READING DYSLEXIA: AN EMPIRICAL STUDY FOR LATIN TEACHERS[1]

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I would like to begin my article with a few disclaimers. First, I am not a psychologist or psychometrist. I do not have a degree in psychology or education, and I am not an expert in educational or learning theory. My background is in classics and theology, but I have had a fair amount of experience teaching Latin at all levels, and I have used a fair number of different textbooks. Therefore, please keep in mind that what I have to say, I say purely on the empirical level, and I base my findings on my own experience and partly on my own independent research.

Secondly, I am about to embark upon a topic that in and of itself is controversial: dyslexia. Dyslexia is broadly defined as difficulty in the processing of linguistic and symbolic codes, in making the connections between alphabetic letters and the speech sounds they represent, or in making the connections between numeric symbols and the numbers or quantities they represent.[2] I realize that there are many reasons besides dyslexia that may cause difficulty with language acquisition, such as a brain injury or ADHD. Please keep in mind that for the purposes of this paper, I am using the term "dyslexia" in its broadest possible sense, to refer to difficulty in processing a code, in this case, a linguistic code. In fact, dyslexia has been so broadly defined that even my own state of New Hampshire does not recognize "dyslexia" as a coded learning disability but requires a more specific aspect of dyslexia to qualify a student as learning disabled. For that matter, there is at this time no national standard for the definition of "learning disability" or for "dyslexia." The definitions which do exist vary state by state, and students who do not score in the learning disabled category on a diagnostic test may still be labeled "LD" simply on the hunch of the diagnostician. Just to muddy the waters further, one study proved that the majority of students who, at the college level, receive a foreign language waiver, do not meet LD criteria. Many students who have language acquisition difficulties still manage to pass foreign language courses (albeit with great difficulty) and receive grades not unlike students with no diagnosed learning disability.[3]

So, I am sure that by now you are a bit skeptical, as was I when I first encountered a student wanting a language exemption. Before coming to Dartmouth College, I had taught Latin at Plymouth State University for six years. PSU does have a language waiver for students who prove they are learning disabled with regard to foreign languages. The acronym for this disability is L2LD, and I shall use it throughout this paper. I am not advocating that there is a specific learning disability when it comes to foreign languages. I agree with Dr. Richard Sparks, a leading authority on dyslexia and learning disabilities, who points out that learning disabilities exist along a broad continuum, with difficulty in learning a foreign language one of many aspects of being learning disabled.[4] I am referring to my findings as an L2LD simply because I only have experience with learning disabilities within the area of foreign languages. That being said, while the foreign language waiver did exist during my years at PSU, it was not utilized by the students nor was it widely advertised to the faculty. In fact, in six years, I had only one student come to me with this request, and I still remain skeptical, as the student rarely came to class or did the course work.

Mind you, not all my students at Dartmouth College were stellar; I did have the occasional student who, like my above-mentioned PSU student, seemed to go AWOL, but that was truly the exception and not the rule. So, at Dartmouth, when I began to receive quizzes with bizarre answers and test scores well below the class average, I was truly baffled. How could anyone who comes to class and does the homework perform at such a sub-standard level or make the extremely odd mistakes these students were making? The students were extremely frustrated as well. They had done well in all their other courses at Dartmouth, and many of the students were seniors. They had even done well in their high school Spanish or French classes, so I asked them why they were taking Latin and not building on the Spanish or French they had had in high school. They replied that they had tried Spanish or French at Dartmouth, but had done poorly. Some took the "C"; others dropped the class to avoid the hit on their GPAs. And that is when my own suspicions began to grow. I concluded that these students must have some kind of a language acquisition problem, and no one had ever diagnosed it. These students were extremely intelligent, and, on the continuum of learning disabilities, they were almost off the chart in their ability to function. It was only under the extremely rigorous demands of a foreign language class that they found their limitations, and, when pushed to excel at the speed of light, they simply could not keep up. I recommended to these students that they be tested for a language exemption. These students had to find a psychiatrist and pay for the testing at their own expense; yet, almost every student I recommended to be tested qualified for a language exemption.

