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Perceptual learning style preferences of monolingual and bilingual EFL learners

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ABSTRACT

The present study explored the perceptual learning style preferences of monolingual and bilingual English as a Foreign Language (EFL) learners to determine whether they have similar or different learning style preferences. It also aims to provide an insight into the way EFL is learnt in a specific course level and community. The objectives of this research were twofold: (1) to identify the most and least favoured perceptual learning style preferences of monolingual and bilingual EFL learners; and (2) to determine whether there were statistically significant differences between students' linguistic profiles (monolingualism and bilingualism) and perceptual learning styles. The sample consisted of 60 EFL learners (47 monolingual and 13 bilingual) who attended the second year of Spanish non-compulsory secondary education. The data collection instrument used to measure the perceptual learning style preferences was the Learning Style Survey (LSS) (Cohen et al., 2009). Findings indicated that monolingual and bilingual EFL learners preferred the visual learning style, whilst auditory learning style appeared to be the least popular. There were not statistically significant differences between students' linguistic profiles and perceptual learning style preferences, and the effect size was small. Therefore, findings suggested that being monolingual or bilingual did not affect the students' preferences for learning EFL.

Keywords: perceptual learning style preferences, monolinguals, bilinguals, EFL learners, 12th grade.

1. Introduction

Learning styles are a significant factor in second language (SL) and foreign language (FL) education because they concern the distinct ways in which learners learn. The origin of learning styles dates back to the 1970s and, since then, they started to be acknowledged and gained influence in the field of education (Griffiths, 2012). Research on learning styles is highly significant for teachers and researchers in SL or FL education for several reasons. First of all, it reveals the individual preferences students have towards learning languages. Secondly, it provides information on different linguistic profiles and educational levels. Thirdly, it gives an insight into an essential part of the SL or FL process. Finally, it allows teachers and textbook designers to be cognizant of the students' learning styles and plan their classes and textbooks accordingly. Nevertheless, few research has been conducted on the differences between monolingual and bilingual EFL learners and their perceptual learning styles, a dimension of learning styles.

EFL classrooms worldwide are constituted by learners with diverse linguistic profiles. An example of this is the monolingual community of La Rioja, where Spanish is the official language of institutions and schooling. Despite its monolingualism, this community hosts immigrants from European and non-European countries, whose mother tongue is other than Spanish. This situation has prompted a variety of linguistic profiles in the schools of La Rioja. Classrooms in this community include learners who have Spanish as their mother tongue and learn English as a FL, and immigrant students who have a native competence in both their L1 and Spanish

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and learn English as a FL. English is a compulsory subject in primary (1st to 6th grade), secondary (7th to 10th grade), and post-secondary (11th to 12th grade) education. However, there is little information on the comparison between monolingual and bilingual students in EFL education. This comparison would allow us to know whether the knowledge of several languages influences the preferences students have for learning. The present study addresses these issues and examines the perceptual learning style preferences of Spanish monolingual students and immigrant students, bilingual in their mother tongue and Spanish, who learn EFL in the second year of Spanish non-compulsory secondary education (equivalent to the 12th grade). These students have been learning English for at least 11 years, even more if they attended preschool which is not compulsory in the Spanish educational system. The 11th and 12th grades are not compulsory either, so they are students who decided to continue their education. Recognising the learning styles that exist will make students aware of their own preferences for learning, identify their strengths and weaknesses, become more autonomous, and have more positive attitudes to learning.

2. Review of literature

2.1. Learning styles and perceptual learning styles

Learning styles have been widely researched in the fields of second language acquisition (SLA) and foreign language acquisition (FLA) since the 1970s. For example, Reid (1995: viii) defines them as "an individual's natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills". They are essential elements in SL and FL learning because they provide information about how and in which distinct ways individuals learn. Despite its growing influence, the concept of learning styles has been a subject of heated debate among SL and FL researchers. Advocates of learning styles (e.g., Kinsella, 1995; Reid, 1995) realise their educational implications and promote the matching of learning and teaching styles to enhance students' learning and motivation. Other scholars view learning styles as a confusing and controversial concept owing to the vast number of labels, definitions, models, taxonomies, and instruments that have been proposed throughout the years (e.g., Curry, 1990; Coffield et al., 2004; Dörnyei, 2005). Some researchers (e.g., Willingham, 2005, Pashler et al., 2009) criticise them and believe that there is not enough evidence to confirm the improvement of students' learning after matching their styles with their teachers'. We support the view that matching styles will not make students succeed and achieve their best results, but it will help them feel more motivated and secure towards learning, since their preferences will be considered. According to Dörnyei and Ryan (2015: 107), this controversy might have arisen "due to our insufficient knowledge rather than the scientific inadequacy of the concept". Therefore, the lack of consensus has made this research area be rather obscure. This does not mean that studies on this issue are not important or necessary, quite the contrary. In fact, as Dörnyei and Ryan (2015: 107) also stated, "there is something genuinely appealing about the notion and, what is more, this intuitive appeal tends to resonate strongly with the classroom experience of educational practitioners". Most definitions and models of learning styles have described the perceptual dimension of learning styles, and they are found in SL or FL classrooms (Barbe & Swassing, 1979). Moreover, it is a well-known concept for SL and FL teachers (Griffiths, 2012; Dörnyei & Ryan, 2015) and researchers. Being aware of their students' learning styles would allow teachers to implement new methodologies and activities according to their students' styles to maximise their learning and motivate them.

