

## FOREIGN LANGUAGE LEARNER VARIABLES IN AN URBAN COMMUTER UNIVERSITY SETTING

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*In this study, foreign language (FL) learner variables were evaluated in two distinct university settings, with a view to identifying trends in learning abilities and devising guidelines for FL teachers in urban commuter (UC) universities. To this end, students enrolled in a beginning Spanish program were given a battery of FL learner variable tests, including 34 students in a UC university and 40 students in a traditional residential (TR) institution. Namely, an aptitude test (CANAL), an FL anxiety questionnaire (FLCAS) and a language strategy survey (SILL) were administered. Independent two-sample t-tests were carried out to evaluate differences in mean scores. The results demonstrated significant trends among students in the UC setting regarding the use of advanced cognitive and linguistic skills, working memory, and compensation strategy use. These findings are discussed in reference to current FL principles and a number of teaching guidelines for UC institutions are suggested.*

### INTRODUCTION

Many studies have shown that individual characteristics have an important influence on the learning of a foreign language (FL) and that these differences can be tied to various types of learning variables. Foremost among these effects are the roles played by affective, cognitive and metacognitive factors (Horwitz, 2008); however, little is known about how such FL learning variables vary across different university settings. Furthermore, FL teaching methods do not take into account the possible impact of social and economic circumstances on learning abilities.

Two differentiated learning environments commonly found at the postsecondary level in the United States can be described as urban commuter (UC) and traditional residential (TR). The former one tends to comprise a high proportion of students, who are more likely to have postponed postsecondary education after completion of their high school degree or General Educational Development (GED) diploma, are older than 25 years old, are enrolled part-time for at least a portion of the year, seek retraining to improve their job prospects, are financially independent from legal guardians, and/or live with dependents. By contrast, the majority of students in the TR setting fit a traditional profile, in that many reside on or near the university campus, have recently graduated from high school, are financially supported by their families, have no dependents, and rely on part-time jobs only as a supplementary source of income (Choy, 2002).

In this context, the aim of this paper is to uncover trends in the FL learning abilities of students in UC settings and propose FL teaching methods that may be better suited to this group. To this end, an exploratory study was conducted to identify possible differences in UC and TR settings with respect to FL aptitude, FL anxiety and language learning strategy use. In this procedure, the results measured in the TR setting were then used as a baseline, since FL learner assessment tools and teaching methods have generally been developed for students in TR institutions

## **LITERATURE REVIEW**

This section first gives an account of a growing division observed between traditional and non-traditional college students in the United States. FL teaching methods mainly used in these institutions are then reviewed in some detail. Finally, the concepts of FL aptitude, FL anxiety and language learning strategy use are presented within the theoretical framework of individual differences and FL learner variables.

### ***Non-Traditional and Traditional Students***

Over the last 40 years, the make-up of the U.S. undergraduate population has gradually shifted. While it once mostly consisted of a traditional base (those students who pursue a college education upon high school graduation, while depending on their parents for economic support) the proportion of a non-traditional body (which comprises students belonging to a much wider socioeconomic group) has increased significantly. For instance, from 1970 to 1999, the number of postsecondary students working part-time increased from 28% to 39%; in the same years, the proportion of students over 25 years jumped from 28% to 39% (Choy, 2002). Non-traditional students are found more frequently in metropolitan areas, where more jobs are available and institutions offer flexible modes of study such as night classes, adult literacy programs, and distance learning (Schuetze & Slowey, 2002). This overall trend has been summarized by Belcheir (1998, p. 1): “The era of the traditional college student is gone, especially at urban and metropolitan colleges and universities”.

Typically, non-traditional and traditional students can be set apart as a function of their age (above versus below 25 years old), sources of income (personal finances versus family support), enrollment type (part-time versus full-time), family situation (with or without dependents), and length of study (Choy, 2002). In addition, non-traditional students often commute, which may lead to difficulties such as finding child care providers, matching work schedules to class time and being more socially isolated (Clark, 2006). In contrast, traditional students are usually better able to direct their energy towards their study and find motivation in the social climate of the campus (Shank & Beasley, 1995).