So why is it that no one caught these learning problems any earlier? As I reflected upon this question, I realized that the primary difference between the Dartmouth Latin course and the PSU Latin course was the rapid pace of instruction. I used the same textbook at PSU, *Wheelock's Latin*, which I used at Dartmouth. However, I was lucky to cover 23 chapters in 30 weeks at PSU, and I covered 24 chapters in just 10 weeks at Dartmouth. This is partly why I believe I encountered the need for language waivers so early in my career at Dartmouth. Dartmouth students who qualified for the language waiver could not keep up with the pace of the course. Moreover, I realized my students with language acquisition problems made unique mistakes. Based upon these mistakes, I think that I have pegged some of the symptoms of an L2LD, at least as it pertains to Latin, to which other teachers may not be attuned. What follows are some of my findings and how I learned to read the mistakes my dyslexic students made.

In addition to the inability to keep up with the pace of the class, a major clue that a student may have an L2LD is a confusion of categories. For example, students put verb endings on nouns or declension endings on verbs. Consider this example of the declension of *is, ea, id.*

is	*ea*	*id*
isius	*eius*	*idius*
isit	*easit*	*idit*
isiam	*eam*	*idam*
isiat	*eat*	*idimos*
e	*eas*	*ea*
earum	*eorum*	*earum*
earunt	*earunt*	*eastis*
ea	---------	-------
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Here the student begins pretty well, but as it all falls apart, the student begins putting verb endings on the pronoun. I would argue that a more "main line" mistake would be to decline *is, ea, id* like a third (or first or second) declension noun. *Idit* is in the right place if this were a third person singular verb. *Idimos* shows vestiges of Spanish, not an uncommon mistake, but this is not a verb conjugation.

Here is a quiz from the same student, but this time I assigned a first declension noun. Note the *vitamus* just out of the blue.

vita	*vitae*
vitae	*vitamus*
vitae	*vitis*
vitam	*vitas*
vita	*vitas*

The following mistake is from a student I had several years ago when I taught high school. This student was diagnosed dyslexic. Look at his *in solamus* for *in insula sumus*. This student merged a noun and a verb when asked to translate two English sentences into Latin.

Where are we? We are on an island.
Ubi sumus? In solamus.

Dyslexic students also have difficulty discriminating between similar words. Words that begin with the same letters and have approximately the same length can be particularly challenging for dyslexic students. I become concerned when I see students consistently confusing *periculum* and *pecunia*, *duco* and *dico*, *dulcis* and *dux*, *et* and *est*.

I have found that dyslexic students may also confuse the English words "imperative" and "imperfect," often giving a correct imperfect conjugation of a verb when the test asked for the imperatives. I believe this is because the English words "imperative" and "imperfect" look very similar in form.

Which brings me to my next point. Dyslexic students can have extreme difficulty in learning and understanding grammatical labels in general. Even understanding the parts of speech can be tremendously difficult. For example, dyslexic students continually try to give gender to adverbs and prepositions. Consider these actual quiz answers:

	gen. sing.	**gender**	**translation**
caput	*capitis*	M	head, leader
de	*de*	F	down
femina	*feminae*	F	woman
Bene	--------	M	well
Autem	--------	F	however

I do have students make this mistake in the beginning of Latin, but once I give my speech that only nouns, adjectives, and pronouns have gender and decline, then this kind of mistake does not usually occur again. Dyslexic students, however, seem to have great difficulty in understanding the difference between a preposition and, for example, an adverb. Such confusion can make learning a language very difficult, as prepositions can be structural in nature, delineating an entire prepositional phrase. Also, consider the construction of the ablative of time, which is adverbial. Dyslexic students can have a devil of a time understanding that now a noun (e.g. *die*) is acting as an adverb. Note that these quiz answers are from a quiz a student took four weeks into a ten-week term, or roughly half way through the course, and the student is still trying to give adverbs and prepositions gender.

In the next example, a student is trying to give voice, person, and number to an adjective, although I have clearly asked on the quiz to give gender, number, and case.