Following these lines, perception alludes to "the process by which the brain systematically collects information" (Keefe, 1988: 1). This process involves the use of the different senses or perceptual modalities (sight, hearing, touch, smell, and taste), and it is essential for learning. For example, Kinsella (1995: 225) defines perceptual

learning styles as "the senses through which each person takes in and retains new and difficult information". Researchers tend to agree with the definition of perceptual learning styles as the preferences an individual has for acquiring information. Nevertheless, a more accurate definition would include the reasons why learners choose a specific sensory modality to learn, which might be influenced by internal (e.g. age, gender, motivation, attitude to learning, personality) and external (e.g. social context, educational level, curriculum, culture) factors. Regarding the educational context, sight, hearing, and touch are the most significant perceptual modalities (Barbe & Swassing, 1979). Therefore, this study will be devoted to the perceptual learning style preferences that can be found in a SL or FL classroom: visual, auditory, and tactile/kinaesthetic, since they give teachers information about how their students prefer to learn. Visual learners like to receive information through the sense of sight. In an EFL context, they prefer learning from the textbook because it includes many pictures, and the activities are written on the textbook itself. They like when their teachers' lectures are supported by visual presentations (e.g. Power Point, Prezi). They usually learn by taking notes of their teachers' explanations (e.g. grammar), and they also like when teachers ask them to read English books. Auditory learners learn best through hearing. In EFL education, they prefer listening to their teachers' lectures instead of taking notes, and they favour oral instructions for the activities they have to do rather than having them written on a piece of paper. They also like listening activities and participating in classroom discussions. Kinaesthetic and tactile learners are usually considered together because both styles are related, but they are not the same. Kinaesthetic learners prefer to learn through movement, whilst tactile learners like learning through the sense of touch (Dörnyei, 2005). These types of learners like moving, doing experiments, or building things. In an EFL classroom, kinaesthetic learners like doing role-play activities, moving around the classroom because they dislike sitting still, having breaks, and the use of realia. Tactile learners prefer hands-on activities, such as doing written assignments or drawing. They also like underlining what they read, taking notes, and written instructions. Overall, language learners can have a unique preference for learning (visual, auditory, or tactile/kinaesthetic), or they can have a mixed-modality preference and employ two or three styles. In this study, perceptual learning styles are considered as an indication of a preference, which does not necessarily mean that learners do not resort to other styles in different situations, it only means that they generally prefer to learn in that way.

2.2. Perceptual learning styles and bilingualism

The comparison between monolingual and bilingual EFL learners' perceptual learning styles has not been thoroughly researched. This comparison would reveal whether the knowledge of several languages influences the preferences learners have towards learning. It would also be useful for FL teachers to acknowledge the preferences their monolingual and bilingual students have for learning to identify their similarities and differences. Teachers would be able to adapt to their students' learning styles (e.g. new methodologies, activities) in order to ensure they optimise their learning.

As can be observed in Table 1, scholars have extensively investigated the perceptual learning style preferences of monolingual EFL learners, and one considered ESL students (Hyland, 1993). Table 1 provides a summary of studies in chronological order which have explored monolinguals' learning preferences. Only one investigation (Psaltou-Joycey & Kantaridou, 2009) made a comparison between monolingual and bilingual EFL learners' perceptual learning styles, which is the purpose of this study.