### ***Foreign Language Teaching Methods***

Methods of teaching FL have evolved considerably since the beginning of the 20th century. The first dominant approach to language teaching, known as the Grammar Translation Method (GTM), emerged in the late 19th century and is still used occasionally (Horwitz, 2008). It relies mainly on the memorization of grammar rules and vocabulary lists, while offering few listening and speaking activities. The learning of the target language has then to be internalized with the help of translation exercises. While useful in the acquisition of reading skills, GTM does not foster oral/aural abilities, and may appear tedious, tiresome and uninteresting to students. Another early approach called the Audiolingual Method or ALM was developed in the 1960's and is rooted in the structural linguistic and behaviorist theories that viewed language learning as a stimulus-response-reinforcement process (Hadley, 2001). It promotes the use of pattern drills and memorized dialogues in the classroom as a way of conditioning students' responses. Compared to GTM, ALM leads to better pronunciation accuracy, more cultural awareness and puts more emphasis on colloquial speech. However, it does not develop the spontaneous use of oral expression, ignores the role of learning preferences and fails to teach grammatical rules in an efficient manner. A method denoted Communicative Language Teaching (CLT) originated in the 1970's mostly as "a reaction to the limited oral flexibility students developed in ALM courses" (Horwitz, 2008, p. 57). Its main aim is to promote the ability to communicate by means of various class activities, such as role-play, problem-solving, interactive games and scaffolded conversations, which are then adapted by the teacher to address specific needs of the students. Some of the main qualities of CLT include an emphasis on the meaning of what is conveyed by the target language, a flexibility to adapt content and activities to the needs of the FL learners, and the ability to provide a classroom environment that is more conducive to learning. Due to its success, CLT was the footprint for many other FL teaching methods with a focus on communication. One of the preferred methods derived from CLT is the Natural Approach (NA) introduced in the late 1970s and early 1980s. It envisions three stages in the acquisition of speech: comprehension (when vocabulary is acquired), early speech and speech emergence. Through these steps, NA puts a strong focus on communication, while not assigning too much importance to the correct use of grammatical form, as it allows learners to express themselves in many ways in the classroom (target language, native language, gestures). In general, it is assumed that "speaking emerges when students are ready, which means when their silent period is over" (Horwitz, 2008, p. 56).

While teaching methods have evolved significantly, it does not mean that earlier approaches have become irrelevant. In fact, the large diversity of situations encountered by teachers reinforces the need for a wide range of pedagogical methods (Horwitz, 2008). For instance, Hummel and French (2010) claimed that communicative methods placed an excessive burden on students with low level of phonological memory and recommended placing more emphasis on audio-lingual exercises as a way to improve their performance in the second language classroom. In contrast with the tenets of

the communicative approach, Gatbonton and Segalowitz (2005) also stated the benefits of fostering automatic fluency in the FL classroom through the repetition of appropriate language structures.

Another aspect of FL learning resides in the individual differences that are found in any classroom. These types of characteristics have been identified and studied by many researchers over the last fifty years. In the next subsections, three main types of FL learner variables are reviewed successively.

### ***Foreign Language Aptitude***

FL aptitude is a cognitive variable broadly defined as “a specific talent for learning foreign languages” (Dörnyei & Skehan, 2003) and is one of the best predictors of FL success (Ellis, 2008). One of the first models of FL aptitude was developed by Carroll and Sapon (1959), who divided it into four basic abilities: phonemic coding ability, rote memory, grammatical sensitivity and inductive learning. This work led to the development of the Modern Language Aptitude Test (MLAT), which has consistently shown a high correlation with tests of foreign language proficiency (Erlam, 2005).

As a follow-up to this research, new aptitude tests were created for specific audiences and purposes, such as the Pimsleur Language Aptitude Battery (PLAB) targeted at high school students (Pimsleur, 1966), the Defense Language Aptitude Battery (DLAB) intended for military personnel (Petersen & Al-Haik, 1976), and the VORD, which was based on an artificial language (Parry & Child, 1990). In general, these tests did not require major changes to the existing concept of FL aptitude (Dörnyei, 2005).

Later on, Skehan (1991) suggested a new conceptualization of language aptitude based on his concern that Carroll's model relied excessively on the assumptions made by the audiolingual method with respect to FL learning, and thus did not take into account communicative and contextual aspects, such as the ability to learn a language when being exposed to it, possibly in an informal manner (Ellis, 2008). To address this issue, Skehan took an original view stemming from the field of Second Language Acquisition, which states that language processing occurs in distinct stages. According to this classification, aptitude could then be considered as a composite of three main skills: auditory, memory, and linguistic abilities, thus superseding phonemic coding, rote memory, and the combination of grammatical sensitivity and inductive learning, respectively (Dörnyei, 2005).