***Magnus*: gender, number, case, why?**
Nominative, masculine, singular, active, no person or #

This student has confused person with case. This kind of confusion of categories as they relate to grammatical labels I find happens consistently to a student I suspect of being dyslexic. Here is yet another example:

Give the case and number of the following nouns and adjectives:

Dierum	3rd	pl
Toti	2nd	sing
Senatuum	3rd	pl
Pericula	3rd	sing

The culminating clue I see is a difficulty in the transference of knowledge. Consider this example:

Identify the tense sign (if any) and personal ending of each of the following conjugated verbs:

	Stem	**tense sign**	**ending**
Navigabis	*naviga*	*bi*	*s*
Scribebamus	*scribe*	*ba*	*mus*
Habetis	*habe*		*tis*
Incepi	*incep*		*i*

Note that the student can separate the parts of the verb very well. Clearly, this student has a good understanding of the Latin verb. Now look at this, on the front page of the same quiz:

Rewrite the following sentence, changing "medicus" to "medici" and making all other necessary changes.

Medicus ipse totam veritatem ore suo dixit.
Medici ipse totam veritatem ore suo dixint.

Although there are many errors in her sentence, the one that caught my eye was *dixint*. Clearly, based on her past work and quizzes, the student knows the form *dixerunt*; she just cannot seem to transfer that knowledge to another sentence or be able to generate the form on her own.

This student was good at declining and conjugating but had tremendous difficulty transferring that skill to sentences. Look at how well she does here.

Give the mood, voice, tense, person, and number for the following verbs:

	mood	**voice**	**tense**	**person**	**number**
ducis	ind.	Active	present	2nd	sing.
agemus	ind.	Active	future	1st	pl.
habebitis	ind.	Active	future	2nd	pl.
dic	imp.	Active	present	2nd	sing.
gerunt	ind.	Active	present	3rd	pl.

Clearly, this student knows the verb forms at sight. On other quizzes, she could also successfully decline nouns and adjectives. Yet, consider this translation that she did almost one month later.

> ***Venit iam magna aetas nova; de caelo mittitur puer, qui vitam deorum habebit deosque videbit et ipse videbitur ab illis. Hic puer eget mundum cui virtutes patris pacem dederunt. Pauca mala, autem, remanebunt, quae homines iubebunt laborare atque bellum asperum gerere. Erunt etiam altera bella atque iterum ad Troiam magnus mittetur Achilles.***
>
> He goes to the great new place. Down from death he sent the boy whose life he had (*deosque*) and watched and viewed these things. That boy missed (*mundum*) whose virtues bad given the country peace. The girl, however, remained. What human had live with labor from the difficult war.

This student has all the pieces but cannot seem to put them together. She appears to know her vocabulary, but, despite her ability to conjugate and decline as a separate task, she cannot transfer that knowledge to a passage of Latin. She translates the Latin from left to right, paying little attention to cases. She pays virtually no attention to the tense and person of verbs, although she has proved her knowledge in that area.

Richard Sparks and Leonore Ganschow point to this lack of integration as part of their Linguistic Coding Differences Hypothesis. In this hypothesis, Sparks delineates three skills students must have in order to learn a foreign language. They are phonological coding skills, or how a word sounds to the ear; syntactic coding skills, or how to put words together within the language to form a coherent thought; and semantic coding skills, or how to spell or recognize the meanings of words within a language.[5] Of the three skills, the semantic code, or understanding the meaning of the word, is the least important. The phonological coding skill, however, is the most important area of processing, according to Sparks. A dyslexic student has extreme difficulty recognizing the phonemes, or sounds, in words. They also lack an ability to divide words into syllables or to predict pronunciation of new words. For example, dyslexic students have difficulty with repeating made up words, as well as with turning English phrases into pig-Latin. Since Latin teachers do not typically assess students' speaking ability, dyslexic students have historically flocked to it, as this language does not present the phonological challenges living languages do.[6]

Latin does, however, demand a good syntactic coding ability. The syntactic coding skill allows one to manage the syntax of a language, or to understand how the language is grammatically structured. Syntactic coding ability allows a student to analyze a sentence, to understand which is the subject, the verb, the direct object, and how the language strings these forms together in order to form a coherent statement. As I have shown you today through my examples, it is this skill dyslexic students seem to lack. Consider the student's translation above. This student appears to have the correct semantic code; she knows what the words mean. She seems to lack, however, the syntactic ability to put everything together and translate the sentence. It is, I believe, the dyslexic student's lack of a syntactic coding ability that leads to his or her tremendous confusion within the Latin language. Dyslexic students have difficulty understanding the fundamental components of a sentence because they confuse so many categories. They also seem to confuse practically everything: grammatical categories (verb ending vs. noun ending), grammatical labels (preposition vs. noun), and similar words. Therefore, the students are left with all the pieces