Regarding Chinese as an L1, Peacock (2001) explored university students' perceptual learning styles and teachers' teaching styles. The data collection instruments were the Perceptual Learning Style Preference Questionnaire (PLSPQ) (Reid, 1995) and a modified version of it to assess the perceptual teaching styles. Most

students favoured the kinaesthetic modality (m=14.14), followed by auditory (m=13.87), tactile (m=13.08), and visual (m=12.37). Nevertheless, there was a mismatch between perceptual learning and teaching styles regarding the auditory modality. Shen (2010) investigated the effect of perceptual learning style preferences on L2 lexical inferencing with EFL university students in Taiwan. The instruments used were the PLSPQ (Reid, 1995), and a lexical inferencing pre-test and post-test. Before inferencing strategy instruction, results suggested that kinaesthetic learners (mean 14.88) achieved the best outcomes in the lexical inferencing test, followed by tactile (14.33), auditory (13.91), and visual (11.03) learners. Nevertheless, in the lexical inferencing post-test after receiving instruction, auditory and visual learners outperformed the other participants. Another example is the study of Li and He (2016), which examined the perceptual learning styles of university students through the PLSPQ (Reid, 1995). Tactile (m=19.45) was the most preferred modality, followed by kinaesthetic (m=19.11), auditory (m=17.62), and visual (m=17.16). As for Japanese as an L1, Hyland (1993) researched the perceptual learning style preferences of university students in Japan and New Zealand, where English was their L2. After implementing the PLSPQ (Reid, 1995), results showed that the auditory modality (m=12.33) was the most preferable, followed by tactile (m=12.18), kinaesthetic (m=12.00), and visual (m=10.93).

Concerning native speakers of Korean, Lee and Kim (2014) investigated the perceptual learning styles and English achievement of university students. The data collection instruments were the PLSPQ (Reid, 1995) and a TOEIC test. Most learners preferred the auditory modality (m=18.10), followed by visual (m=17.01), kinaesthetic (m=14.76), and tactile (m=14.72). Findings revealed that the students who achieved better scores in the TOEIC test were the ones who preferred the visual, tactile, and kinaesthetic learning styles. Kim and Kim (2018) addressed the perceptual learning styles, the ideal L2 self, and motivated behaviour of college students. They adapted the Learning Style Survey (LSS) (Cohen et al., 2009) to assess their learning styles. Results indicated that they preferred the visual modality, followed by auditory and kinaesthetic. Visual and auditory styles were positively correlated with motivated behaviour, whilst the kinaesthetic style correlated negatively. In the case of Arabic as an L1, Aliweh (2011) researched the relationship between college students' perceptual learning styles and satisfaction with online learning in Egypt. The PLSPQ (Reid, 1995) and a questionnaire to measure their online satisfaction were the instruments employed. Visual was their preferred modality (m=12.60), followed by kinaesthetic (m=12.53), tactile (m=12.16), and auditory (m=10.67). However, a significant correlation was not obtained between perceptual learning styles and online satisfaction, except for the kinaesthetic modality.

With reference to native speakers of Persian, Abdollahzadeh and Amiri (2009) studied the relationship between semantic mapping and perceptual learning styles in the vocabulary learning of Iranian language institute students. The data collection instruments were a vocabulary size test, four reading passages, the PLSPQ (Reid, 1995), and a vocabulary post-test. The majority of the informants preferred the kinaesthetic learning style (37.8 per cent), followed by visual (32.1 per cent) and auditory (30.1 per cent). Findings indicated that semantic maps as a vocabulary instruction technique influenced vocabulary learning. In addition, no statistically significant differences were obtained between perceptual learning styles and semantic mapping, which implied that learners with different modalities learnt vocabulary almost equally through semantic mapping. Another investigation was conducted by Gilakjani (2012), who investigated the perceptual learning styles of university students. The VAK (Chislett & Chapman, 2005) questionnaire was used to measure their learning styles. Findings revealed that 55 per cent of learners favoured the visual modality, followed by auditory (35 per cent) and kinaesthetic (10 per cent) learning styles. Zokaee et al. (2012) explored the effect of vocabulary learning strategies on university students' perceptual learning styles. The researchers administered a vocabulary learning strategies questionnaire and the PLSPQ (Reid, 1995). The majority of their respondents were reported to prefer the visual learning style (mean 37.63), followed by kinaesthetic (36.48) and auditory (36.11) modalities. Some significant relationships