Advances in the field of cognitive psychology brought about another shift in this field (Sáfar & Kormos, 2008) and prompted the development of a new test of second language learning aptitude, the Cognitive Ability for Novelty in Acquisition of Language as applied to FL, or CANAL (Grigorenko, Sternberg & Ehrman, 2000). This test is based on cognitive theories of foreign language learning and on Sternberg's (2002) theory of human intelligence, which stresses the role played by the ability to cope with novelty and ambiguity (Grigorenko et al., 2000). It is applied in a naturalistic context as test takers are required to learn the elements of an artificial language called

Ursulu (Dörnyei, 2005). In doing so, participants must complete a variety of learning tasks involving five knowledge acquisition processes: 1) selective encoding, which relates to recognizing the relevance of the information, 2) accidental encoding, which relates to understanding background information, 3) selective comparison, which relates to assigning the relevance of old information, 4) selective transfer, which relates to the application of information to new contexts, and 5) selective combination, which relates to synthesizing the acquired information (Dörnyei, 2005). These processes are operationalized at the lexical, morphological, semantic and syntactic levels and through two modes of input: visual and oral. The test is administered in five successive steps related to 1) learning meanings of neologisms from context, 2) understanding the meaning of passages, 3) continuous paired-associate learning, 4) sentential inference, and 5) learning language rules. There are nine sections altogether; five in relation to immediate recall and four that regard delayed recall (Dörnyei, 2005). The CANAL's external validity has been assessed through several correlational analyses; it has also been rated against the MLAT and several tests of intelligence (Grigorenko et al., 2000, p. 397).

In contrast with the MLAT, the interactive roles played by working and long-term memories in language learning is a central aspect of the CANAL. Specifically, it is argued that “for language learning to take place, the linguistic material must be understood and encoded into working memory and then stored in long-term memory for later retrieval” (Dörnyei, 2005, p. 51). In practice, the implementation of these processes take place through immediate and delayed recall activities that are overlaid into the sections of the test. In this manner, the CANAL establishes a link between working memory and second language acquisition (Dörnyei, 2005). As to working memory, it “refers to the ability we have to hold and manipulate information in the mind over short periods of time” (Gathercole & Alloway, 2008, p. 2). It also “facilitates a range of cognitive activities, such as reasoning, learning and comprehension” (Baddeley, 2003, p.829). As it turns out, this skill has a special significance within the framework of language learning as several studies have shown a link between working memory capacity and FL performance (Miyake & Friedman, 1998; Sagarra & Herchensohn, 2010). In this respect, the dynamic and interactive nature of working memory assessment in the CANAL offers a clear advantage over traditional measures of language aptitude such as the MLAT, which “use only rote, passive measures of short-term memory ability” (Robinson, 2003, p. 660).

### ***Foreign Language Anxiety***

Emotional factors such as attitudes, motivation, learner beliefs, empathy, ego boundaries, and self-esteem are central to the FL learning process (Young, 1999). Among these variables, the manifestation of FL anxiety has been investigated thoroughly due to its prominent influence on performance (Ellis, 2008). According to Horwitz, Horwitz, and Cope (1986), this variable is expressed mostly in three different ways: a) oral

communication apprehension, b) test anxiety, and c) fear of negative evaluation. FL anxiety has been shown to alter many aspects of second language acquisition, including speaking (Phillips, 1992), reading (Saito, Horwitz & Garza, 1999), listening comprehension (Voguely, 1999), writing (Cheng, 2002), and gesture production (Gregersen, 2005).

Several instruments have been devised to measure FL language anxiety. Well-known examples include the Attitudes and Motivation Test Battery (AMTB), which comprises the French Class Anxiety Scale (Gardner, 1985), and the Foreign Language Classroom Anxiety Scale (FLCAS), a self-reporting survey developed by Horwitz et al. (1986). The latter instrument inquires about possible fears arising in the foreign language classroom as consequences of activities such as speaking, making mistakes, not understanding every word or being judged by classmates and teacher. The good predictive capability of the FLCAS with regard to performance has been illustrated by many studies (Olivares-Cuhat, 2010; Saito & Samimy, 1996). This test shows high reliability levels, with Cronbach's alpha coefficient values above 0.9 (Elkhafaifi, 2005; Marcos-Llinás & Garau, 2009).

Over the last ten years, a debate has arisen as to the causal relationship between language anxiety and achievement. On the one hand, Sparks, Ganschow and Javorsky (2000) relied on their Linguistic Coding Difference Hypothesis to claim that FL success is primarily derived from language aptitude, FL anxiety being merely a byproduct of learning difficulties. One of their main arguments is based on the idea that first language learning deficit plays the role of a confounding variable with respect to student anxiety (Sparks & Ganschow, 1995). On the other hand, a group of researchers have contested these arguments: MacIntyre (1995) supported the notion that anxiety could be indeed a causal factor for differences in second language learning and Horwitz (2000, p. 256) submitted that "the potential of anxiety to interfere with learning and performance is one of the most accepted phenomena in psychology and education". Also, a more recent study of the relative importance of FL variables cast doubt on the existence of a confounding variable between FL anxiety and FL performance (Olivares-Cuhat, 2010). While this point remains a controversial topic (see also Sparks & Ganschow, 2007; Yan & Horwitz, 2008), the position of Horwitz and associates has been mostly adopted within the framework of this paper, i.e., the author makes the assumption that the concept of FL anxiety and related measures are relevant to the acquisition of an FL and could provide useful insights as to the making of a good language learner.