1st principal part	**2nd principal part**	**3rd principal part**	**4th principal part**	**Conjugation #**	**Meaning in English**
Peto	*Petare*	*Petivi*	*Petum*	1	To hope for
Tollo	*Tollere*	*Sustuli*	*Stum*	3	To raise up
Careo	*Carare*	*Carui*	*Caritum*	3	To trust, believe
Delecto	*Delactere*	*Delectui*	*Delectum*	1	To delete
Paro	*Parare*	*Paravi*	*Paritum*	1	To partake
Lego	*Legare*	*Legavi*	*Legitum*	1	To let go
Incipio	*Incipere*	*Incepui*	*Inceptum*	3	To intake
Mitto	*Mittere*	*Missi*	*Missum*	3	To loose
Timeo	*Timare*	*Timui*		4	To fear
Vito	*Vitare*	*Visi*	*Vitum*	3	To hide
Defendo	*Defendere*	*Defendui*	*Defenditos*	2	To defend
Sto	*Stare*	*Steti*	*Statum*	3	To hope for
Video	*Videre*	*Vi*	*Videtum*	3	To see
Neglego	*Neglectare*	*Neglexi*	*Neglictum*	3	To neglect
Rego	*Regare*	*Rexi*	*Rectum*	1	To rule

of the puzzle (the words themselves), but, in their case, the pieces all seem alike and somewhat random and have no apparent order. This overall syntactic confusion seems to have a snowball effect, and the student's performance continues to spiral downward with little or no improvements. Quite literally, it seems that the more dyslexic students "learn," the less they are able to "do."

The chart on the bottom of the previous page is an example from a final exam written by a student who was later diagnosed as dyslexic. The exam was six pages long. The first four pages consisted of declining nouns and adjectives and conjugating verbs. He did fairly well on those pages, and it was clear to me that the student had studied for this exam. This student also diligently came to every class and did all the homework. Yet consider page five, where he is asked to supply the principal parts and meanings of various verbs. I believe the errors on this chart occurred because there were simply too many similar words for him to master. He confused the perfect tenses of *vito* and *video*, in addition to having difficulty sorting the conjugation numbers and understanding the patterning that occurs in the first and second conjugations. Note, however, that this test is not left blank, and this is a very important point. I have found that dyslexic students rarely, if ever, leave anything blank. Dyslexic students are working very, very hard on their class work. They are not guessing; they truly believe they have an answer to give.

Ironically, it is the students' diligence and extreme effort that often place me in a morally ambiguous position. Because I see certain students struggling so, I try very hard to help them in any way I can. Often, this simply means giving them extra time for quizzes and exams, extra time which I would be required to give if the student had an IEP. Fortunately, I am in a position to do this. Because questions of fairness arise, I have made it my policy to give all students extra time; students may arrive to class early and start the quiz whenever they like. In fact, one student whose work I showed you today took five hours to complete a two-hour final exam. She made a 92% on it. Do I think she would have scored that well otherwise? No. And, in the interest of fairness, I did allow my entire class to take up to five hours on that test, and I found that everyone else turned in their tests after about 2.5 hours. I would also like to point out that there have been no studies regarding the time it should take one to learn a language or to take a language exam.[7]

I am also deeply frustrated by the fact that I know my dyslexic students are highly capable of learning Latin; they just need more time overall and different teaching methods. Unfortunately, these methods can be extremely time-consuming and, therefore, impossible for me to implement consistently in my class. I do employ as many kinetic methods as possible. I act out the meanings of vocabulary words. I also am careful to conjugate verbs on one side of the board and decline nouns on the other side of the board. When we learn the third and fourth conjugations, I physically jump back and forth, from one side of the board, containing verbs of the first and second conjugations, to the other side of the board, containing verbs of the third and fourth conjugations, in order to emphasize the different "families" to which these verbs belong. I have students bounce a ball as they decline nouns and conjugate verbs. I use different colored chalk for nouns and verbs, and, whenever I can, I put verb endings in a different color than the verb stem. I use mnemonic devices, giving my students rhymes and jingles I have learned from middle school teachers. And I do a great deal of singing. I sing conjugations and declensions whenever possible, as the part of the brain that processes music differs from that which processes language. But all these methods can take a great amount of additional time, especially in an intensive language course, and these methods alone are certainly not enough to teach a truly L2LD student.

