

DYSLEXIA DEFINED BY POINTING – A FIELD TRIP

A case-study discussion for parents of dyslexics.

ExWyZee Monograph No. 3

This monograph is based on case studies of students treated in the ExWyZee program. While it should be of interest to professionals, it is written for parents.

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When beginning a lesson on deciduous trees and conifers you could start with definitions of those two classes of plants, and talk about their attributes. Or you might begin with a field trip and define-by-pointing, pointing to examples of oaks, spruce, and maples. Start with the field trip.

Just as pointing to one tree with acorns on it and to another tree with sap buckets doesn't fully define deciduous trees, pointing to one or two dyslexics doesn't fully define dyslexia. But the dyslexics I'll point to here were chosen to give you examples of extreme and debilitating symptoms of dyslexia.

PART 1: THE STATE OF A-LAS-KA AND THE STATE OF DYSLEXIC DISORIENTATION

Meet two students, Alpha and Beta. Alpha is a hypothetical Russian student. Beta is not hypothetical. He's a bright sixth-grade Michigan student.

Here's Alpha – the hypothetical Russian student.

Our hypothetical Alpha lives in Moscow, and is studying English as a second language. She has mastered English phonics to the extent that she can read any of these word-parts: Al, Ala, Alas, la, las, lask, laska, as, ask, aska, ska, ka.

In a tutorial session on decoding English words by parts she was directed to separate Alaska, and to say the parts in her separation. She separated it as A-las-ka. She said the parts with a-as-in-lace, and was told by her coach to say them with a-as-in-Russia. Having become proficient with English vowel sounds, she said the parts as directed by her coach.

At that point, anyone passing by the classroom and hearing her blend the parts, would think she was saying the name of the state of Alaska, saying it with a slight accent. But Alpha had not yet progressed far enough in her study of English to learn that Alaska is what Americans call that land Northwest of Canada that they purchased from her country in that 1867 yard sale. She was, in fact, not saying the word Alaska. It was not a word to her.

She was merely blending three meaningless word-parts: A-las-ka.

Now meet Beta – a real tree in the dyslexia forest.

Beta is a bright eleven year-old sixth-grader. Over several months of working with Beta I had quizzed him on vocabulary. Here are five responses.

<u>Question</u>	<u>His responses</u>
What's the building where they take sick people?	Hospital
What is a red truck with ladders and hoses on it?	Fire engine
What's a post office?	Where you mail letters
What's a continent?	A really big country
What is Alaska?	The biggest state

There's nothing remarkable about Beta's responses. His vocabulary is what we would expect to see in an intelligent kid his age.

In a tutorial session where he was separating words on the computer to learn to decode words by parts, he came to Alaska in the list.* It was not presented in the context of a list of states, nor was it in a geography lesson. It was imbedded in a list along with other not-related words. He separated it as A-las-ka, just as our Russian student Alpha did in her study of English. (*In ExWyZee SepCom drill.)

When directed to say the parts, he said A – las – ka. As with Alpha, he needed coaching on the vowel sound. (A-as-in-pa, a-as-in-ask, and a-as-in-bah). Then he blended the parts, and said the word so that you, passing by in the hallway, would think he was saying the name of the state of Alaska.

But he was not. When asked what the word he just pronounced means, he could not tell me. While a listener in the hallway would think Beta was saying the name of the state, he was not, in fact, saying that word. As with our Russian student,

He was merely blending three meaningless word-parts, A-las-ka.

After rapidly reciting those word-parts several times, blending them perfectly, and struggling to make sense of them, Beta entered a state of extreme anxiety – almost a state of panic. If he were connected to a polygraph, I'm sure I would have seen a spike in readings. I touched his arm, and said, "It's a state."

Beta tilted his head back, clenched his teeth, clenched his fists, and said,

"Oh, yeah, Alaska!"

his face and body-language reflecting the frustration he feels so often after finally realizing the meaning of a familiar word he has named after decoding it by parts.

Among the many words for which Beta has made the same dyslexic response are, hospital, office, Africa, America, Benjamin, ceremony, Colorado, Nevada, comfortable, continent, Delaware, department, education, evaporate, Japan.