were found between perceptual learning styles and vocabulary learning strategies. The auditory style correlated positively with social and cognitive vocabulary learning strategies, and the kinaesthetic style correlated significantly with social vocabulary strategies. Zarei and Pourghasemian (2016) examined the relationship between perceptual learning styles and lexical inferencing, as well as the strategies used for those inferences, in undergraduate students. The researchers implemented the PLSPQ (Reid, 1995), two reading texts were used for the lexical inferencing test, and a strategy questionnaire to indicate the strategy students employed for lexical inferencing. Their findings indicated that most test-takers preferred the visual learning style, followed by auditory, kinaesthetic, and tactile. In fact, visual and auditory modalities were first and second ranked in lexical inferencing ability. They also concluded that perceptual learning styles affected the strategies used in lexical inferencing. Another example is the research undertaken by Hatami (2018), which investigated whether there was a relationship between L2 incidental vocabulary acquisition and retention through reading and university students' perceptual learning styles. She implemented the LSS (Cohen et al., 2009), 16 words from a reading text, and a vocabulary post-test. Findings showed that visual modality (47 per cent) was the preferable, followed by mixed-modality preference (33 per cent), tactile/kinaesthetic (11 per cent), and auditory (nine per cent). In fact, perceptual learning style matching did not influence incidental word learning through reading. Derakhshan and Shakki (2018) explored the impact of level of proficiency on perceptual learning styles in Iranian university students. The researchers distributed the PLSPQ (Reid, 1995) questionnaire and an IELTS listening and reading exam to assess their language proficiency. These learners favoured the tactile modality (mean 11.85), followed by visual (11.36), kinaesthetic (10.80), and auditory (10.71). In fact, a statistically significant relationship was found between the level of proficiency and perceptual learning styles. Gholam-Shahbazi (2019) looked at the relationship between spatial and musical intelligences, perceptual learning styles, and vocabulary knowledge of Iranian university students. The instruments used were a multiple intelligence test, the VAK (Chislett & Chapman, 2005) questionnaire to measure the perceptual learning styles, a receptive vocabulary size test, and an IELTS listening test. Outcomes indicated that auditory (62 per cent) was the preferred modality, followed by visual (24.5 per cent) and kinaesthetic (7.5 per cent). There were also 12 multimodal students who favoured the auditory and visual modalities (4.5 per cent) and the visual and kinaesthetic learning styles (1.5 per cent). Findings also revealed a statistically significant relationship between spatial and musical intelligences, perceptual learning styles, and receptive vocabulary knowledge.

Psaltou-Joycey and Kantaridou (2009) explored the relationship between plurilingualism and perceptual learning styles in Greek university students. They were monolingual or bilingual speakers who had Greek as their L1 and knew other languages, such as English (80.5 per cent), French (18.5 per cent), German (10.8 per cent), Italian (1.4 per cent), or Spanish (0.9 per cent). The Styles Analysis Survey (SAS) (Oxford, 1995) was the instrument used to measure their learning styles. Results revealed that bilingual speakers had a higher preference for perceptual learning styles than monolingual EFL learners. However, no statistically significant differences were found between plurilingualism and learning styles. A limitation of this study was that it did not provide the types of perceptual learning styles in detail.

As can be inferred from this review of studies, the country where they were conducted, the educational level of the informants, and the data collection instrument might have influenced the students' preferences for perceptual learning styles. The majority of investigations that were undertaken in the same country researched university students, employed nearly always the same instrument (PLSPQ), and reported similar findings regarding the perceptual learning styles of monolingual EFL learners. Accordingly, other factors, apart from the linguistic profile of students, might also have affected the perceptual learning style preferences of EFL learners.

Study	Informants' background	Languages	Instrument	Most-least preferred
Hyland (1993)	University students Japan and New Zealand	L1: Japanese L2: English	PLSPQ	M: Auditory L: Visual
Peacock (2001)	University students Hong Kong	L1: Chinese FL: English	PLSPQ	M: Kinaesthetic L: Visual
Abdollahzadeh and Amiri (2009)	Language institute students Iran	L1: Persian FL: English	PLSPQ	M: Kinaesthetic L: Auditory
Psaltou-Joycey and Kantaridou (2009)	University students Greece	Not reported	SAS	No significant differences
Shen (2010)	University students Taiwan	L1: Chinese FL: English	PLSPQ	M: Kinaesthetic L: Visual
Aliweh (2011)	University students Egypt	L1: Arabic FL: English	PLSPQ	M: Visual L: Auditory
Gilakjani (2012)	University students Iran	L1: Persian FL: English	VAK	M: Visual L: Kinaesthetic
Zokaee et al. (2012)	University students Iran	L1: Persian FL: English	PLSPQ	M: Visual L: Auditory
Lee and Kim (2014)	University students South Korea	L1: Korean FL: English	PLSPQ	M: Auditory L: Tactile
Li and He (2016)	University students China	L1: Chinese FL: English	PLSPQ	M: Tactile L: Visual
Zarei and Pourghasemian (2016)	University students Iran	L1: Persian FL: English	PLSPQ	M: Visual L: Tactile
Derakhshan and Shakki (2018)	University students Iran	L1: Persian FL: English	PLSPQ	M: Tactile L: Auditory
Hatami (2018)	University students Iran	L1: Farsi FL: English	LSS	M: Visual L: Auditory
Kim and Kim (2018)	University students South Korea	L1: Korean FL: English	LSS	M: Visual L: Kinaesthetic
Gholam-Shahbazi (2019)	University students Iran	L1: Persian FL: English	VAK	M: Auditory L: Kinaesthetic

Table 1. Summary of studies on monolinguals and bilinguals' perceptual learning styles (FL: foreign language, M: most preferred, L: least preferred).

