Demystifying Dyslexia: Using Non-Directive Tutoring Practices To Address Neuropsychological Deficiencies in Reading

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Imagine sitting in a university classroom. In order to be there, you must have completed the required coursework, filled out the application, and paid the fee. Everyone else at the university went through the same process to be able to attend classes there. But what happens inside a classroom?

What if, when you sit down to a Professor's lecture, the words make sense, but when you attempt to write them down, your notes do not resemble anything the professor says? What if the words are misspelled to the extent that they no longer resemble the attempted word? What if each time you tried to write a 'd' as your shorthand for definition, it came out as 'b,' which is your shorthand for information from your textbook?

Your breathing speeds up, your palms sweat, and all you can hear is your heartbeat thudding in your ears as your fellow students are frantically writing the important information down, filling page after page, while your notes look nothing like theirs. In fact, you would be grateful for any notes at all, as the more stressed out you get from being unable to copy the information, the less you are even able to hear, thus further confounding your chances of learning the material auditorially.

This problem could be seen to have a few simple solutions. The typical student should bring a tape recorder to class. The student could ask the Professor or another student if he can borrow and make copies of the class notes. And of course, these solutions may work in eliminating the problem of recording notes in class. Unfortunately, however, this remedy does not work for all students.

According to the International Dyslexia Association (2005), learning disabilities affect approximately 15-20% of the population. Of this 15-20% who are dyslexic, 70-80% have major deficits in their reading abilities, which puts them at a major disadvantage, often despite having average to above-average overall intelligence.

Life revolves around written and verbal language, which we use to communicate concepts and desires. The educational system relies on specific levels of achievement in language acquisition, reflected in a teacher's expectations regarding the student's ability to speak, read, and write.

The latter two stages in the language-acquisition process – reading and writing – can cause difficulties for dyslexic students in a classroom setting when the delivery of information utilizes visual and auditory presentations, and especially when the students are tested in a visual-kinesthetic (writing) situation. Dyslexia compounds the already difficult task of reading and writing language by affecting a person's perception of the letters and words; so while the student may be bright in other areas, his grades suffer in language-learning areas. This does not mean the student is not smart; rather, it suggests that the way educational concepts are presented to the student should be altered to fit his learning style. Dyslexic children commonly adopt compensatory techniques of their own device in order to perform at the minimum levels required to earn a passing grade.

Unfortunately, dyslexia is a learning disability for which there is no cure. Children diagnosed with dyslexia do not "outgrow" it; on the contrary, they learn how to outsmart it. Adults who were diagnosed with childhood dyslexia and are enrolled in institutions of higher learning have displayed to some extent a type or types of compensatory technique(s)

that they consciously or unconsciously use while engaging in written language actions.

This thesis delves into neuropsychological aspects of dyslexic reading and writing in adults. It also highlights some compensatory techniques that can be used to help people cope with dyslexic conditions. Supplemental instruction can be sought from a common source of help on a college campus: tutors using the non-directive tutoring method.

While some students suffering from dyslexia can compensate on their own, others need guidance and suggestions with which to tailor their study habits to acquire the most information possible (Gilroy & Miles, 1996). Depending on the type of dyslexia the student may possess, like dyseidetic dyslexia (visual), dysphonetic dyslexia (auditory), or alexic dyslexia (mixed dyseidetic dysphonetic), different compensatory strategies work for different people. This research, however, will focus on mainly dyseidetic dyslexia and its complications in the academic system.

University level academics can be a shock to those students who do not have reading or writing difficulties, but to dyslexics, the task of keeping up with the readings and writing assignments can be daunting. Peer tutors are campus liaisons between the students and the teachers and can help dyslexic students in their struggles with their work. There are two main types of peer tutoring strategies: directive and non-directive strategies. The directive session is tutor-oriented. The tutor takes charge of the session and establishes an agenda (either communicated or hidden from the student). The tutor serves as the principal guiding force for the session, and the concerns of the student, while they may be addressed, they may not be completely addressed. The tutor may answer the question and brush the student's concerns to the side in order to finish what is on the agenda. This tutoring session is not as focused on the student as the non-directive session, nor is it normally focused on how well the student retains information gained (if any at all in the session). An example of a directive tutoring scenario is as follows:

Tutor: "Hi, nice to see you. Please take out a sheet of paper; we will be going over outlining styles today."

Student: "Hi. I think I've got some paper right here."

Tutor: "Ok, now that you have your paper, I'm going to give you this prompt, and I want to see how you go about planning to write for it."