Again, we are not looking at a vocabulary problem here. Before Beta came to those words in decoding-by-separation drills, if you had roused him from a sound sleep and asked him to use any of them in a sentence he would have used it in a way to indicate that it was in his vocabulary. (He was not quite correct when asked to use continent in a sentence, saying it's a really big country.)

So what's going on here? How to make sense of it?

What's going on (not going on) in Beta's brain, when he has broken the reading code for a word that is in his vocabulary, and has heard himself say it, but can't identify it? What's going on is severe dyslexia-in-action. Or, for a play on words, dyslexic inaction.

In trying to comprehend Beta's struggle, look at some ways you access the store of words you have in your vocabulary – in your word bank. You have "Alaska" stored there. Here are cues that bring words to mind from our vocabulary banks.

(1) It can be a kind of mental reflex. If I have you look at a map on which names of lands have been erased, and I point to an extension of land at the Northwest corner of Canada, probably I would not even have to ask you what that chunk of land is called for you to bring the word Alaska from your word bank – to think the word. That reflex would take no more thought than the scratching of an itch.

(2) It can be triggered by a question for which Alaska is the answer. (Where is Mt. McKinley?) A substantive word is stored as a sort of package in the bank, containing all the stuff you know about that thing. You might know how to spell Alaska, know Mt. McKinley is there, even know the year of its purchase from Russia. (Crossword puzzle addicts can become cranky if they don't have their daily fix of retrieving words when given obscure bits of information about them.)

(3) And, to state the obvious, hearing the sound of a word, somebody saying it, will bring it into your consciousness.

Why state the obvious?

Why state the obvious, that hearing a word spoken will bring it to mind? Because, if you are dyslexic, and the somebody who is saying the word is you, and saying it is the result of breaking its phonetic code to pronounce it, your brain might not bring the meaning of the word from your vocabulary bank into consciousness. How can it be? How can Beta's word-meaning vault stay locked when he repeatedly voices a word he has decoded – a word that has been in his vocabulary for years – a word he understands without ambiguity?

It appears as a dyslexic mental block, something like, yet profoundly different from, another sort of mental block. You see a friend approaching at Kroger's, someone you had not expected to see today, and you block on her name. Call it dys-namia. The closer the friend comes, the greater the dys-namia panic, and you couldn't come up with her name if winning the lottery depended on it. You have a thing in mind (in this case a person) right there in front of you, but your name-vault is locked up.

But the dyslexic lockup of the meaning-vault differs profoundly from dys-namia in that dyslexia is not a quirky and occasional brain malfunction at Kroger's. Dyslexia is chronic. Beta's case is acute and chronic.

NOTE: The meaning-vault lockup described here is not an unusual symptom of the Neurological Dyslexia Syndrome. You will see it often among dyslexics.

PART 2: THE SOUNDING-OUT PROBLEM

Letter-by-letter sounding out of words is considered by most people, including me, to be essential in primary reading instruction. But a common deficit in the mid-elementary-and-up reading-impaired student is failure to make adequate transition from that letter-by-letter sounding-out to word-part-decoding. When Beta (see Part 1) started in the ExWyZee program his deficit in that transition was severe.

Not only did this sixth-grader attack multi-syllable words letter-by-letter, (computer as cu-o-mm-pu-uu-t-e-rr , insomnia as ii-nn-ss-o-mm-nn-i-aa), he attacked three and four-letter words letter-by-letter, tan as tu-an, gent as guh-ent. The term “habitual response” is not strong enough to describe his approach to reading unfamiliar words – even in reading familiar words – when reading them aloud. His letter-by-letter procedure was a compulsion.

Beta is by no means an unusual case for this deficit. It is seen to varying degrees in most of the students who have been evaluated for work in the ExWyZee program and found to be reading-impaired.

An eye-roller

After a few sessions with Beta I advised his parents that he should never again hear the words “sound it out” from any of us. I said that we were not faced simply with teaching him to read the word somnambulist by parts, som-nam-bu-list or somnam-bu-list or som-nambu-list, but that we must intervene in his inclination to read it as ss-o-mm-nn-aa-b-u-ll-i-ss-t. I like “somnambulist” to make this point because it’s phonetically well-behaved. And, since it’s not in most kids’ vocabulary, they can’t read it as a sight-word.