In sum, this review of studies shows that visual seems to be the learning preference of monolingual EFL and ESL learners, whilst auditory appears to be the least favoured modality. On the other hand, the study conducted by Psaltou-Joycey and Kantaridou (2011) did not reveal any statistically significant differences between plurilingualism and learning styles.

3. Research questions and hypotheses

The present study investigates the perceptual learning style preferences of monolingual and bilingual EFL learners. As far as we know, there seems to be no research on monolingual and bilingual EFL learners in the Spanish educational system, specifically in the second year of non-compulsory secondary education. They are students who are neither adolescents nor adults (mean age 17.1) in the last year of education in the high school. Recognising their learning styles will make them aware of their own preferences for learning, identify their strengths and weaknesses, and become more independent in language learning. With this investigation, the preferences monolingual and bilingual EFL learners have for learning will be acknowledged. It would unveil information on whether the knowledge of languages influences their learning style preferences or whether there are other factors that might contribute to them. In this respect, teachers would be cognizant of their students' perceptual learning styles and they would be able to accommodate their instruction to all the styles that can be

found in their classrooms. It would imply the implementation of activities related to several styles. In this way, no learning style would be excluded, all students would have the same opportunities and positive attitudes towards learning, and they would be able to enhance their learning.

Based on previous findings, this study aims to answer the following research questions:

1. What are the most and least favoured perceptual learning style preferences of monolingual and bilingual 12th grade EFL learners?
2. Are there any statistically significant differences between students' linguistic profiles (monolingualism and bilingualism) and perceptual learning style preferences?

Considering these research questions and the results obtained in previous investigations, the following hypotheses were tested:

H_{01}: Monolingual and bilingual EFL learners prefer the visual learning style, whilst the auditory modality is the least favoured.

H_{02}: There are not statistically significant differences between students' linguistic profiles (monolingualism and bilingualism) and perceptual learning style preferences.

4. Methodology

This study is quantitative as it deals with numerical data and descriptive because it examines the perceptual learning style preferences of monolingual and bilingual EFL learners, measured by a five-point Likert scale questionnaire. It follows a cross-sectional design as data were collected at a specific point in time from a sample of 12th graders, and it is also correlational because the strength of association between learning style preferences and linguistic profiles is measured.

4.1. Participants

The sample consisted of 60 EFL learners (mean age 17.1) who were enrolled in the last course of Spanish post-secondary education (equivalent to the 12th grade) in a state school in La Rioja, a Spanish monolingual autonomous community. The monolingual cohort was composed of 47 Spanish native speakers (78.33 per cent). The bilingual cohort was constituted by 13 immigrant students (21.67 per cent) who came from Bulgaria, Macedonia, Romania, and Saudi Arabia. In line with the reports of the headmaster of the high school and their teachers, these bilingual speakers were first-generation immigrants who were born in European or non-European countries and schooled in Spanish since primary education. They differed in their mother tongue which was learnt in their country of birth. Six students had Arabic as their L1 (10 per cent), one informant was a native speaker of Bulgarian (1.67 per cent), two students had Macedonian as their L1 (3.33 per cent), and four were native speakers of Romanian (6.67 per cent). These bilingual learners had a native competence in their L1 and Spanish. They learnt Spanish when they came to Spain and, as it is the official language of institutions and schooling in La Rioja, they achieved a native competence in Spanish as well. According to the teachers, the L1 of the bilinguals was the language of communication with their families when they were at home, since some of those families did not speak Spanish. Both the monolingual and bilingual groups were learning English as a FL which was taught as a curricular subject. Teachers reported that their students' level of English was B1, which coincided with the level assigned to the 12th grade by the educational board of La Rioja.

4.2. Data collection instruments and procedures

The Learning Style Survey (LSS) questionnaire was designed by Andrew D. Cohen, Rebecca L. Oxford, and Julie C. Chi (2009) to measure students' general approach to learning, more specifically, eleven learning style preferences. It is composed of eleven parts and 110 items in total. The participants of this study were only asked to complete "Part 1: How I use my physical senses", since it addresses the perceptual learning styles (visual, auditory, and tactile/kinaesthetic), which are the aim of this paper. As opposed to the PLSPQ (Reid, 1995), Cohen et al. (2009) grouped together the tactile and kinaesthetic styles. The first part of the LSS consists of 30 behavioural statements, 10 each conform to the visual, auditory, and tactile/kinaesthetic modalities. Considering their behaviour in learning, informants have to circle their answer based on a five-point Likert scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always).

