

Why and How Students Differ in Their Ability to Learn Latin and What We Can Do About It

Barbara Hill
Program Coordinator
Modified Foreign Language Program
University of Colorado at Boulder
Barbara.Hill@colorado.edu

Latin teachers strive diligently to find effective ways to teach their beloved ancient language to today's students, and most become occasionally bewildered by the difficulties some students experience while trying to learn. This paper hopes to assist teachers by identifying the complexities of learning Latin or any other foreign language, detailing specific reasons why our students differ in ability to learn, and suggesting strategies we teachers can employ to bolster student learning, especially for weaker students.

As an accompaniment to this paper, I have provided an annotated bibliography of selected, informative articles and chapters. Any author or text mentioned in the following text has a complete listing on this bibliography along with additional comment.

Let's begin by looking at the Latin language as an entity. Like all languages, Latin is complicated. It consists of the following five components: phonology, semantics, morphology, syntax, and pragmatics. **Phonology** is the sound system of the language--the sounds of its vowels, consonants, syllables, and words. **Semantics** consists of the meanings of words and phrases and includes idioms. **Morphology** includes word forms, specifically noun, pronoun, and adjective declensions and verb conjugations. **Syntax** is the arrangement of words in sentences, word order, grammar rules, and rules of tense and mood. **Pragmatics** includes the rules of language usage necessary for communication.

Students of Latin and all other languages, therefore, must learn myriad items within each of these five components, learn how these items coordinate with other items within a particular component, and then figure out how the various components correlate with one another to achieve meaning. This is a truly immense challenge for learners, many of whom are

unfamiliar not only with the individual items, but also with the terms we teachers use to describe them. How many students, for example, really understand what we mean when we use such terms as “direct object”, “subject complement”, “passive voice” or even “active voice”?

Languages, moreover, differ among themselves in complexity and difficulty. In her chapter “Foreign language acquisition and language-based learning disabilities” (2002), Elena Grigorenko provides an excellent analysis of the four ways in which languages differ in difficulty for learners. These four ways are phoneme-grapheme correspondence, grapheme-phoneme correspondence, morphological complexity, and grammatical differences. Grigorenko does not mention Latin, but we can analyze Latin on our own. Latin is relatively simple in the area of **phoneme-grapheme** correspondence because it has a high degree of consistency between single sounds and single letters. It is also easy in **grapheme-phoneme** correspondence since both Latin and English employ the Roman alphabet. Latin’s morphological complexity and grammatical complexity, however, are difficult. In the area of **morphological complexity**, Latin achieves its “difficult” status because of the average number of morphemes per word and the number of its noun, pronoun, and adjective declensions and verb conjugations. In addition, such syntactic components of sentences as word order, word agreement, and clausal links render the **grammatical differences** between Latin and English more challenging for learners.

One important implication of Grigorenko’s analysis of differences in difficulty among various languages is that individuals who have severe problems learning one language will have similar troubles learning any language. It is helpful, however, for teachers to be aware of the particular areas in languages likely to cause trouble for learners and prepare for challenges in these areas.

Languages on their own are complicated enough, but everything becomes far more complex when we factor in the workings of the human brain as it undertakes the task of learning a new language, for each learner brings a unique set of cognitive processing skills to the classroom. Before we look closely at these variables, however, it is crucial to establish two points. First, we must eliminate IQ from great significance in language learning. One set of researchers, Richard Sparks and his team, plus numerous others, has tested extensively and has discounted the correlation

between learners' IQ and their foreign language aptitude. Some people with low IQ's learn FL's easily and well, and some with high IQ's struggle mightily. Second, we **can** test and identify individual language aptitude skills, mostly by means of standardized language tests, and research conducted on foreign language learning in the past forty years or more shows that people's language learning skills range on a continuum from very good to very poor, with most learners, including our Latin students, sitting in the middle or in the "average" category.

Research into cognitive variables in second language learning continues to proliferate, and this paper will focus upon four general reasons for foreign language learning differences, which have been identified by scholars. These causes are phonological processing ability, working memory, phonological working memory, and semantic processing ability.