When telling a parent that we have to break a student of sounding-out words I’ve never had any of them actually roll their eyes, but sometimes I detect a little tilt of the head or a pursing of the lips that suggests I have a selling job to do. (I seldom suggest something so kinky on a first date.)

We, his parents and I, put Beta on focused exercises, exercises designed to make him aware of how he was trying to read words, and to break him of that compulsive decoding behavior. I worked with him at weekly intervals, and his parents worked on it between my sessions with him. See ExWyZee Monograph No. 2, Separation of Words on the Computer.

We have pretty well broken him of the compulsion. It took most of a year’s work to do it. It is most satisfying now – to see Beta backslide and begin to verbally sound out a word letter-by-letter, then slap himself on the face and say, “separate, separate, separate.”

But what of phonics?

Making the case that we have to break a reader of trying to read multi-syllable words as sounding-out chores doesn’t mean that the reading-impaired student doesn’t need phonics work. Almost all of them do. Not only had Beta not made

the transition to word-part decoding, but he had a serious deficit in reading three and four-letter word parts (eg: abo, abot . . . zam, zema). Yes, he could sound-out zoro (zz-o-rr-o), but could not instantly blend those four letter sounds (phonemes) and spit out zoro.

Here, then, is a quandary. When asking Beta to read zoro aloud, and hearing him begin by saying zz-o, we would halt him and tell him that we didn't want to hear his brain working on the letters, that all we wanted to hear was what his brain decided the word was. The quandary lies in the fact that it's not possible to intervene in a student's letter-by-letter sounding when he reads silently.

Nevertheless, we believe that therapy had an important impact. Today Beta will read four-letter words upon seeing them flashed on the computer screen for one or two seconds (eg: sand, more, jump, July). On one hand, that could be depressing in view of the fact that the fluent reader reads words at the rate of a few milliseconds. On the other hand, we don't expect Beta ever to read at that rate. So we gladly settle for the remarkable improvement he has made in reading speed and comprehension.

What phonics exercises? [Reading Deficits 10-2-10.pdf](#)

Here's one kind. Given a list of rhyming words (and/or non-word letter-blends) and given the first word, the student is directed to read the rest of the words in the list (eg: bent, dent, jent, kent, lent, ment, pent, rent, sent, tent, vent).

If you think that such a simple exercise is trivial, you should see how difficult that task is for some mid-elementary reading-impaired students. And reading such a list where the terminal letter of the words in the list changes (bent, bend, benk, benz) is even more difficult.

Reading non-rhyming words with internal-changes (bell, ball, bull, bill, boll) is still more difficult. In severe cases what you hear at first is not a rhythmic recitation of the words. What you will hear is the habitual sounding-out of each word, as if they are not even similar letter-blends.

Reading fluency will not be attained as long as a student is reading "Don's dog bit his left hand" as six sounding-out-chores. The job we have is to turn the words, Don, bit, his, dog, left, hand into sight words – to make them as instantly recognizable as the student's own name on the paper. How can I make that assertion with a straight face, when it would take several pounds of typing paper to print all 3 and 4-letter words (and word-like letter combinations) in the English language?

It's not as outrageous as it appears to be. When a student can instantly recognize, and pronounce, the words bent, dent, and fent, she is in position also to pronounce gent, hent, jent, kent, lent, ment, nent, pent, rent, sent, tent, vent, went, yent, and zent. And instant recognition of the members of that family puts her in position to decode the words in this family: cement, intent, cogent, gentle, invent, relent, resent, rental.

All of this raises the question: Will the fact that a student can recite that rhyming fent-gent list above mean he will instantly recognize the word Gents painted on a door? Not necessarily. But he certainly won't recognize the members of that list painted anywhere if he can't recite them in a rhyming list.

Two questions arise

(1) How much drilling is necessary to break the sounding-out compulsion?

Answer: SepCom exercise sessions, or other techniques, at least five days a week, for however long it takes.