The visual modality comprises the following items:

1. I remember something better if I write it down.
2. I take detailed notes during lectures.
3. When I listen, I visualize pictures, numbers, or words in my head.
4. I prefer to learn with TV or video rather than other media.
5. I use color-coding to help me as I learn or work.
6. I need written directions for tasks.
7. I have to look at people to understand what they say.
8. I understand lectures better when professors write on the board.
9. Charts, diagrams, and maps help me understand what someone says.
10. I remember peoples' faces but not their names (Cohen et al., 2009: 1).

The auditory modality comprises the following items:

11. I remember things better if I discuss them with someone.
12. I prefer to learn by listening to a lecture rather than reading.
13. I need oral directions for a task.
14. Background sound helps me think.
15. I like to listen to music when I study or work.
16. I can understand what people say even when I cannot see them.
17. I remember peoples' names but not their faces.
18. I easily remember jokes that I hear.
19. I can identify people by their voices (e.g., on the phone).
20. When I turn on the TV, I listen to the sound more than I watch the screen (Cohen et al., 2009: 1).

The tactile/kinaesthetic modality comprises the following items:

21. I'd rather start to do things, rather than pay attention to directions.
22. I need frequent breaks when I work or study.

23. I need to eat something when I read or study.
24. If I have a choice between sitting and standing, I'd rather stand.
25. I get nervous when I sit still too long.
26. I think better when I move around (e.g., pacing or tapping my feet).
27. I play with or bite on my pens during lectures.
28. Manipulating objects helps me to remember what someone says.
29. I move my hands when I speak.
30. I draw lots of pictures (doodles) in my notebook during lectures (Cohen et al., 2009: 2).

The first part was distributed in Spanish after being granted the permission to use the questionnaire and translate it into Spanish by The Center for Advanced Research on Language Acquisition (CARLA), University of Minnesota. The questionnaire was translated so that the informants' answers were more accurate owing to their better understanding of their L1 or L2. As stated above, most participants (78.33 per cent) had Spanish as their L1 and the rest (21.67 per cent) had Spanish as their L2, but they spoke and used it in their daily life. The LSS questionnaire was chosen because it is suitable for language learning and, unlike the PLSPQ (Reid, 1995) and the SAS (Oxford, 1995), the items are more L2 specific, as "it contains some L2-learning-specific items, mixed with non-subject-specific ones" (Dörnyei, 2005: 146). It also has a specific part that analyses perceptual learning styles, and it is an improvement of Oxford's SAS (1995) (Cohen & Weaver, 2005). Furthermore, it is reported that the test re-test reliability of the first part of the LSS is of .74 (Tight, 2010).

Data were collected in one session during school time. The time allotted to complete Part 1 of the LSS questionnaire was 10 minutes so that they had enough time to read the 30 statements and answer accordingly. At the beginning of the questionnaire, clear instructions were given orally in Spanish to clarify what students were being asked to do. The headmaster of the participating school signed a written consent for the administration of this questionnaire to participants. Students, their parents, and tutors were informed of the research purpose of this task and its voluntary basis. After the data collection, responses were coded and entered into a Microsoft Excel file. Scores for each perceptual learning style were obtained by summing the points of each modality: zero was the lowest point per item and four was the highest. As there were 10 items per modality, 40 were the maximum points to be acquired in each. Therefore, the modality which had the highest overall score was established as informants' perceptual learning style preference. However, when there was not a significant difference in scores among modalities, a mixed-modality preference was determined.

RStudio version 1.2.5019 was used to perform descriptive and inferential statistics. The Wilcoxon rank sum test was performed to ascertain statistically significant differences between students' linguistic profiles (monolingualism and bilingualism) and perceptual learning styles. Finally, the effect size was calculated using Becker's (1998) Effect Size Calculators.

5. Results

The first research question aimed at the identification of the most and least favoured perceptual learning style preferences of monolingual and bilingual 12th grade EFL learners. Table 2 shows the descriptive statistics and classification of monolingual and bilingual learners' perceptual learning styles. Data indicated a higher means for monolinguals than for bilinguals, which suggested that monolingual EFL learners reported a higher preference for perceptual learning styles than bilinguals. As can be seen in Table 2, both monolingual and

bilingual participants concurred with their perceptual learning style preferences. The visual modality seemed to be the preferred perceptual learning style, followed by the tactile/kinaesthetic modality, whilst the auditory learning style appeared to be the least favoured.