Research shows that **phonological processing** is the primary and fundamental reason for differences in foreign language aptitude, and phonological processing is separate from IQ. Good phonological processors learn second or third languages easily while poor phonological processors struggle and are apt to fall far behind in language acquisition. For information about the importance of phonological processing, consult Richard Sparks' "Examining the Linguistic Coding Differences Hypothesis to Explain Individual Differences in Foreign Language Learning" (1995). Sparks and his colleagues label components of language "codes", and Sparks provides an excellent description of the fundamental reasons why learners experience break-downs when trying to learn a new language. For the most part, they have problems with the phonological code of a language, specifically phonemic awareness and general processing of the sound system. Weak learners cannot perceive accurately, remember correctly, or reproduce adequately strings of sounds they have just heard. They are thus forced to continually rememorize the information, which more adept learners acquire quickly.

Phonological processing is a component of **working memory**, and Akira Miyake and Naomi Friedman focus upon working memory and its role in language acquisition in "Individual Differences in Second Language Proficiency: Working Memory as Language Aptitude" (1998). These authors help explain why some learners have great trouble dealing with syntax. A quote, "The linearity of language necessitates temporarily storing the

intermediate and final products as a reader or a listener constructs and integrates ideas from the stream of successive words in a text or spoken discourse” (p. 341) not only explains the importance of working memory but also invites the reader of this sentence to assess his/her capacity in this area. If, furthermore, one overloads resources available in working memory, he/she experiences processing slowdowns and loss of information. Working memory is particularly important in processing syntax and dealing with ambiguities.

Another article, which examines the importance of a crucial area within phonological processing ability, is “Phonological Short-Term Memory and Foreign Language Learning” (1998) by Susan Gathercole and Annabel Thorn on the topic of **phonological memory**. Gathercole and Thorn do a nice job of explicating the theory originally developed by Alan Baddeley that the capacity of one’s “**phonological loop**” is highly responsible for language learning. The phonological loop is a component of working memory and is responsible for temporarily storing the representation of a new sound pattern. The temporary storage converts to long-term storage or long-term memory when one learns language, but if an individual has poor phonological loop capacity, he/she can neither store new information accurately nor convert it to long-term memory. The learner, therefore, cannot recall or reproduce that information.

Semantic processing ability is a fourth cause of learning differences, and it, along with syntactic processing problems, which were discussed briefly above under the topic of “working memory”, can have a negative impact upon language during one’s second year of study. Charlann Simon, who provides an excellent overview of causes of difficulties and suggestions for students and teachers as well in “Dyslexia and Learning a Foreign Language: A Personal Experience” (2000), explains that “Semantic coding difficulties affect vocabulary knowledge and word retrieval, semantic referencing of noun/pronoun relationships or synonyms, understanding of multiple-meaning words, inferences, understanding and use of cohesive ties, and management of both narrative and expository language formats” (pp. 175-6).

For a short, thorough overview of the history of research into the cognitive causes of foreign language learning problems and a comprehensive account of lines of recent research, plus findings, please consult

Grigorenko's chapter in *Individual Differences and Instructed Language Learning*, which was mentioned earlier. Grigorenko discusses research into such areas as speech perception, speech production, memory (including short-term, long-term and verbal memory), phonological deficits (including verbal naming deficits, repetition, and phonological awareness) morphological awareness, syntactic awareness, and comprehension and conveys a true wealth of up-to-date information.

Additional articles on the annotated bibliography that focus upon phonological processing but also add more information about teaching techniques are articles by Charlann Simon, mentioned previously, and those by Richard Sparks and his team. Sparks and his colleagues investigated the impact of phonology-based intervention (specifically the Orton-Gillingham method of teaching the sounds of a target language and their written representation). In both the Spanish and Latin classes they observed, explicit, systematic instruction in phonology had positive effects upon students with learning disabilities, and improvements were observed in foreign language aptitude, native language phonological processing ability, and ability to spell correctly. Another article "College Students with LLD: The Phonological Core as Risk for Failure in Foreign Language Classes" (2000) by my colleagues at the University of Colorado at Boulder, Doris Downey and Lynn Snyder, describes our innovative Modified Foreign Language Program. This program counsels, tests, and teaches students with diagnosed language learning disabilities and others without diagnosis, all of whom suffer severe difficulties in traditional foreign language classes, and none of whom are automatically waived from their foreign language requirement of three consecutive semesters of foreign language for graduation from the University of Colorado at Boulder, if, that is, they have not completed three consecutive years of a single foreign language in high school. It describes the battery of foreign language aptitude tests used to ascertain whether struggling students should enroll in one of the language sequences offered by the program or whether they would be better served by taking alternative courses taught in English.

The Modified Foreign Language Program has been in existence at the University of Colorado at Boulder for fifteen years now, and we have offered classes in Latin, Italian, and Spanish. A great benefit of the program has been its focus upon successful teaching strategies, which has paid dividends for all of the teachers and departments involved in this endeavor.