(2) How long might it take to see satisfying results? Answer: It depends on how long the student has been hearing the three words sound it out, when he should have been hearing the two words, separate it. But, for the kid with this serious deficit don't think in terms of a few lessons. Think in terms of months. We saw remarkable improvement in Beta after a year's work on ExWyZee SepCom drills.

Then what?

It would be a mistake to think that, for the seriously-impaired student, drilling seven days a week on instantly recognizing word-parts will result in quick and painless transition from letter-by-letter sounding-out to word-part decoding.

What those drills provide is an essential word-decoding tool – but not the inclination to use it. When a student has spent two or three years stuck on the sounding-out level, habitual letter-by-letter word-reading can be deeply ingrained in his brain. It can take months of word-part decoding practice to train the brain to attack the word computation as com-puta-tion, or comp-u-tation, or com-pu-ta-tion, or compu-ta-tion.

We have to provide forced word-separation drills. So see ExWyZee SepCom Monograph No. 2, Separation of Words on the Computer.

What of Beta now?

When we started with Beta, his special-ed program had him reading The Fat Cat Sat on the Mat. Yes, a good rhyming exercise. But what he was not getting was decoding by separation of the words Fatima, Catatonic, Satisfaction, Matador.

Beta will struggle all his life at reading words. But it's very satisfying now, and funny, actually, to see him regress, and begin to read an unfamiliar word by sounding it out letter-by-letter.

eg: beginning to read "randomize" as rr-aa-nn- . . . , ,
then to look sheepishly at me,
slap himself on the face, and say,
"Oh, yeah, separate, separate, separate,"
then to recite the parts,ran-do-mize.

PART 3: DEFINITIONS OF DYSLEXIA, OTHER THAN BY POINTING

The street definition of dyslexia: Even to begin to comprehend the neurological dyslexia syndrome (my term), we must dispose of the definition that dyslexia is a condition of faulty visual perception, seeing letters and words backward or in some other distorted way. It isn't.

Yes, kids who have trouble learning to read confuse the letter-b with the letter-d. But, while it's not as noticeable, they also confuse the pairs p-q, j-i, m-n, t-f, p-q, a-e. And, yes, the dyslexic might read "saw" as "was," but that doesn't mean he saw-saw-as-was. When you got a phone number wrong because you transposed two digits, it's not because you saw them in the wrong order. (See Sally Shaywitz, Overcoming Dyslexia, pp100-101)

Note: That doesn't mean that faulty vision won't affect ability to read. A retired friend, Corwin, got a high school diploma in Ohio, perhaps because he was a good boy. He was, as they say, passed-on through school. He was virtually functionally illiterate. Some thought he was not too bright. On the same day that he could test 20-20 for each eye on an optometrist's wall chart, his eyes would ache after spending an hour to read a page in an auto mechanics magazine. After high school graduation a friend suggested that he see an ophthalmologist, who found that Corky's eyes were out of focus. One eye focused on the page at eight inches, the other at fourteen. (Corky is no longer sure of the measurements.) He was put on an eye exercise program. After some months on that program, Corky enrolled in college. He got a BA, an MA, and is now retired from a successful teaching career.

If you see any hints of a vision problem, squinting at the screen, getting the face very close to the screen, frequent rubbing of the eyes, signs of headache when reading, it's a good idea to see an ophthalmologist. And remember my friend Corwin. Scoring 20-20 for each eye doesn't mean the eyes are focusing together.

MRI definition:

Technically, this should be called the MRI *observation* instead of a definition. But whatever we call it, MRI scans of the brain show graphic differences between dyslexic brain activity and that of non-impaired readers.

Viewing MRI scans is like looking inside a wind-up clock to see how it works, instead of inferring its inner workings from observing movement of the hands and hearing it tick. See MRI images in Overcoming Dyslexia by Sally Shaywitz (\$15 paperback), recommended reading for all parents of reading impaired kids.

MRI scans shown in the Shaywitz book provide a peek inside the brain at the neurobiological reading mechanism at work. While Shaywitz does not infer causes, or fixes, for dyslexia from those peeks, those images are better than a book of words to make some sense of the next definition, by the International Dyslexia Association (IDA), that labels dyslexia as a neurological condition.

