



## Dyslexia Solved

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Dyslexia what? Solved? You must be kidding, right? The answer lies in a concept discovered by an inquisitive doctor who also happens to be dyslexic. Through his research and years of working with dyslexics he determined that dyslexia has an easily correctible visual origin. A simple test known as the “reading arc test” has been developed to find a position where the written words are clear. Once the clear spot is found, Dyslexia Solved!

Have you ever been in an elementary classroom during reading time? If you look closely you can learn a lot about how some students have learned to compensate for their inability to see the words clearly. In a recent visit to a 3<sup>rd</sup> grade classroom I noticed a girl sitting on her knees in her desk looking straight down at her book. A boy was slouched down in his desk with his book propped up. He was using his knees under the desk to elevate the book even higher. Another boy was fidgeting, with his face close to the book. He seemed to be chasing the words around the curve of the book as it lay on his desk. Another boy had his hand in a fist on his desk with his chin on top of his fist. His book was flat and he was looking in an upward angle. Another girl had her hair draped over her left eye, and was holding her book up and out to the right. These are all ways that children use to attempt to compensate for their inability to see the words clearly. It's how they compensate for their dyslexia.

In the wake of No Child Left Behind lies a group of children who, despite our efforts, seem to always get left behind. They have many labels; learning disabled, struggling readers, ADHD, and dyslexic are among the most common. They are a frustrating contingent that are growing in numbers. Despite their inability to read well, they otherwise display average intelligence. And now with the implementation and increased rigor of the Common Core Standards, what will happen to them?

There is a simple solution just waiting to burst onto the scene, but it requires a new way of thinking about the root cause of reading peculiarities. This solution was developed by George T. Manilla, M.D. over 25 years ago, and in 1990 was published in his book, *Dyslexia: A Reading and Writing Correction Method*. Since his

discovery, Dr. Manilla has been helping people to read in the small town of Elko, NV. He has refined and simplified the system to, as he states, “read like I read”. You see, Dr. Manilla is also dyslexic. It seems that it has taken a dyslexic to develop a system to help fellow dyslexics.

The U.S. National Library of Medicine offers this definition:

*“Developmental reading disorder (DRD), or dyslexia, occurs when there is a problem in areas of the brain that help interpret language. It is not caused by vision problems. The disorder is a specific information processing problem. It does not interfere with one's ability to think or to understand complex ideas. Most people with DRD have normal intelligence. Many have above-average intelligence.*

*DRD may appear with developmental writing disorder and developmental arithmetic disorder.*

*The condition often runs in families.”*

The definition listed above contains the statement, *“It is not caused by vision problems.”* Keep that in mind as I explain the correction process used by Dr. Manilla to help people easily overcome their dyslexia.

Lets talk about a typical child who is a struggling reader. Devan is a good example of the children helped by Dr. Manilla. Devan is a 2nd grade boy who is of normal intelligence. While reading out loud you can hear, see and feel Devan’s struggle. He uses a finger to attempt to keep his place. He fidgets and appears to be chasing the words around the paper. He reads one word at a time. He does not

attempt to sound out unfamiliar words. He either skips them entirely or fabricates a word that might possibly fit the pattern of the sentence. In a one-minute timed test while reading a passage written at the 2nd grade level, he reads 49 words with 0 errors. However, he completely skipped two lines of text. He didn't even realize that he skipped the lines. When asked to recall what he had just read, he had almost no comprehension. According to the 2006 Hasbrouck & Tindal Oral Reading Fluency Data chart a 2nd grade student reading at the 50<sup>th</sup> percentile should read 72 words per minute correctly in the Winter of the school year and 89 words per minute correctly in the Spring. Devan does not receive any special services at his school.

When asked about what he sees while reading, Devan explains that the words move and get blurry. Sometimes they push together or jump lines. He can't seem to keep them still and get them into focus while reading. He has had his vision recently checked by an eye doctor who states that Devan has normal vision and does not need glasses.