It is our firm belief that techniques, which benefit students with learning problems, benefit all students in foreign language classes. They are, in effect, best practices in education.

The concluding section of this paper will examine those “best practices” and will offer a number of suggestions to Latin teachers as they try to accommodate the needs of students with learning problems. These suggestions are culled from a number of sources, including our experiences in the Modified Foreign Language program at the University of Colorado at Boulder. As mentioned earlier, several of the articles and chapters on the annotated bibliography offer teaching advice. Most valuable is Althea Ashe’s chapter “Latin for Special Needs Students: Meeting the Challenge of Students with Learning Disabilities” in Richard A. LaFleur, ed., *Latin for the 21st Century* (2000).

An important initial point is that all Latin classes benefit from a high degree of overall organization. When the teacher is aware of the “big picture” of course content and is able to identify at all times the point at which the class stands, what has come before, and where the class is going next, students feel more secure. All students, especially those for whom language is difficult, need teachers to strategize for them. Teachers must provide the structure and learning prompts, which challenged learners cannot themselves provide.

One of the documents accompanying this paper is a list of 25 techniques for **Teaching Foreign Languages to Students with Learning Difficulties**. Item number one is fundamental. Multisensory teaching, or allowing students to see, hear, say, and write or work with a new item, causes students to process new information by means other than phonological processing. While using a multisensory approach, the teacher slows the presentation of new material, which permits students to proceed more slowly and check sound/symbol correlation for better learning.

For your convenience, a complete list of possible strategies follows:

1. Use a multi-sensory approach. Assist your students to:
 - see;
 - hear;
 - say;

- write/work with the language.
2. Teach the sound system of Latin explicitly and systematically.
 3. Show the correspondence between the sounds of Latin and its written representation.
 4. Give your students the opportunity to speak the language in class, often allowing “group responses” so weaker students do not feel singled out.
 5. Use dictation of assignments, quizzes, or tests.
 6. Organize your classes so that you know what you hope to accomplish day by day, chapter by chapter, and week by week so you can communicate this information, often in writing, to students.
 7. Provide visible structure to student learning. Use vocabulary and morphology grids to help students comprehend and remember word forms.
 8. Allow lag time for students answering questions.
 9. Allow students to ask questions.
 10. Train students explicitly in syntactic or grammatical rules and their operation so they can better understand mechanics and ask questions if necessary.
 11. Teach methods of Latin acquisition as well as content. You may, for example, require a Latin notebook in which students record vocabulary, notes, and assignments.
 12. Break longer words, phrases, and sentences in component parts for easier understanding of complex words and structures.
 13. Build review into presentations of new items. Place a new grammar item into appropriate category and review all previously learned items in the category before introducing the new one.
 14. Keep explanations simple and short. Students “burn out” if teachers talk too long. Use a minimum of examples before setting students to work on their own.
 15. Give directions carefully, possibly by printing them at the top of a handout and by giving a printed example.
 16. Do not assign exercises of readings in your text, which are too difficult and result in too high an error rate unless you support student effort with additional information.

17. Help students manage difficult assignments by coordinating vocabulary, morphology, and notes with the assignment.
18. Give students space to work on handouts, quizzes, and tests.
19. Collect assignments. Provide feedback as quickly as possible.
20. Give students some credit on quizzes or tests for work accomplished at home ahead of time.
21. Pay attention to such affective issues as anxiety.
22. Use pre-quizzes and pre-tests to help students prepare for quizzes and exams. Give students a preliminary version of a quiz or test, and ask them to fill it out as a review assignment. Ask the students to analyze their mistakes on the preliminary version. The quiz or test follows the same format but have different questions.
23. Allow extended time or a separate setting for severely compromised students.
24. If your tests exhaust the resources of some of your students, allow them to take parts of the test at different times. Students, for example, can take a vocabulary section early or a sight translation section late.
25. Allow grading accommodations in some circumstances. If a student demonstrates particularly severe weakness in one area, lessen the value of the section of the test, which tests that weakness.

The final word of advice is “Be flexible”. Students can often help their teachers identify teaching techniques that help them individually, and the work a teacher does with one struggling student may bring benefits when working with another. On the other hand, the next student who comes along may be very different, and a teacher may be inspired to develop other measures. Whatever one does, please remember that there is no single “magic bullet” that makes weak students learn foreign language, but all of these techniques plus others you may figure out are conducive to the success of the weaker learners and simultaneously beneficial to teaching expertise.