Student: "Ok, but when we get a chance, I had a question about comma usage in a paper I need to turn in."

Tutor: "Ok, let's go ahead and get that out of the way, before we begin with the big task."

Student: (Pointing to the paper) "I need help with this sentence—"

Tutor: (Pulling out a pen) "Yes, I see, you need a comma here" (Marks the comma in for the student). "Now, ok, let's get back to outlining methods…."(Passes the paper back to the student).

While this example could be considered a little extreme, it typifies the kind of learning that often transpires in a "directive" tutoring session. When the emphasis is on correcting mistakes, the student's concerns or special needs are not necessarily the priority. In the case illustrated above, the tutor wrote on the paper, placing the comma in the sentence for the student, and the tutor also neglected to explain why the comma was needed in that particular spot. This type of action reveals a limitation in the directive role as a basis for trying to help dyslexic students (and students in general) overcome writing deficiencies.

In contrast, the "non-directive" tutoring session provides an opportunity for students to assert ownership of their paper. By controlling the session, the students work on what they want to work on, and are also aware that comments made during the session are simply suggestions. Academic ownership

for the paper is stressed—the paper was not written by the tutor, it was written by the student; therefore, the student is the person who should have the final say. The comments that tutors make are merely suggestions, and should be used or discarded depending on the discretion of the writer.

The non-directive tutoring method focuses on the tutor ensuring that the student retains control in the tutoring session. A schedule can be established at the beginning of the session, according to what the student wants to work on. This can be established by having the tutor ask leading questions, such as: "How do you feel about your paper? Were any parts rather difficult to write? How do you feel about your thesis statement (*or insert any specific paper section here*)? Did you have problems citing your sources?" For example, a typical session can be structured as follows:

Tutor: "Hi there, how was your week?"

Student: "Hey, I had a good week…a little stressful with this paper, but I'm getting through it."

Tutor: "Oh yeah? What part of the paper was stressful?"

Student: "This section right here…I just don't feel like it *flows* with the rest of the paper…"

Tutor: "Does the topic of the paragraph match the paper topic?"

Student: "Yes."

Tutor: (with a gentle laugh or inquisitive smile) "Why don't you sound confident?"

Student: "I *guess* it fits…"

Tutor: "Why don't you try this: instead of looking at the paper in its entirety, why don't you break it up into sections? Look at each paragraph and summarize it in a couple of words—one sentence maximum. Once you have done that, compare that sentence to your thesis statement to check to see if your paper is focused. Also, the same trick works for organization, because you can take each sentence and see if they logically progress. Does this sound like something you would be interested in working on?"

Student: "Yeah, I think it will be helpful, but I still have other questions…

Tutor: "Don't worry; after we do this for a couple of paragraphs, to see how it works, we can move on to another topic. Sound good?"

Student: "Yeah, thanks."

When the tutor assumes a less dominating role in the session, the student is encouraged to lead the session, and the tutor provides information according to what the student wants. Information is suggested, not forced, and strategies are formulated so the student can apply the learned information to other writing assignments.

Dyslexia is typically characterized as a developmental reading disability resulting from deficiencies in the magnocellular layers of the lateral geniculate nucleus (lateral means "side," whereas 'geniculate nucleus' is used to denote a visual processing system) in the brain. The brain is a complex organ consisting of many different parts that must work together in order for a person to function. The brain itself can be split up into four different sections or lobes: frontal (forehead), parietal (top of the head and the middle sides), temporal (middle sides, close by the ears), and occipital (the back of the head). Inside the middle of the brain is a small, walnut sized structure called the thalamus. The thalamus is a group of nuclei serving as a sort of "relay station" for all the signals in the brain.

When a person reads, words on the page are seen by the eyes. The eyes take in the visual stimulus, and the information travels from the eyes to the thalamus, which then sends the information to the occipital lobe in the back of the brain where the information is decoded and eventually made sense of. (There are many more steps involved in the processing of visual information before the person becomes aware of the information, but are not directly relevant to understanding the

problems dyslexic people face, so those steps will be omitted).

The thalamus contains three geniculate nuclei (processing systems): the ventral geniculate nucleus, the medial geniculate nucleus, and the lateral geniculate nucleus. The lateral geniculate nucleus is the area that most directly concerns dyslexia because it is composed of about eight cellular layers. There are two major divisions for the layers: magnocellular (M; large cell) layers, and the parvocellular (P; small cell) layers. The M layers functions perceive motion and brightness, while the P layers perceive detail and color. A relatively common deficiency has been detected in the M layers that led scientists in the 1990's to hypothesize (Stein, & Walsh, 1997; Greatrex, & Drasdo, 1995). However, more current research has been attempting to refute this claim (Skottun, 2000; Stuart, McAnally, & Castles, 2001).