The definition mentioned previously by the U.S. National Library of Medicine seems to be true, that Devan's struggles are not caused by vision problems. His brain must be misinterpreting the words. After all, he has normal vision and does not need glasses, right?

Dr. Manilla would disagree. To demonstrate to Devan and his parents that Devan's problems stem from a visual origin, Dr. Manilla uses what he calls the "Reading Arc Test." Here is how it works. Devan is asked to look at a book placed before him at the desktop level in what is known as position "A". (see figure 1)

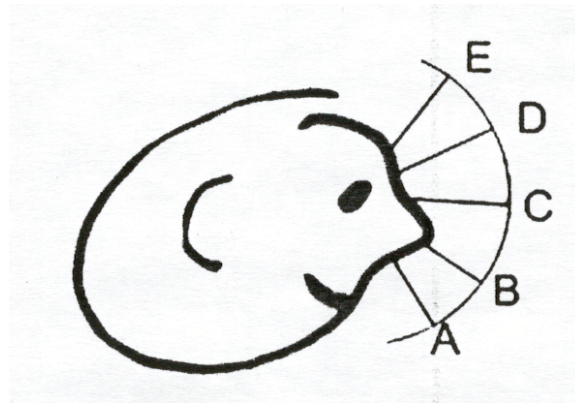


Fig. 1

Devan is then asked to slowly move the book upward in an arc through positions “B”, “C”, “D”, and “E”. He is instructed to then bring the book to the position where the words are clear and no longer move, jump or push together. Devan moves the book to position “D” and states that everything is clear. He is asked to then read while holding the book in this position, and the improved fluency is instant. He easily doubles his words per minute read. Words that he could not read in position “A” were suddenly read easily in position “D”.

But how can this be? Dyslexia is not supposed to have a visual origin, right? It is supposed to be a neurological malfunction where the brain confuses what it sees. The answer stems from this simple explanation.

Think about this concept. For the most part, when students are taught to read, the materials are placed flat on the desk. When we sit in an upright position with good posture (as we are taught to do in school), we have to look in a downward position towards the reading material. When looking down, in order to work together for stereoscopic vision, our eyes have to rotate downward and inward

(incyclorotation). Conversely, when we look up, our eyes will rotate upward and outward (excyclorotation). While looking straight ahead, our eyes do not rotate but will converge together as an object becomes close to our face. We often call this “cross-eyed.” You can test this by focusing on your finger while bringing it towards your nose.

You may have also heard the term “lazy eye,” which refers to one eye not tracking the same as the other eye. It may appear to point outward (exotropia) or inward (esotropia). The eyes do not work well together, and is attributed to a lack of strength of the muscles surrounding the eyes, making it difficult to maintain focus on the printed words. In order for the brain to interpret what both eyes are seeing simultaneously, the image has to fixate on the fovea, which is located on the back of the retina in the eye. If one eye is out of alignment with the other, the words may be blurry, may drift apart or run together, may flip or reverse, or even shimmer. The coping mechanisms that I mentioned previously are what the child does to try to overcome the blurring, drifting, and reversing of words and letters. Again, think back to the list of symptoms - holds the book up at eye level or towards the dominant eye, fidgets, stands up or sits on knees, chases words around the paper. Essentially, they are trying to find what we refer to as “the clear spot.” Only a dyslexic knows what it means for the words to be “clear, but unclear.”

What Dr. Manilla discovered is that somewhere in the reading arc the eyes will align and the words made clear to read. You can instantly hear the difference in

the child's reading when holding the book in the position where the words are the most clear.

Another example, which is possibly more convincing has to do with nonsense words. Dyslexics struggle with decoding of words and in their inability to see the separate phonemes of the word. It's difficult enough for them with the words they already know or have seen on paper. But give them a test on nonsense words, and their troubles multiply. Since they are unable to decode words, nonsense words provide an even greater challenge. However, you can give a child a nonsense word test in position "A" where they labor and struggle, barely managing to get any words correct when speaking, then have them move the material to their clear spot along the reading arc continuum and listen to them suddenly pronounce the nonsense words correctly.