The International Dyslexia Association's definition:

The IDA's definition (for exact wording see Appendix) says some fairly well-known things about dyslexics – that they have trouble with spelling, word recognition, and word decoding. And, as a secondary consequence, they have problems with reading comprehension. *Secondary consequence?* But sarcasm aside, the IDA's definition says two important things about dyslexia that are not commonly understood.

It says dyslexia is a neurobiological condition. And, while the IDA doesn't put it quite this way, that makes it a no-fault affliction (as are stuttering and the Tourette syndrome). It's not the kid's fault. Not his parents' fault. Dyslexia does run in families, but that's no more a parent's fault than passing on curly hair.

The IDA definition says the reading impairment is unexpected given a student's other abilities, and given that he has had reading instruction known to be effective for most students. That is, there are not obvious reasons for the problem. It's not retardation, and the neurobiological condition is not caused by inadequate teaching.

BUT, the IDA would have done us a favor if it had added a copyright condition – that its definition was not to be cited without the following caveat: While it's true that the dyslexic is going to have reading problems even with the best reading instruction, it is also true that dyslexic impairment is made worse by two features commonly seen in reading programs:

1. A Wait To Fail policy, where, instead of routine and rigorous early screening, starting in semester-one of grade-one, and providing extra attention and monitoring for at-risk children, a child might be eight or nine years old before the reading impairment is seen as serious enough to merit referral for remedial help. By that age we've lost prime time, when the brain is most receptive to learning skills for which it is not hard-wired, like playing the violin, learning a foreign language, *and reading*. (Google Joseph Torgesen, and read his article, Catch Them Before They Fall. That article might move you to ask some questions at the next meeting of your local school board.

2. Incidental Remedial Instruction, where skill deficits are treated only when incidents of those deficits occur during oral reading sessions – instead of providing Focused Remedial Exercises. By focused exercises I mean exercises and drills to concentrate a student's attention on specific phonics and sub-skill deficits, with that focused attention to go on for as long as the deficit is a handicap to reading. See the appendix for Examples of Focused Drills.

PART 4: THE EMOTIONAL DIMENSION OF DYSLEXIA

Pointing to Ward, an adult: A failed attempt to overcome emotional trauma.

A severely-dyslexic, intelligent adult, Ward was seated in a room where the temperature was about 70 degrees and the humidity not overly high. When in his teens, after dropping from high school, he had a string of private well-meaning tutors, and he attended a summer reading clinic at a university. Now, in

his forties, and illiterate, I introduced him to exercises on the computer to assess his ability to take mental snapshots of letter combinations. Letter-triples were flashed on the screen one triple at a time (eg: PCM, DOP, ZAD). The task was to type the three flashed-letters into the computer.

In no more than two minutes into this activity beads of sweat appeared on Ward's forehead, and his fingers nervously drummed on the desk in front of the computer. He pushed his chair back saying, "I can't do this." The years of failure and embarrassment had made any attempt to deal with letters emotionally draining for him. This was a man who when sent to a supply room on his job, to get a case of string beans, might bring to the cook a case of kidney beans because there was only printing – not a picture – on the side of the carton.

Pointing to 3rd girl PZ: Successful attempt to deal with emotional trauma.

PZ knew at least one letter-sound for each letter A to Z. Common four-letter words were a challenge for her. She might read "sent" as a sight word, but then attempt to read "bent" by sounding it out (bu-ent). She was put to the task of reading lists of rhyming words (eg: rent, sent, bent, went). The procedure is for me to say the first word in the list and she is to read the rest of the list. The task is simply to read the items in the sound-family by changing the initial sound for each word. She was unable to do that. With each attempt she grimaced, closed her eyes, pounded her right fist into her left hand, saying "It's too hard."

In our third session, after two sessions of working with her on those rhyming lists, and seeing her get increasingly frustrated and agitated, I told her we were going to do some easier stuff. I put her on the ExWyZee snapshot sequence, at a level where a three-letter combination flashes on the screen.