While research has yet to specify a particular area in the brain that is the definite cause of dyslexia, it has been established that there is a neurological basis for the reasons why certain compensatory techniques work better than others: "Persistently poor readers…activate posterior reading systems but engage them differently from nonimpaired readers, appearing to rely more on memory-based rather than analytic word identification strategies" (Shaywitz S., Shaywitz, B., Fulbright, Skudlarski, Mencl, Constable, Pugh, Holahan, Marchione, Fletcher, Lyon, & Gore, 2003) .

Because dyslexic readers definitely rely on compensatory techniques to understand the material they encounter, it is imperative they discover what techniques will be most beneficial to them. This process can be done individually, or it can also be done with a peer tutor (Gilroy & Miles, 1996).

Though research has more definitely established that compensatory techniques work better with dyslexics than domination techniques, much work remains to be done to determine which kinds of compensatory techniques work best for which dyslexic weaknesses. Effective compensatory techniques depend on identifying and assessing the dyslexic student's weaknesses as early as possible. A lot is at stake for these students, if only because reading assigned texts and writing papers are central to their academic success (Milne, Hamm, Kirk, & Corballis, 2003). As a developmental disability, dyslexia primarily affects the student's perceptual capabilities. Since most academic work requires visual processing, dyslexic students can find themselves at a significant disadvantage when reading or writing is required of them in college.

Because dyslexia isn't a disease or a passing phase of development, it cannot be cured or outgrown. Those who are able to compensate in order to pass through the mandated educational requirements with enough success to be accepted into college are nonetheless still clearly at a disadvantage. Not only is their lifestyle on the verge of change by the need to establish themselves as part of a new and possibly less accepting learning community, but their learning style is rarely recognized as part of the norm. Thus classes are seldom structured in a format which would be most beneficial to them.

Brenitz and Myeler (2003) have found, in studies on college-level adult dyslexics, that information processing speed is slower for dyslexic students than for students who do not have dyslexia. Other researchers have found that dyslexics often experience "row-blindness," meaning that while reading, they will skip lines or read lines over and over again because the sequential pattern of syntax is something they have trouble perceiving (Lewis, & Frick, 1999). This information is crucial to understanding what is occurring in the dyslexic's brains if weaknesses are to be identified and strategies developed to help compensate for the resulting deficiencies. But theoretical understanding of dyslexia is not

enough. Close observation and intensive research in one-on-one situations will also be required if we are to fine-tune this new area of research.

Early identification can be accomplished by paying specific attention to detail. For example: does the student consistently make one specific kind of mistake? If so, the student is unlikely to be aware of making the mistake. A common experience among most dyslexics is their tendency to work fast, possibly to cover their mistakes while reading. What tends to happen is that only part of the word is being read, resulting in low comprehension. In such cases, students do not recognize individual letters (phonemes) and thus miss the sounds that represent the letters (graphemes); in the process, the meaning of the word itself is completely lost.

This and other dyslexic patterns are in need of much more careful observation and analysis to determine the relationship between the brain dysfunctions and manifestations of the disability in the physical and visual tasks of reading and writing. Current research appears to be heading in this direction with the advent of technological advances. But technological information by itself remains insufficient: one must remember that dyslexia cannot be diagnosed completely, nor can it be compensated for adequately solely by technological means. One-on-one instruction will continue to be a necessary component of the research program, both to assist in the precise diagnosis of individual cases and to teach effective compensational strategies that can be fine-tuned to meet individual needs. More importantly, experimentation based on one-on-one instruction will be required to help further the scientific research currently being conducted.

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Beneath The Surface

I have blond her. Blue eys and an infeckshos smill. Pealple tell mum haw gorgus I am and is ent she looky to have me. But under the surface I live in a tumoyl, words look like surigles and riting storys is a disaster area because of spellings. There were no ply times at my old sckool untill work was finesned wich ment no plytin' at all. Thechers sead I was clevof but just didn'e try. Shouting was the only way the techors ever comunicate ~~with~~ with me. Uther boys made fun of me and so I becka lonly and mishroboll. it was like being on a decert island lost and alone. Life was life and sckoo'l was sckool.

Alexander (age 9)