### ***Language Learning Strategies***

Plans and techniques used more or less consciously by students "to improve their progress in developing skills in a second or foreign language" are described as language learner strategies (Oxford & Schramm, 2007, p. 48). They matter to the field of FL learning and teaching as they shed light on the many mental processes that take place in the course of FL learning and may be

integrated into the teaching content as a means to assist ineffective learners (Chamot, 2005).

A wide range of language learning strategies have been identified and their relationship to performance and achievement has been investigated in a number of studies (Ehrman & Oxford, 1990; Green & Oxford 1995). In general, the most successful students are better able to match the most effective types of language learning strategies with the task at hand (Chamot, 2005).

A widely used instrument to assess the use of language learning strategies is the Strategy Inventory of Language Learning (SILL) (Oxford and Burry-Stock, 1995). Its short form consists of 80 statements grouped into six subscales corresponding to the following learning categories: memory, cognitive, compensation, metacognitive, affective, and social strategies. This survey shows high reliability levels with values of the Cronbach's alpha coefficients in excess of 0.95 (Oxford & Nyikos, 1989).

### THE CURRENT STUDY

Given the increasing numbers of non-traditional college students (Choy, 2002) and their propensity to attend UC institutions (Belcheir, 1998), there is a growing need to better understand their academic strengths and weaknesses, and to support their specific learning needs. In the context of FL learning, a methodology based on the assessment of learner variables is often used by researchers as a means to evaluate individual learner differences in the classroom (Horwitz, 2008). These factors include aptitude, affective and metacognitive variables. In this article, such instruments were implemented with a view to gaining more insight into specific learner profiles of students in UC institutions, and to subsequently providing appropriate teaching guidelines for instructors in this setting. Accordingly, a pilot study was conducted to evaluate FL learner variables of students in UC and TR universities. Trends in FL learner skills among students in a UC setting were then measured in comparison to those found in a TR environment. The use of the group in the TR institution as a baseline is justified by the fact that learner variable tools and FL programs have been traditionally designed for this specific group. Specifically, the author sought to shed light on the following research questions:

1. Is there a difference in FL aptitude between students attending UC and TR universities?
2. Is there a difference in FL anxiety between students attending UC and TR universities?
3. Is there a difference in learning strategy use between students attending UC and TR universities?

#### ***Test Settings***

*An Urban Commuter University*

The first study site consisted of a mid-size Midwestern UC university with an enrollment of about 15,000 students, 90% of whom worked full or part-time. The median enrollment age was 28.7 years and only 10.9% of the student body were between the ages of 18 and 19. This institution was diverse with 40% of the population being non-White. It offered flexible programs, evening classes and practiced an open admission policy.

*A Traditional Residential University.*

The second site investigated in this study was a land-grant, Midwestern university with an enrollment of more than 30,000 undergraduate students. It comprised 16.5% of part-time students. The median age was 20.5 years old, 39% of whom were between 17 and 19, 57.5 % between 20 and 25, and 3.5% older than 26 years old. Only 14.2% of the students belonged to an ethnic minority group. Admission was decided upon high school transcripts and scores obtained on nationally standardized college tests.

*FL Programs.*

In spite of the differences between the test settings, the FL programs implemented at these institutions had much in common. In both cases, the method of instruction relied on the same textbook, "Dos Mundos", which is based on the natural approach to language instruction (Terrell, Andrade, Egasse & Muñoz, 2010). Class sizes (18 students on average), hours of instruction (5 hours per week) and assessment practices (5 quizzes, 3 exams and 2 oral interviews) were also similar.

***Participants***

*Participants in the Urban Commuter University*

The first group consisted of thirty-four American students enrolled in a beginning Spanish evening class, including 22 males and 12 females whose ages ranged from 17 to 50 ( $M = 27.6$  and  $SD = 9.2$ ). Participation was voluntary and all test subjects signed an informed consent form and subsequently received a monetary compensation.

*Participants in the Traditional Residential University*

The second group was comprised of forty American students enrolled in beginning Spanish courses offered during the daytime and included 21 males and 19 females whose ages ranged from 18 to 27 ( $M = 21.2$  and  $SD = 2.0$ ). Participation was voluntary and all test subjects signed an informed consent form and received a monetary compensation at the completion of the study.