The task is to pick that flashed combination from a multiple-choice list. (eg: "mot" flashes, and the multiple-choice list is mot, mat, not, nat.) She was reluctant to participate at first, but her first score was 60% on ten exercises. She perked up considerably when the computer showed her that score, and she saw the red dot on the graph the computer presents.

As I usually do, I had her run the same set several times. With the second run, seeing the red graph dot higher than the first dot, she was ecstatic, and instead of pounding her fist into her palm, she clapped her hands. On the 4th or 5th run of the set her graph dot was at 100%. With that she not only clapped her hands, but bounced up and down in the chair. I printed the graph for her to take home, and she clutched it to her chest as she went back to her classroom.

I'm not pointing to PZ's case to suggest dramatic improvement in her ability to read. After several sessions with PZ there is no discernable improvement. But what is discernable now is more willingness to take reading risks. At each session I have her do "easy stuff" (snapshot exercises) and a little "hard stuff."

One of the things taught in teacher school is that you don't tell a student that something is hard. But PZ has the thrill of (graphic) success and now is willing to take reading risks. She is making some progress in the phonics sequence. She

doesn't clap hands at her small increments of improvement in reading the rhyming lists, but neither does she pound her fist into her palm and make a pained face.

Pointing to CV, a second grade boy: Coping with passive resistance.

I've dealt with many Passive Resisters, and CV was one of the masters at the PR defense. CV would pull several of the Passive Resister's tricks for reading exercises: Stare off into the distance – with a smile. Look at me with his sweet smile and say "I don't know." Cover his face and smile through his fingers. Play with the computer keys – always with a smile. So his mother and I played a con game. Conning Connor. (Really, his name is Connor.)

Conning Connor. We, his mother at home, and I in weekly sessions, had him working on the SepCom sequence, where the student decodes words by separating them on the computer. The student looks at a word in a list on the screen.

If he can read it, he gives himself credit by clicking on the Said-It Box for that word. If he can't read it, or reads it incorrectly, he is to separate it (eg: mas-to-don). He is told to say each part separately, then to "put them together." If that doesn't identify the word for him, he's told to say the parts faster. Faster!

But Connor persisted with his smiling PR tricks. It became evident that he could do better than he was willing to risk doing. After several sessions of trying to get past his PR defense, I presented him with a list of compound words (eg: anything, anyhow, Sunday, football, sometimes), and told him that I did not want him to read the words. I said (with emphasis): "Do not read these words. Read only the first part of each one."

The first word in the list was "anything." He didn't put on his PR smile at this strange request. He looked a bit bewildered, and read the first part, "any." I said "Ok, give yourself credit." His bewildered look continued as he checked the Said-It box. The second word was "anyhow," and he said the whole word. I squeezed his shoulder and scolded him, telling he was not supposed to say the whole word, just the first part. He smiled, knowing I was putting him on with that scolding.

With that smile I had him. He successfully read the first parts of these compound words: ramrod, seesaw, sidewalk, sideways, snowstorm, something, Sunday, sunshine, tangent, Fender. For the next session I had him do compound words, reading only the last part of each compound word. We progressed with that con-game, until I directed him: "Don't read the word just say the first part and the last part of each one."

That con took about four sessions to pull off. It worked. Connor became willing and able to decode-by-parts even unfamiliar words, such as tangent, superb, victor, vector, wanton, bunson.

PART 5: MIGHT DYSLEXIA BE INDUCED?

First an analogy. Think of a hypothetical physical problem in your body caused by inability of your gut to absorb vitamin-DYS (DYS Deficiency Syndrome). If you were born unable to absorb vitamin-DYS, then your DYS Deficiency Syndrome is a no-fault illness. But if your gut is okay, and vitamin-DYS was routinely withheld from your school lunch tray, then we might consider it to be an induced illness.

The question of induced dyslexia comes to mind through data in a study by the Shaywitz team, Bennett and Sally, in Biological Psychology. (Bennet A. Shaywitz. Development of left occipitotemporal systems for skilled reading in children after a phonologically-based intervention.)