Why Learners Differ in their Ability to Acquire Foreign Language and Strategies to Assist Learning for All Students: An Annotated Bibliography of Selected Works

1. Ashe, Althea, C., 1997. "Latin for Special Needs Students: Meeting the Challenge of Students with Learning Disabilities", pp. 237-250 in Richard A. LaFleur, ed., *Latin for the 21st Century*, Glenview, IL: Scott-Foresman-AddisonWesley.

Ashe delineates the reasons why teachers are obligated to provide accommodations for students with learning disabilities and concludes that "Latin may be the best (FL) choice for these students". She describes the development, structure, and management of a three-semester sequence of Latin classes designed primarily for students with LD's, which she introduced at Louisiana State University. An outstanding feature of this article is the author's description of numerous effective organizational and instructional strategies she uses when teaching students with FL learning problems. These strategies include response journals, daily "road maps", accountability logs, a multi-sensory approach to instruction, management of vocabulary, noun and verb paradigm charts, testing accommodations, and translation help.

2. Downey, Doris M. and Lynn E. Snyder, 2000. "College Students with LLD: The Phonological Core as Risk for Failure in Foreign Language Classes," *Topics in Language Disorders*, 21 (1):82-92.

This article, written by principals in the Center for Language and Learning at the University of Colorado at Boulder, explains the innovative Modified Foreign Language (MFL) Program it offers for university students with language learning disabilities (LLD) and students otherwise at-risk for failure in traditional FL classes. These researchers support the hypothesis of phonological processing problems as the root cause of FL learning deficits and describe the battery of tests they employ to identify aptitude for FL learning in individual students. The MFL program offers self-contained classes for eligible students, and characteristics of these highly successful classes include controlled enrollment, limited class size (15-16 students), specially selected instructors, who teach the entire three semester sequence of classes, free mandatory tutoring, an encouraging, safe classroom environment, extensive preparation for quizzes and tests, and extra time on tests. Teaching techniques emphasize the combination of auditory learning with visual and kinesthetic learning and direct, explicit instruction in the phonology and orthography of the sound-symbol system of the target language.

3. Gathercole, Susan E. and Annabel S. C. Thorn, 1998. "Phonological Short-Term Memory and Foreign Language Learning", pp. 141-158, in Healy, A. F. and Bourne, L. E. Jr., *Foreign Language Learning: Psycholinguistic Studies on Training and Retention*, Mahwah, N.J.: L. Erlbaum Associates.

This article offers a good discussion of the "phonological loop", the component of working memory originally identified by Alan Baddeley, which is responsible for temporarily storing verbal information. The "temporary representation of a new sound pattern in the phonological loop provides the basis for the construction of the phonology of a new word ...". In this way, phonological loop capacity plays a crucial role in supporting vocabulary acquisition in both native and foreign language. In one's native language, knowledge of such characteristics as the typical distribution of phonological structures, its pool of phonemes, and its phonotactic rules for combining phonemes assists the phonological loop to foster language acquisition. These benefits are far less likely to occur in second language acquisition. Individual differences in phonological loop capacity can be assessed by testing digit span, the maximum number of digits an individual can recall in the order presented and by non-word repetition. People with good skills in these two areas perform better at learning the phonological forms of new words than do those with poorer skills, and learners with specific language impairment (SLI) experience particular difficulty. It is important for teachers to note that "conditions such as repetition, which enhance the quality of representations in the phonological loop, should promote long-term phonological learning."

4. Grigorenko, Elena L., 2002. "Foreign language acquisition and language-based learning disabilities", pp. 95-112, in Peter Robinson, ed., *Individual Differences and Instructed Language Learning*. Philadelphia, PA: John Benjamins.

Grigorenko provides the best description of the many different lines of investigation, which researchers have pursued since the 1960's into the causes of FL learning differences and difficulties. She documents and categorizes items in this ample body of research, thus providing a wealth of information, including the history of research, an analysis of the ways in which languages differ in difficulty for learners (phoneme-grapheme correspondence, grapheme-phoneme correspondence, morphological complexity, and grammatical differences), and more recent research into the numerous cognitive processes which impact FL acquisition. These include speech perception, speech production, memory, visual memory, verbal memory, short-term memory, long-term memory, phonological deficits, verbal naming difficulties, the ability to repeat, phonological awareness, morphological awareness, syntactic awareness, and comprehension. In her conclusion, Grigorenko states, "Although researchers, practitioners, and policy makers all acknowledge the difficulties in FL acquisition that are experienced by students with learning disabilities, nobody says that mastering a FL is an impossible task for these students".