Monolinguals			**Bilinguals**		
Perceptual styles	Mean	SD	Perceptual styles	Mean	SD
Visual	23.681	.483	Visual	24.077	.416
Auditory	19.702	.719	Auditory	19.692	.979
Tactile / Kinaesthetic	23.085	.45	Tactile / Kinaesthetic	21.769	.351
Total	22.16	3.104	Total	21.85	2.566

Table 2. Descriptive statistics for monolinguals and bilinguals' classification of perceptual learning styles.

Figures 1, 2 and 3 display the number of monolingual students who chose which scale for each item per perceptual learning style. Item 1 ("I remember something better if I write it down"), item 19 ("I can identify people by their voices (e.g., on the phone)"), and item 29 ("I move my hands when I speak") appeared to be the most favoured. Nevertheless, item 6 ("I need written directions for tasks"), item 17 ("I remember people's names but not their faces"), and item 28 ("Manipulating objects helps me to remember what someone says") seemed to be the least preferred. Regarding the visual learning style (see Figure 1 below), monolingual EFL learners appeared to prefer written assignments rather than reading or visualizing information. Figure 2 shows that these learners might favour talking or hearing someone talk, rather than sounds that might come from music or TV. Concerning the tactile/kinaesthetic learning style, monolinguals seemed to prefer activities related to movement rather than those which involve touch.

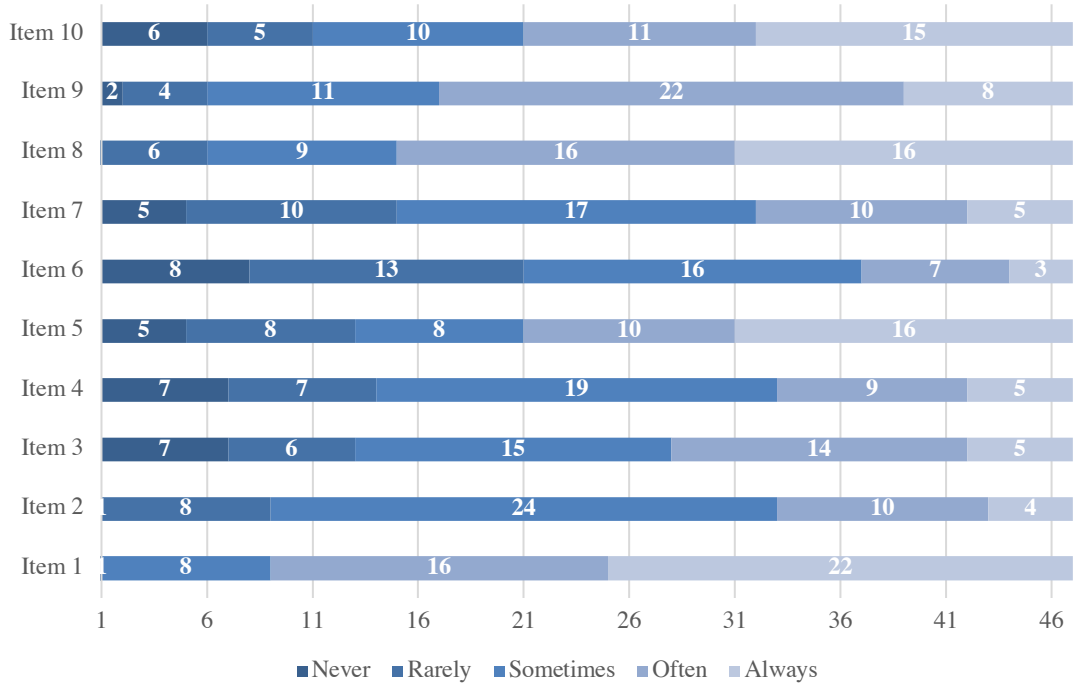

Figure 1. Number of monolingual students who selected the different scales per item concerning the visual learning style.