A troubling scenario:

The Shaywitz team took reading-impaired students ages 6 to 9, made MRI brain scans of them and found those scans to be typical dyslexic brain pictures of the sort shown in Sally Shaywitz' book, Overcoming Dyslexia. The scans revealed inadequate activation of certain left-brain regions involved in fluent reading.

Then those students were treated to phonologically-based (think phonics-based) concentrated reading instruction. After a year of that instruction, for an hour a day, five days a week, MRI pictures were again taken. The left-brain activity in post-treatment scans was more like the typical pictures of the brains of fluent readers.

And the reading ability of 37 students in the Experimental Intervention group improved commensurately. The same scanning and pre and post-testing was done with reading-impaired control groups (40 students) who received their schools' regular-classroom and regular-special-ed instruction. Those groups' left brain activity did not increase, and their average reading scores did not improve.

So what happened? While referring to those results as "brain repair" would be inappropriate, implying that brain damage caused the student's reading problem, "brain revision" does seem appropriate.

What's so troubling about it is the question of what the teachers in the study did to restructure those dyslexic brains. Did they invent some innovative cutting-edge methodology for teaching reading? Or did they simply do things that should have been done earlier and in a more focused instructional mode? As best I can tell from reading the research report, and reading what has been written about it in the dyslexia literature, they used readily available teaching materials.

Since nothing in the report on the study suggests that the instructional materials were anything other than materials readily available in the education marketplace, the implication appears to be that at least part of the reading impairment in the students was due to insufficient prior reading instruction. If it is not fair to refer to that as induced dyslexia, it's not too harsh to call it negligently aggravated dyslexia. See Features 1 and 2 in Part-3 of this monograph.

PART 6: APPENDIX

Examples of focused drills:

- (1) ExWyZee SepCom exercises. Word-separation drills to promote the transition from letter-by-letter sounding-out to word-part-decoding. (Not to be confused with the common exercises of separating familiar words by syllables, where decoding of words is not the immediate objective of such drills.)
- (2) ExWyZee vowel-sounds exercises to develop facility at experimenting with vowel sounds in decoding unfamiliar words. Including the two g-sounds (gorge) and the two c-sounds (cancer).
- (3) ExWyZee E-rule drills. (eg: What do these words become when the letter-e is attached to them, sit, ban, dam, cot, zen, but?)
- (4) ExWyZee snapshot drills. (eg: Seeing the word sister flashed for one second, and choosing it from a multiple-choice list: sister, mister, sistern. Seeing the sentence “My mother’s car is blue.” flashed for two seconds and choosing it from a list:
My mother’s car is blue.
My mother’s car is new.
My father’s car is blue.
My brother’s car is blue
- (5) Dumb-ending word-separation drills. Separating smart-part from dumb-part in words with absurd English spellings (eg: con-scious, atten-tion, bro-ught, thor-ough). And then finding the phonetic spelling of those monstrosities in a list of them (tion=shun, scious=shuss, gue=g).

An adhesive tape remedy for the infamous b-d confusion

JC was a dyslexic sixth-grader. When I met with him and his parents, to explore putting him in the ExWyZee program, I had him read some isolated words on the computer. When seeing a word with letter-b or letter-d, he immediately asked one of his parents at the table “is-it-b-or-d?” And he was told which letter it was.

Later, in a diagnostic session with JC and his father, I put adhesive tape on the backs of JC’s hands, printed small-d on the left and small-b on the right, oriented so that when he held his hands with fingers pointed away, he could see the letters. I told him that from now on nobody would tell him whether a letter was b-or-d, and that he should look at the backs of his hands.

Also, I had him print cap-B on paper, had him erase the top loop, and pointed out that small-b is cap-B with the top loop erased. He said, “Oh yeah, and d goes the other way.” After that, for a word containing b-or-d, he raised both hands, looked at the tapes, and made the correct decision of whether the letter was b-or-d. After two or three sessions with tape on his hands JC no longer needed that aid, and he chose not to have it there. But I would sometimes see him look at the backs of his hands for a word containing b-or-d, even with no tape on his hands, and always make the correct decision about the letter-b or the letter-d.

International Dyslexic Association's 2002 definition of dyslexia

(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.”

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