5. Miyake, Akira, and Naomi P. Friedman, 1998. "Individual Differences in Second Language Proficiency: Working Memory as Language Aptitude", pp. 339-364, in Healy, A. F. and Bourne, L. E. Jr., *Foreign Language Learning: Psycholinguistic Studies on Training and Retention*, Mahwah, N.J.: L. Erlbaum Associates.

This chapter presents evidence that working memory (WM) may be the "central component" of foreign language aptitude. The authors cite three reasons. "First, three important components of language aptitude . . . –language analytic capacity, memory ability, and phonetic coding ability—are . . . components of WM. Second, WM is an important determinant of language proficiency in L1 research . . . and is likely to constrain the processing and learning of L2 as well". Third, the fact that L2 learners seem to differ far more in proficiency than L1 learners points to the existence of a general learning mechanism, which is related to maturational changes, and WM is a candidate mechanism. WM plays such a crucial role because "The linearity of language necessitates temporarily storing the intermediate and final products of computations as a reader or listener constructs and integrates ideas from the stream of successive words in a text or spoken discourse". In an individual's WM, both processing and storage of relevant information draw on the same resource supply, and a shortage of available resources can result in "two major negative consequences on task performance, namely processing slowdown and a gradual loss of necessary information." Studies demonstrate that WM is "an important determinant of syntactic comprehension ability" for FL learners.

6. Simon, Charlann, S., 2000. "Dyslexia and Learning a Foreign Language: A Personal Experience", *Annals of Dyslexia*, 50:155-187.

The strength of this article lies in the unique characteristics of its author, an individual with dyslexia, who became a speech-language pathologist, an ESL specialist, and a student of French. Simon is thus uniquely able to present an overview of the ways in which dyslexia complicates foreign language learning and also to provide details of her own seven-year quest to learn French. She concludes with sound recommendations for foreign language learners with dyslexia and their teachers. Her recommendations for FL teachers include 1) instruction for students in methods of FL learning; 2) such multi-sensory support for student learning as charts, blocks, songs, dialogues, dictation, immediate feedback regarding mistakes, and student correction of their own work; 3) early, consistent support for learning the phonology of a target language; 4) provision of opportunities to speak the target language in class; 5) grading procedures which encourage students with dyslexia to continue in FL classes; and 6) making FL learning as attainable as possible by providing the information students request as, for example, writing difficult words, phrases or sentences on the board.

7. Sparks, Richard L., 1995. "Examining the Linguistic Coding Differences Hypothesis to Explain Individual Differences in Foreign language Learning," *Annals of Dyslexia*, 45:187-214.

This article provides an excellent description of Sparks' theory regarding reasons why learners experience problems acquiring FL and recent research in this area. In the Linguistic Coding Differences Hypothesis (LCDH), Sparks and his team suggest that an individual's FL learning skills are based upon native language skills and can be measured. A person's "skills in the native language components—phonological, syntactic and semantic—serve as the foundation for successful FL learning". Sparks et al. have determined that the primary reasons both LD and non-LD students endure learning difficulties are based in phonemic awareness and phonological processing. Students with such deficits "may have difficulty with the perception and production of novel phonological strings" and this may hinder comprehension of spoken language. In addition, "poor reading skills in the native language will generalize to poor reading in the FL, further contributing to deficits in listening comprehension, oral expression, reading comprehension, syntax, general knowledge and verbal memory". The fact that the cognitive deficits are specific to language explains why students have severe problems learning FL, a language-based activity, and not in such other subjects as social studies, language arts, mathematics, or science.

8. Sparks, R., L. Ganschow, J. Pohlman, M. Artzer, and S. Skinner, 1992. "The Effects of a Multisensory Structured Language Approach on the Native and Foreign Language Skills of High-Risk Foreign Language Learners," *Annals of Dyslexia*, 42: 25-53.

Sparks, Richard L., Leonore Ganschow, Kay Fluharty and Sherwin Little, 1995. "An Exploratory Study on the Effects of Latin on the Native Language Skills and Foreign Language Aptitude of Students with and without Learning Disabilities," *The Classical Journal*, 91.2: 165-84.