***Instruments***

The following tools were used to measure learner variables in the classroom:

- The Cognitive Ability for Novelty in Acquisition of Language – Short Version (CANAL-S) assessed FL aptitude.

- The Foreign Language Classroom Anxiety Scale (FLCAS) provided a measure of FL learning anxiety.
- The Strategy Inventory for Language Learning (SILL) evaluated learning strategy use.

## RESULTS AND DISCUSSION

Results were computed with the statistical software SPSS. Means and standard deviations of the FL aptitude scores, FL anxiety and learning strategy surveys are shown in Tables 1 to 3. Each variable met the hypothesis of normality according to the Kolmogorov-Smirnov test. Otherwise, Levene's test revealed that the assumption of equal variances was rejected for the following variables: age, FL aptitude (immediate recall section) and FL anxiety. Subsequently, two t-tests methods were implemented to account for the possibility that variances could be unequal (Coombs, Algina & Oltman, 1996). Accordingly, in Tables 4 to 7 are shown outcomes of independent two-sample t-tests applied to the FL learner variable measures in order to compare the UC and TR settings. As expected, the t-test demonstrated that UC students were generally older than their TR counterparts.

### ***Research Question #1***

*Is there a difference in FL aptitude between students attending UC and TR universities?*

Yes, significant differences in mean scores were identified for three measures of aptitude: students in the TR setting scored higher than their counterparts in the UC environment in the portion of the FL aptitude test measuring sentence inference (CANAL-S part 4):  $t(72) = 2.53$ ,  $p = 0.014$ , in the portion measuring learning language rules (CANAL-S part 5):  $t(72) = 2.12$ ,  $p = 0.038$ , and in the elements assessing immediate recall (CANAL-S, parts 1 to 4):  $t(72) = 25.02$ ,  $p = 0.000$  (see Table 5). It is noteworthy that the effect size was found to be especially large with regard to immediate recall (Cohen's  $d = 4.5$ ), meaning that the association with a given group (UC versus TR setting) was strongly associated with the outcome of the tests (Cohen, 1988). In summary, the ability to use working memory in the learning of an FL was significantly lower in the UC setting.

These findings suggest that certain components of FL ability were not as developed among students attending a UC college. A number of variables may partially explain this trend, including differences in native language achievement, general verbal intelligence (Sparks, Patton, Ganshow, Humbach & Jovorsky, 2006), and academic success (Ellis, 2008).

Regarding the higher abilities demonstrated by students attending the TR university in terms of sentential inference and language learning rules, it should be noted that these tasks typically involve the use of advanced cognitive and linguistic skills, such as information processing, morphosyntactical knowledge and lexico-semantic awareness. One can then surmise that behaviors more commonly found among traditional students –

e.g., practice, study habits and academic focus (Choy, 2002; Shank & Beasley, 1995) – could have had a positive impact on strengthening these language skills. By the same token, certain circumstances often encountered by non-traditional students (e.g., family and financial responsibilities, lack of continuity in their studies, less scholastic training) could have hindered the development of these higher learning abilities (Rogers, 1981).

Several factors could explain the discrepancy observed between students in TR and UC settings regarding the effective use of immediate recall mechanisms. First, it has been shown that working memory undergoes a regular decline after 20 years of age with respect to processing-intensive tasks (Park, Lautenschlager, Hedden, Davidson, Smith & Smith, 2002), so that this tendency could have affected the older non-traditional student body. Second, research has shown that working memory in young adults could benefit from regular training (Klingberg, Forssberg & Westerberg, 2002), thus suggesting that traditional students were in a better position to maintain and develop their working memory capacities, as they did not experience long lapses between the completion of their secondary education and postsecondary enrollment. Third, these findings seem to be consistent with the abovementioned claims made by Miyake and Friedman (1998) about the existence of a relationship between working memory capacity and second language proficiency, thus suggesting the need for additional research to further confirm this relationship.

### **Research Question #2**

*Is there a difference in FL anxiety between students attending UC and TR universities?*

No significant difference in FL anxiety was found between students in the UC and TR settings:  $t(72) = -1.48, p = 0.142$  (see Table 6).

This result suggests that FL anxiety is not a factor that varies substantially across academic settings. It could be noted that this outcome does not reinforce findings of a previous investigation involving 210 students, which identified significant correlations between age and high academic expectations with FL anxiety (Onwuegbuzie, Bailey & Daley, 1999).

### **Research Question #3**

*Is there a difference in learning strategy use between students attending UC and TR universities?*

Yes, compensation strategy use (SILL C) was significantly higher among students in the TR setting:  $t(72) = 2.12, p = 0.038$  (see Table 7).