I meet with students I suspect of having an L2LD and discuss various strategies for them to employ on their own during their lengthy testing period, for it can take up to eight weeks to go through the interviews and testing required to obtain a language exemption. In the meantime, the students must stay in my class, so I help them organize their flashcards, placing verbs in one pile and nouns in another. I encourage them to color code their cards by parts of speech (which I check for them) and arrange their cards alphabetically. There are, of course, no guarantees these students will, indeed, obtain an exemption. Therefore, the students carry the added anxiety of needing to perform well, just in case they do not obtain an exemption. As I mentioned in the beginning of my paper, most students I send to be tested do get an exemption, but not all do. In fact, one student, whose work I included in this paper, did not qualify for an exemption, although the battery of tests did discover that she has some difficulties with language acquisition. I would like to remind you that, as I stated in the beginning of my paper, there is still no national standard for the definition of dyslexia or for the term "learning disability."

Furthermore, the idea of a language exemption itself often places me in a difficult position. For example, I had one student who was reluctant to go through with the testing for fear she would be labeled "learning disabled" and that such a label could jeopardize her future political career. I have also had a student, whose work I showed you today, find the cost of testing to be prohibitive. I am, therefore, left with a student I deeply believe to have language acquisition problems, yet no "paperwork" to back up my theory. Moreover, this student needed to take Latin (and to do fairly well in it) in order to major in her love—classical studies— and to go to Rome on a study abroad program.

My goal in teaching Latin is simply to impart my love for the language to others. I know that I may, at most, inspire 20% of my class to major in classics. But I want 100% of my class to say, "I took Latin, and, you know, I really liked it." Sometimes this can be the hardest goal to achieve, particularly when a student is struggling so and is barely passing the course. I had one student look at me with tears in her eyes and say, "It's just so hard for me, Mrs. Loud." All I could do is reply, "I know." During one quarter at Dartmouth, the IT specialist came to my classroom each morning and booted the computer for the day. We often chatted as he was working. One day he mentioned to me the difficulty his wife was having in a math course she was taking, and so I began to tell him about my interest in language acquisition difficulty. He commented, "You know, it's strange. It's like the boat is going down the river, and some just fall through the cracks." I replied, "Yes, but I am trying to throw life vests to everyone I can."

ENDNOTES

[1]I would like to express my deepest thanks to my many former students who graciously gave me written permission to cite their work anonymously in this paper. I would also like to express my deepest thanks to Professor Barbara Hill of The University of Colorado at Boulder, who gave me both wonderful insight into language acquisition disorders and support in my research.

[2]Please see the website of the International Dyslexia Association (IDA) *http://www.interdys.org/FAQWhatIs.htm*. For an excellent break-down of the IDA definition, please see *http://www.region10.org/dyslexia/Dyslexia-Definition.html*. The Region 10 Education Service Center is located in Richardson, Texas and serves school districts in that area.

[3]Richard L. Sparks and James Javorsky, "Section 514 and the Americans with Disabilities Act: Accommodating the Learning Disabled Student in the Foreign Language Curriculum (An Update)," *Foreign Language Annals* 33.6 (November/ December 2000): 645–54.

[4]Richard L. Sparks, "Is There a 'Disability' for Learning a Foreign Language?" *Journal of Learning Disabilities* 39.6 (November/ December 2006): 545.

[5]Richard L. Sparks, "Examining the Linguistic Coding Differences Hypothesis to Explain Individual Differences in Foreign Language Learning," *Annals of Dyslexia* 45 (1995): 190. For another excellent examination of this topic, see Charlann S. Simon, "Dyslexia and Learning a Foreign Language: A Personal Experience," *Annals of Dyslexia* 50 (2000): 155–88.

[6]I encountered a stark example of this a few years ago. A local private school hired me to tutor a student having difficulty with the passive voice in Latin. The student and I began with examples of the passive voice in English. I said a simple English sentence, e.g. "John hit me," and then asked the student to put the sentence into the passive voice. No matter how long we tried, no matter how simple the sentence, the student simply could not transform the sentence. Even when written, the student could not change the voice of the sentence *in English.* No wonder the student struggled in Latin!

[7]Sparks (2006) 553.

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