62 seconds, they're like 62 we gotta move. So her question is is it SELFA's responsibility to train classroom teachers? I'll just speak kind of broadly. My sense is that SELFA tends to feel responsible for the special education teachers, program specialist school psychologists within their purview. I think a coordinated professional development program usually falls on the responsibility of the district. In many cases, the county picks up the charge and I see variations throughout the state, but what I was sharing with Richard, this county office of education to me has an amazing professional development program that they've got going on and you could tell 'cause you just look at the flyers and the handouts over there okay? Where I come, Butte County is quite progressive in its professional development programs for classroom teachers, but I think that's going to vary statewide depending on the county that you're in and depending on those different working relationships. So I don't think it's necessarily SELFA's responsibility. What I see often times in the state as well is there's still a very large divide between special education and general education. When I used to work as a monitoring consultant and I'd go on those comprehensive reviews, I would interview the special ed director and I would say things like how are you working with your associate superintendent of curriculum instruction or how are you involved in the LCAT process? And some special ed

directors would say I'm part of cabinet, I'm involved in all that and other ones would say see that door over there? That's the general education side of the house and we don't cross the hallway to talk to each other. So her question has to do with like what is the research base that you're building that you're basing your decision for selecting materials? If you want to get into the weeds of educational research, okay? The gold standard is random control trials, but in the field of education it's often very difficult to find and structure truly random control trials. What you will find though, and there are resources at the end that can point you to programs that have that strong research base, and again there's not like 1,000 of 'em. What Works Clearinghouse is a place where you can start. Is that, that's one of the ones where you can go, but again the other one that I would turn you to is the International Dyslexia Association because they have put together a matrix of programs and again what you will find, it's not like there's 8,000 of 'em out there.

- And that's in the resource section of the presentation that they'll be available to you.

- [Woman] I just want to add for the questions that you're having, we have a today's meet back channel so.

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