To test this we went to the local charter school and asked to perform an experiment of the Reading Arc test on their students. We tested 114 students in grades 2 through 8 using reading passages from the Ekwall / Shanker Reading Inventory, 4<sup>th</sup> edition. For the first test we asked to students to sit straight at a flat-topped desk with the paper lying on the desk in front of them. This is reading position "A". They read Form A Oral for their grade level. We timed their reading and kept track of their reading errors. We then asked them the ten comprehension questions provided as part of the Ekwall / Shanker Reading Inventory.

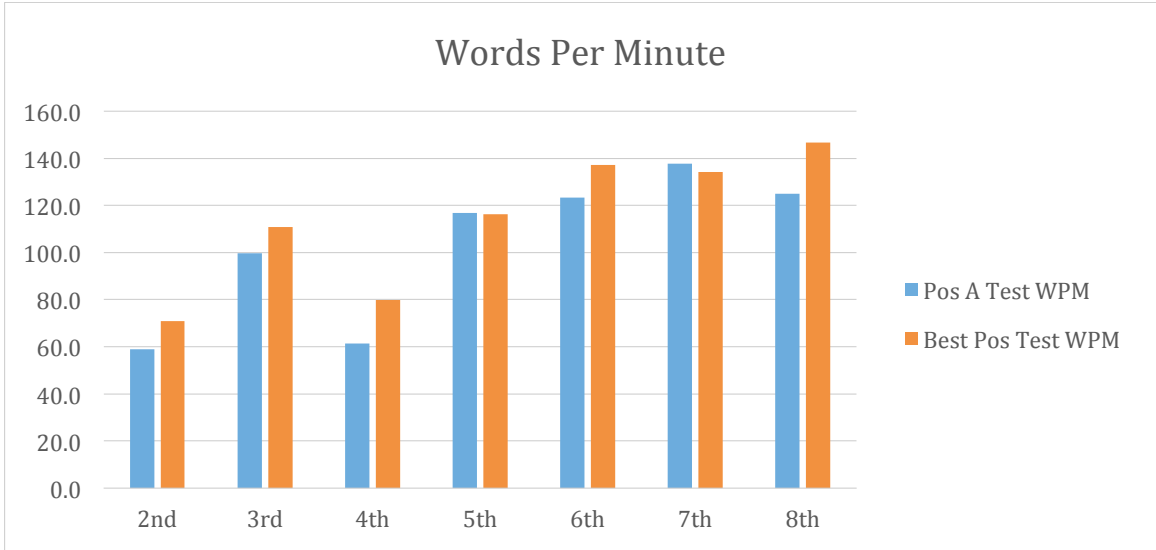
Once this information was recorded we performed the Reading Arc test where we slowly moved the paper throughout the reading arc, from position "A"