These articles, plus others replicating these initial studies, report the results of studies conducted by the authors comparing groups of students in secondary school Latin and Spanish classes, some of whom are non-LD and who receive traditional instruction (NLD), some of whom have LD's and receive multi-sensory structured language instruction (LD-MSL) and some of whom have LD's but do not receive multi-sensory structured instruction (LD-NO/MSL). In both studies, two groups of students, NLD and LD-MSL, showed significant improvement in FL aptitude skills, measures of language phonology, and receptive vocabulary measures. The fact that only the NO-MSL group showed little or no improvement is an indicator of the benefits of explicit, systematic, instruction in the phonology of a new language for beginning students. The authors advocate the Orton-Gillingham method of phonological instruction in beginning language classrooms.

9. Strichart, Stephen S., and Charles T. Mangrum II, 1986. "College for the Learning Disabled Student: A New Opportunity," *Journal of Reading, Writing and Learning Disabilities*, 2, 4:251-266.

This article details the emergence of special programs and services designed to meet the needs of students with learning disabilities in American colleges and universities during the 1970's and early 1980's. The authors offer suggestions for advisors and instructors of college students with LD's, concluding with a list of fifteen characteristics an ideal instructor possesses. Ideal instructors support the goals of the learning disabilities program, understand or are willing to learn about the nature of students with learning disabilities, are committed to meeting individual needs of students, are willing to meet with students beyond class time, clearly state all course requirements, present material in an organized manner, provide structure, frequently review material, present material at a reasonable pace, are flexible regarding the format of examinations and time deadlines for assignments, are interested in how students perform tasks (process) as well as outcome (product), provide consistent feedback, present information using techniques that enable the students with LD's to learn through both auditory and visual modalities.

Ways in Which Languages Differ in Difficulty for Learners

(See Grigorenko, pp. 101-103)

I. Phoneme-grapheme correspondence.

In languages in which there is a high degree of consistency between single phonemes and single letters, “almost any word can be spelled correctly when it is presented orally and pronounced correctly when it is presented visually” (p. 101)

Easy:	Italian, Latin, Spanish
Moderate:	German, Russian
Difficult:	English, French

II. Grapheme-phoneme correspondence

“If the correspondence is easy (e.g. that between Roman characters in different language), learning is facilitated. On the contrary, learning is challenged when the correspondence is difficult (e.g. that between Roman and Cyrillic characters) (p. 102)

III. Morphological complexity

Degree of difficulty is based upon the average number of morphemes per word and the amount of information contained in each morpheme, and the number of declensions used for nouns, pronouns and adjectives and conjugations for verbs.

Easy:	English, Kiswahili
Difficult:	German, Latin

IV. Grammatical differences

Grammatical differences include such syntactic components of sentences as word order, word agreement and clausal links.

Easy:	Kiswahili,
Difficult:	German, Latin

Reasons for Foreign Language Learning Differences

Phonological processing ability. (See Sparks, 1995) This is the primary cause of immediate difficulties in FL classes. Phonological processing includes the ability to:

- discriminate among sounds in words;
- discriminate between words in sentence;
- remember and apply phonological rules (i.e. pronounce new vocabulary correctly);
- predict the spelling of words presented orally (sound/symbol); and
- remember and repeat words, phrases and sentences.

Working Memory. (See Miyake and Friedman, 1998) In the hypothesis of the authors, working memory (WM) may be the central component of FL aptitude. WM includes language analytic capacity, memory ability and phonetic coding ability. “The linearity of language necessitates temporarily storing intermediate or final products of computations as a reader or listener constructs and integrates ideas from the stream of successive words in a text or spoken discourse. Learners have differing WM capacities, and if they run short of available resources, they experience processing slowdowns and forgetting. WM is particularly important in processing syntax and dealing with ambiguities.

Phonological working memory. (See Gathercole and Thorn, 1998) Within an individual’s working memory, the “phonological loop” functions to temporarily process and store language information. Deficits in this area contribute to poor vocabulary growth in one’s native language and his/her inability to learn a second language. Learners impaired in this way have difficulty remembering and repeating new vocabulary words, learning larger language units, and understanding sentences.

Semantic processing ability. (See Sparks, 1995) Along with syntactic processing problems, semantic processing problems can also have a negative impact during the second year of study. “Semantic coding difficulties affect vocabulary knowledge and word retrieval, semantic referencing of noun/pronoun relationships or synonyms, understanding of multiple-meaning words, inferences, understanding and use of cohesive ties, and management of both narrative and expository language formats. (Simon, pp. 175-6) They are, however, the least common of FL learning difficulties.