This trend is consistent with the high language aptitude levels achieved by this group (Olivares-Cuhat, 2010). This result suggests that non-traditional students may generally be less inclined than traditional ones to look for ways of enhancing their learning abilities. In turn, this discrepancy may be related to the fact that a TR university setting may better protect students against pressures experienced by their counterparts in a UC setting, such as the needs to commute, look for a quiet place to study, avoid scheduling conflicts, find academic support and resources, and accommodate pressures imposed by

family responsibilities (Shank & Beasley, 1995). One can surmise that such circumstances have an impact on the development of language learning strategies: as put by Horwitz (2008, p. 15): "Finding a quiet place to study, calming yourself down when anxious, ... , or seeking out a conversational partner all fall under the heading of language learning strategies".

Generally, the fact that several subscales of FL aptitude and learner strategy were linked significantly to college settings seems to support the idea that FL learning abilities vary not only in function of individual differences, but also depend on the educational context. In turn, these differences in FL learning factors point to the potential benefit of implementing teaching methods that are adapted to specific learning environments. A way to justify this approach is to view it as a generalization of a teaching strategy developed within the framework of individual differences, where it was proposed that the knowledge of individual learning strengths could lead to the design of individualized learning programs (Ehrman, Leaver & Oxford, 2003). In the same manner, it can be argued that a better understanding of the learning characteristics of UC students in terms of sentential inferencing, application of language learning rules, working memory and language learning strategy use, could lead to the design of more appropriate methodologies for this population.

#### ***Limitations of the Study***

Regarding sample sizes, post-hoc statistical powers of the t-tests estimated for the sections 4 to 5 of the CANAL and SILL C amounted to 72%, 55% and 56%, respectively, indicating that larger samples could be desired to lower the probability of Type 2 errors in future studies (Cohen, 1988). As to the immediate recall section of the CANAL, the statistical power associated with the t-test could not be evaluated due to the inequality of variances, but its large effect size (Cohen's  $d > 4.5$ ) guaranteed that the sample size was sufficiently high to yield a satisfactory statistical power. In any case, a replication of this investigation would be helpful to further validate the findings of this study. It would also be of interest to expand the scope of this study to include additional FL learner variables, such as motivation, cognitive style, and personality.

#### ***Teaching Implications for the Foreign Language Urban Commuter Classroom***

The results of this study point to significant trends for FL acquisition in a UC setting, thus demonstrating the need to adapt current pedagogical methods for this category of students. First, the lower FL aptitude of students in the UC setting with respect to their advanced language skills suggests a need for more training in specific areas. Namely, the lower ability to infer meaning in translation exercises (which was measured by part 4 of the FL aptitude test) points to the potential benefits of additional instruction on language structure, word order and semantic awareness, while a difficulty to infer linguistic rules (as measured by part 5 of the FL aptitude test) could

possibly be compensated with training on pattern recognition and phonological identification. Accordingly, these components could first be emphasized within the linguistic component of the course, and could later be reinforced by means of exercises specifically designed to stimulate the students' grammatical sensitivity. For instance, in a Spanish class, students could practice the position of object pronouns in relation to the grammatical cases associated in these structures; exercise the formulation of conditional clauses; recognize the proper use of specific tenses in a given context; study agreement rules for grammatical categories such as subjects, verbs, nouns, adverbs and adjectives; and carry out phonological exercises.

Second, the low scores obtained by students in the UC setting on the immediate recall elements of the FL aptitude test show the potential benefit of teaching techniques aimed at relieving the load placed on the working memory of FL students. Such an approach was proposed by Gathercole and Alloway (2008) who advocated a range of pedagogical procedures to foster a more efficient use of this limited resource. Accordingly, they recommended reducing the amount of content, increasing familiarity with the material, breaking down complex tasks into sequences of increasingly difficult activities, and using repetition and memory aids. For example, the FL instructor could select an appropriate subset of new vocabulary words and/or grammatical structures to be practiced in a given lesson, give step by step instructions on how to recognize and apply the use of grammatical mood and aspect, build on students' background knowledge through questions and connections with real life, include more practice of content, and encourage students to use learning aids, such as flashcards, dictionaries and computer software.