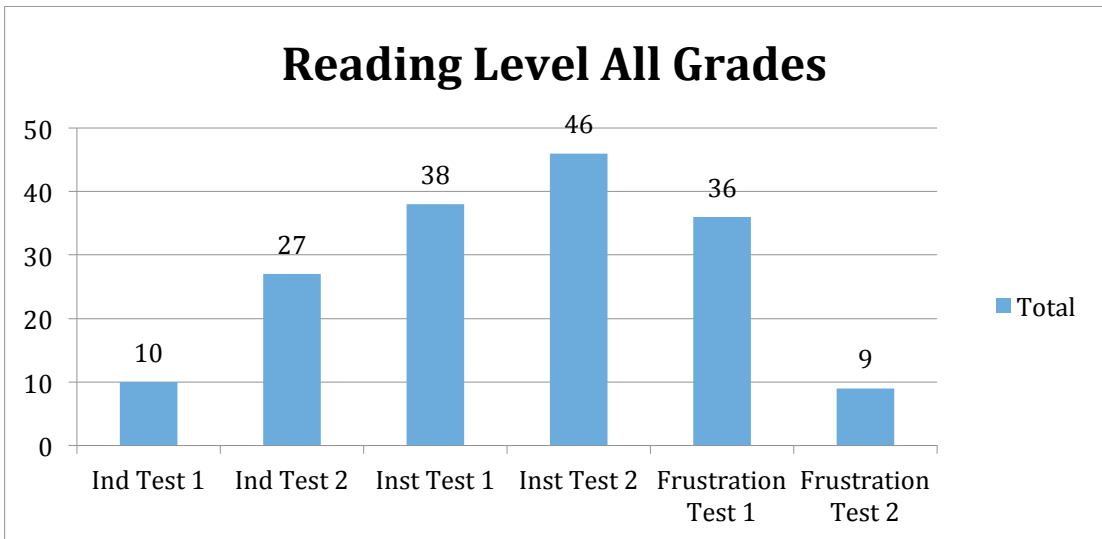
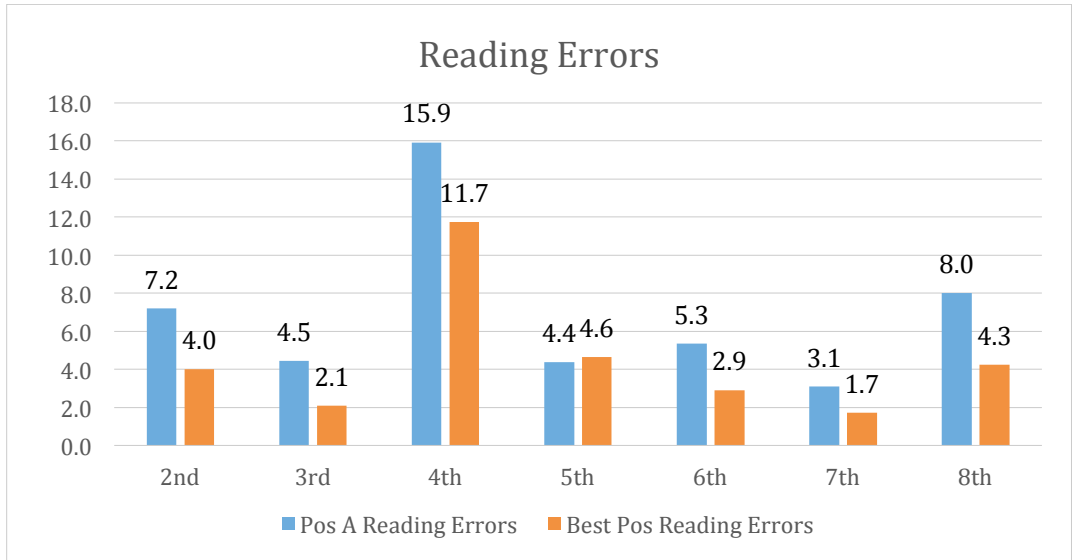
through to position “E” and back. We asked the students if there was a position where the words looked more clear and easier to read than in position “A”. If there was no change then we did not perform a second test. If they found a better position we had them read Form C Oral for their grade level while holding the paper in that position. Again we recorded their errors, kept track of the time and asked them ten comprehension questions.

Prior to this experiment we estimated that somewhere between 15% and 20% of the students would find a better reading position than position “A”. To our surprise 71% of the students stated that there was a better position. 21% chose position “B”, 45% chose position “C” and 5% chose position “D”.

The following data is based on an average of students in each grade level who chose positions B, C, or D as their best position. There are comparisons of Words Per Minute, Reading Errors, Comprehension Errors, and Reading Level as defined by the Ekwall / Shanker Reading Inventory. For each reading passage they use a combination of reading errors and comprehension errors to determine if the grade-level passage was at either the independent, instructional or frustration reading level.







As you can see, the biggest changes occurred in comprehension, which in turn changed the Reading Level. Ten students read assessment A at the Independent level, but in the student's best position, 27 students read at the Independent level. On the other end of the scale, 36 students read assessment A at the Frustration level, but only 9 read at the Frustration level in their best position.

I came across this blog while conducting research on reading position. It is from <http://www.visualedgesb.com/blog/benefits-of-a-slanted-desk/#comment-94025> and sums it up pretty well.

*“Educators figured out a long time ago it is a lot easier to read and write on a slanted surface. It has everything to do with ergonomics. Ergonomics as it relates to reading and writing. When reading you naturally tilt the reading material toward you. It is a more comfortable reading position. This actually puts more of the page in focus at one time reducing the strain on your eyes. It also allows you to more easily track lines and presents the printed characters at a consistence perspective as you read down the page. The result is the brain having to work less on interpreting what it is seeing and allows more analytical resources to understand what has just been read, which leads to less fatigue and better comprehension.*

*Pioneering experiments conducted by Dr. Darrel Boyd Harmon; American Journal of Optometry Archive, American Academy of Optometry 1960 Mar; 37:121-137 and subsequent research by Dr. John Pierce Rev Optometry 1977; 114:48-63 and Dr. Steven Greenspan; Optometry Weekly 1971; 62(33): 754-757, Optometry Weekly 1971; 62(34): 776-780 have shown that there is an integral working relationship between posture, work distance and work surface. Their research has proven that there is improved learning performance when the proper conditions are established for near-point visual activities such as reading and writing. Their studies show that by having your work presented on a sloped work surface, with an angle at between 20 and 23 degrees, sitting no closer than fist to elbow length distance from the work surface, will reduce your heart rate, induce a more regular and deeper breathing pattern, reduce neck muscle and overall body tension. A slanted surface compels your body to sit in a more upright posture. This simple arrangement allows your body to naturally move into what is know as the*

*Harmon Distance. This is the optimal distance from the eyes to the working surface.”*

When I began my teaching career over 30 years ago there was a movement towards cooperative learning and group-work in classrooms. For this we would put four desks together into a table, or just use tables instead of desks. Flat-topped desks helped to facilitate the creation of a table when brought together. Later when I became a principal I purchased flat-topped desks to encourage teachers to use cooperative learning techniques in their classrooms. I believe that now to be a mistake, especially for elementary classrooms, where children are building their foundation of reading and writing and would benefit from a slanted desktop. Even though the slanted desktop is only in position “B” where 21% of the students chose as their best position, it still puts them closer to position “C” that 45% of the students preferred.

So here is where it really gets interesting. The problem is easily correctible. As mentioned previously, many students will find a way to compensate, however, many do not. That is why Dr. Manilla invented a system to help these children read at the desktop level. He uses a two-part system that utilizes a stereoscopic eye exercise that is designed specifically to improve eye muscle strength for people while reading in position “A”. The exercise alone will improve a child’s ability to read, but part two of his system is the truly remarkable invention. Once the eyes have been exercised steadily for one week, the reading method is introduced. Here the child is shown how to find a clear spot similar to what they experienced by

moving the book to a clear area in position D, only this time they find the clear spot while looking down in position A.

The stereoscopic eye exercise, known as “Penny Power™”, has to be completed daily. It is an exercise used to strengthen the muscles surrounding the eye. Just like any exercise, Penny Power has to be completed regularly or the muscles weaken and the reading struggles return. The good news is that it takes less than one minute per day to complete, and has been used to help children as young as age five.

Penny Power leads to a new fixation point while reading. Children are taught how to find this new focusing point and how to hold it while reading. The change in their reading is instant. The one-word-at-a-time reading is gone. They no longer skip over periods, commas and question marks. Their speed and fluency increases, and you can begin to hear a change in the animation of their voice.