Another way to compensate for low working memory capacity is to promote the use of a range of appropriate language learning strategies. Along these lines, Gathercole and Alloway (2008) made several suggestions as to how teachers may intervene and build learning strategies for students with ineffective working memory. First, teachers in the UC language classroom could encourage their students to take notes, as this may relieve the load they put on their working memory, while forcing them to organize their thoughts and prioritize the relevance of the class content. Next, FL teachers could coach their class in the proper use of rehearsal techniques (e.g., repeat limited amount of material either orally or in writing, avoid distractions and multitasking), as this type of behavior can "prolong the content of verbal short-term memory, provided that the amount of information being rehearsed is not too great" (Gathercole & Alloway, 2008, p. 87). Last, FL teachers could implement devices that shift the burden placed on working memory to long-term memory. For instance, use of acronyms may be encouraged as a way to easily store and recall important material without relying on working memory, such as summarizing the uses of subjunctive in Spanish with the term "WEIRDO" (which stands for Wishes, Emotions, Impersonal expressions, Recommendations, Doubt and Ojalá).

Naturally, the support of low working memory is not the only advantage that can be provided by language learning strategies and their lower use reported in the UC FL classroom is a concern that should be addressed independently. In this regard, it could be beneficial to integrate the teaching of learning strategies with methods such as the strategy based instruction approach proposed by Cohen (1998). According to this methodology, new strategies are proposed and explicitly defined by the teacher, the modality of their usage for a given task are then explained, and these strategies are eventually implemented, rehearsed and assessed (Cohen, 1998). For example, to teach a strategy aimed at recognizing cognate words (i.e., words in the target language that are closely related to the same words in the native language), the teacher could start by presenting some examples to the classroom (e.g., in the case of Spanish, "música", "teléfono", "sistema"), then specify the conditions under which this strategy is the most effective (e.g., in comprehension and vocabulary learning), provide sentences for drill practice, and finally discuss the usefulness and generalization of the technique.

In conclusion, general guidelines can be inferred in terms of FL teaching methods for the UC classroom. First, in contrast with the communicative approach widely in use today, the abovementioned findings demonstrate a need to reemphasize the explicit teaching of grammatical structure and implement activities promoting pattern recognition and phonological identification. As it turns out, this claim is consistent with recent research trends: according to Hummel and French (2010, p. 383), "a general consensus in the literature is that some explicit attention should be given to linguistic grammatical forms to allow learners in communicative classrooms to attend to and learn L2 grammatical structures". Second, the findings of this study support the novel idea advocated by Gathercole and Alloway (2008) of integrating teaching methods aimed specifically at relieving some of the load put on students' working memory.

## CONCLUSIONS

In this study, it was found that students in the UC environment encountered difficulties in terms of FL aptitude as related to sentential inference, language learning rules and working memory capacity. Students in the UC environment also displayed a lower use of compensation strategy. Consequently, a number of teaching guidelines were suggested that focused mostly on the development of advanced language skills, relieving techniques for working memory, and learning strategy use. Due to the rapid enrollment growth in UC settings in the United States, one can project a steady growth in the relevance of FL teaching methods and curricula tailored for the non-traditional student body attending these institutions.

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Table 1

*Descriptive Statistics, CANAL-S*

Subscale	<i>n</i>	<i>M</i>	<i>SD</i>
Part 1			
Non-Traditional	34	8.50	2.38
Traditional	40	8.13	2.28
Part 2			
Non-Traditional	34	5.38	1.81
Traditional	40	5.18	2.05
Part 3			
Non-Traditional	34	11.32	2.50
Traditional	40	12.38	2.45
Part 4			
Non-Traditional	34	6.59	2.11
Traditional	40	8.10	2.90
Part 5			
Non-Traditional	34	7.44	3.22
Traditional	40	9.00	3.10
Immediate Recall			
Non-Traditional	34	6.24	2.75
Traditional	40	34.05	5.96
Delayed Recall			
Non-Traditional	34	7.76	2.68
Traditional	40	8.73	3.67

Table 2

*Descriptive Statistics, FLCAS*

Variable	<i>n</i>	<i>M</i>	<i>SD</i>
FLCAS			
Non-Traditional	34	99.29	21.90
Traditional	40	90.33	28.87

Table 3

*Descriptive Statistics, SILL*

Subscale	<i>n</i>	<i>M</i>	<i>SD</i>
Memory			
Non-Traditional	34	2.98	0.455
Traditional	40	2.80	0.512
Cognitive			
Non-Traditional	34	3.07	0.591
Traditional	40	3.06	0.494
Compensation			
Non-Traditional	34	3.33	0.572
Traditional	40	3.59	0.471
Metacognitive			
Non-Traditional	34	3.17	0.656
Traditional	40	3.03	0.576
Affective			
Non-Traditional	34	2.79	0.623
Traditional	40	2.70	0.684
Social Strategies			
Non-Traditional	34	3.08	0.751
Traditional	40	3.22	0.690

Table 4

Independent Two-Sample T-Tests, Age

Variable	Levene's Test for Equality of Variances		T-test for Equality of Means										
	F	p	t	df	p	M Diff.	SE Diff.	95% CI					
								LL	UL				
Age													
Equal Variance Assumed	47.86	.000	-4.25	72	.000**	-6.36	1.50	-9.35	-3.38				
Equal Variance not Assumed			-3.95	35.62	.000**	-6.36	1.61	-9.64	-3.09				
*p < 0.05, **p < 0.01													

Table 5

Independent Two-Sample T-Tests, CANAL-S

Subscale	Levene's Test for Equality of Variances		T-test for Equality of Means						
	F	p	t	df	p	M Diff.	SE Diff.	95% CI	
								LL	UL
Part 1									
Equal Variance Assumed	0.192	0.662	-0.692	72	0.491	-0.375	0.542	-1.46	0.706
Equal Variance not Assumed			-0.689	69.03	0.493	-0.375	0.544	-1.46	0.71
Part 2									
Equal Variance Assumed	1.16	0.285	-0.458	72	0.649	-0.207	0.453	-1.11	0.696
Equal Variance not Assumed			-0.462	71.88	0.645	-0.207	0.449	-1.1	0.687
Part 3									
Equal Variance Assumed	0.389	0.535	1.83	72	0.072	1.05	0.576	-0.096	2.2
Equal Variance not Assumed			1.82	69.62	0.073	1.05	0.577	-0.099	2.2
Part 4									
Equal Variance Assumed	3.22	0.077	2.53	72	.014*	1.51	0.598	0.319	2.71
Equal Variance not Assumed			2.59	70.39	.012*	1.51	0.583	0.348	2.68
Part 5									
Equal Variance Assumed	0.07	0.792	2.12	72	.038*	1.56	0.736	0.092	3.02
Equal Variance not Assumed			2.11	69.12	.038*	1.56	0.738	0.086	3.03
Immediate-Recall									
Equal Variance Assumed	13.45	0	25.02	72	.000**	27.82	1.11	25.5	30.03
Equal Variance not Assumed			26.39	56.8	.000**	27.82	1.05	25.7	29.92
Delayed Recall									
Equal Variance Assumed	2.3	0.134	1.27	72	0.209	0.96	0.758	-0.551	2.47
Equal Variance not Assumed			1.3	70.48	0.198	0.96	0.739	-0.514	2.43
*p < 0.05, **p < 0.01									

Table 6

Independent Two-Sample T-Tests, FLCAS

Variable	Levene's Test for Equality of Variances		T-test for Equality of Means						
	<i>F</i>	<i>p</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>M</i> Diff.	<i>SE</i> Diff.	95% CI	
								<i>LL</i>	<i>UL</i>
FLCAS									
Equal Variance Assumed	6.13	0.016	-1.48	72	0.142	-8.97	6.04	-21.02	3.08
Equal Variance not Assumed			-1.52	71.15	0.134	-8.97	5.91	-20.75	2.82

Table 7

## Independent Two-Sample T-Tests, SILL

Variable	Levene's Test for Equality of Variances		T-test for Equality of Means						
	F	p	t	df	p	M Diff.	SE Diff.	95% CI	
								LL	UL
Memory									
Equal Variance Assumed	1.09	0.301	-1.6	72	0.113	-0.182	0.114	-0.408	0.444
Equal Variance not Assumed			-1.62	71.84	0.11	-0.182	0.112	-0.406	0.422
Cognitive									
Equal Variance Assumed	0.949	0.333	-0.057	72	0.954	-0.007	0.126	-0.259	0.244
Equal Variance not Assumed			-0.057	64.55	0.955	-0.007	0.128	-0.263	0.249
Compensation									
Equal Variance Assumed	1.16	0.285	2.12	72	.038*	0.257	0.121	-0.015	0.499
Equal Variance not Assumed			2.09	64.04	.041*	0.257	0.123	-0.011	0.503
Metacognitive									
Equal Variance Assumed	0.893	0.348	-1.02	72	0.312	-0.146	0.143	-0.431	0.14
Equal Variance not Assumed			-1.01	66.29	0.317	-0.146	0.145	-0.435	0.143
Affective									
Equal Variance Assumed	0.386	0.536	-0.558	72	0.579	-0.085	0.153	-0.391	0.22
Equal Variance not Assumed			-0.562	71.63	0.576	-0.085	0.152	-0.388	0.218
Social Strategies									
Equal Variance Assumed	0.252	0.617	0.83	72	0.41	0.139	0.168	-0.195	0.473
Equal Variance not Assumed			0.824	67.81	0.413	0.139	0.169	-0.198	0.476
*p < 0.05, **p < 0.01									