The following chart (see figure 2) contains data from French Ford Middle School in Winnemucca, NV. These 6<sup>th</sup> grade special education students were given the Developmental Reading Assessment (DRA) in September then again in December. As posted on the Pearson website, *DRA2 is a valid measurement of accuracy, fluency, and comprehension as evidenced by the following validity measurements: (1) Criterion-Related Validity, (2) Construct Validity, and (3) Content Validity.*

A ten-point gain on the DRA represents one-year's growth. A twenty point gain represents two-year's growth. Keep in mind that this growth came in less than four months, and was gained by students who are in special education due to a learning disability in reading. These students have shown very little to no growth in the past. Their teacher, who was trained in the Reading Vision system, gives the credit to the implementation and continual use of this system by her students.

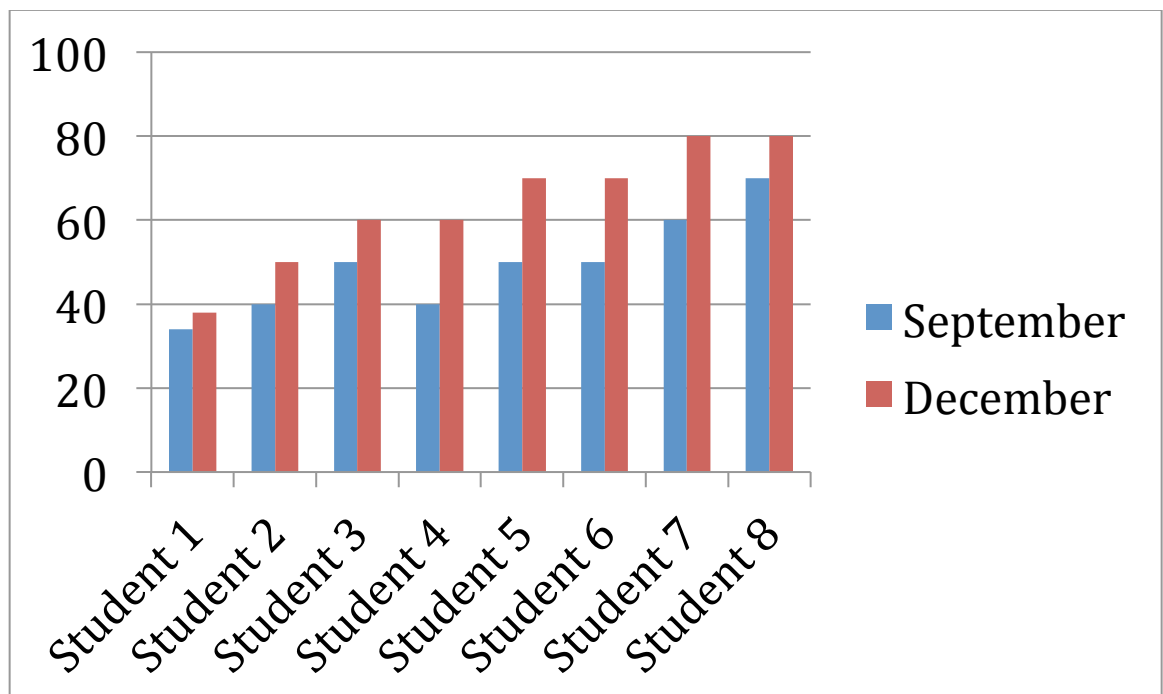


Fig. 2

Once students are able to see the words clearly they catch up quickly with their peers. Their confidence increases and they begin to read books for fun. They are no longer scared to read out loud in class, where they were previously ridiculed by the other students. The Reading Vision system is designed with stealth in mind. The other students don't know that a special system is being used by the dyslexic. It

appears that they are reading normally without any assistance or props, as is the case for those students who are asked to read with colored overlays or special glasses.

The Reading Vision system is easy for teachers to learn and implement. It does not take much time to train the students, and the results are amazing. Teacher evaluations in many states are being partially based on student's growth. For any teacher who can get more than one year's growth out of students during the course of one school year, especially from those who are in special education, an award should be given. For the students who use this system, it is life altering. They can now make it on their own, and the sky is the limit!

Not a visual problem? For more information on the Reading Vision system go to [www.readingvision.net](http://www.readingvision.net).

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