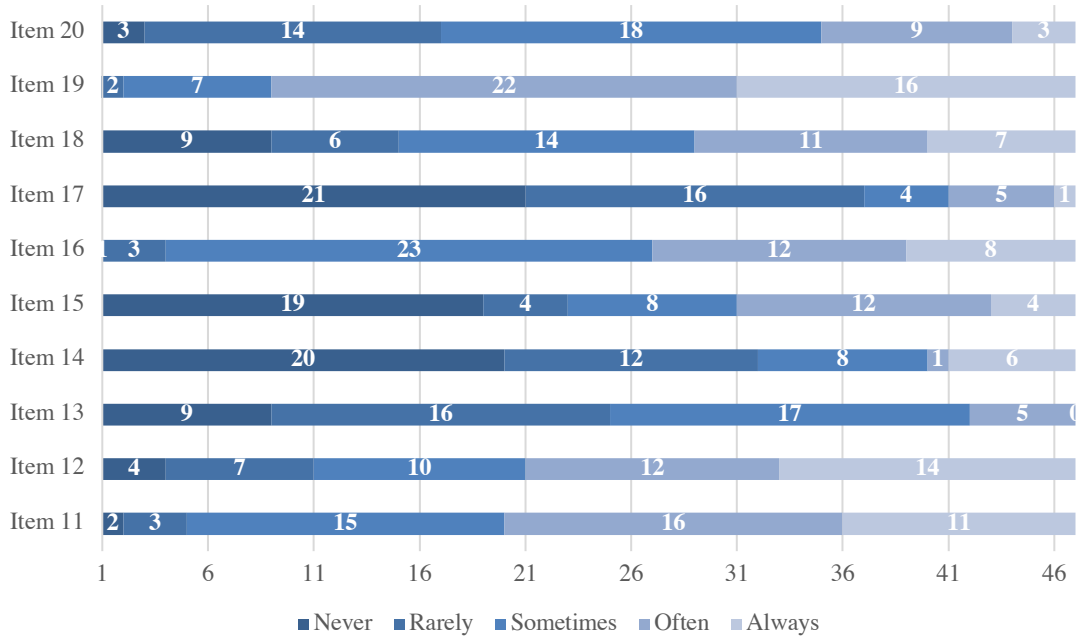

Figure 2. Number of monolingual students who selected the different scales per item concerning the auditory learning style.

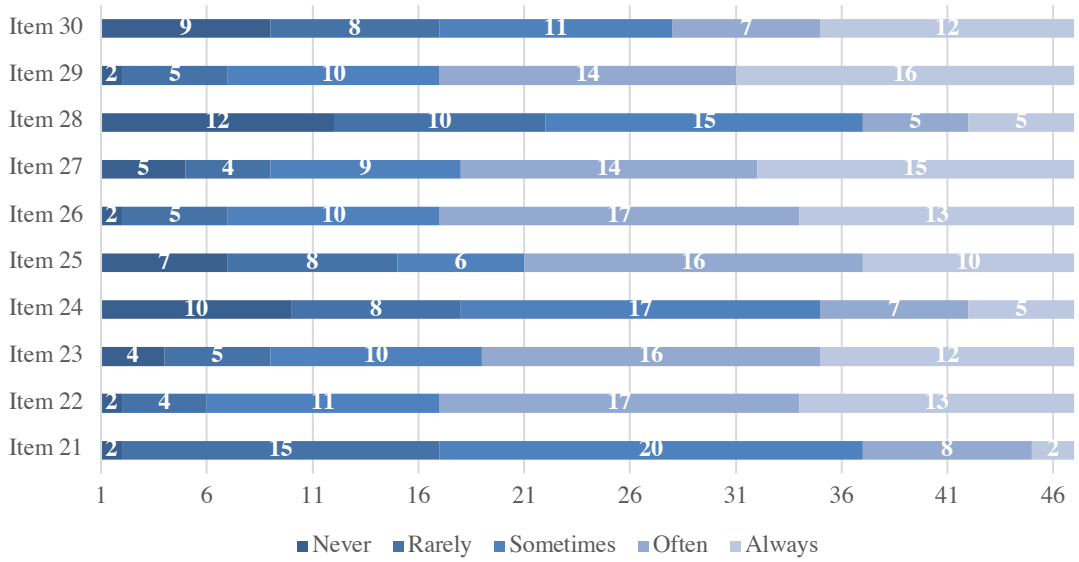

Figure 3. Number of monolingual students who selected the different scales per item concerning the tactile/kinaesthetic learning style.

Figures 4, 5 and 6 show the number of bilingual students who chose which scale for each item per perceptual learning style. Item 1("I remember something better if I write it down"), item 12 ("I prefer to learn by listening to a lecture rather than reading"), and item 29 ("I move my hands when I speak") seemed to be the preferable. However, item 10 ("I remember peoples' faces but not their names."), item 14 ("Background sound helps me think") and item 28 ("Manipulating objects helps me to remember what someone say") appeared to be the least favoured. Similar to their monolingual peers, these learners seemed to feel more comfortable writing than visualizing information (see Figure 4). Likewise, concerning the auditory learning style, bilingual EFL learners

appeared to prefer talking or hearing someone talk, rather than sounds that might come from music or TV. They also favoured activities related to movement rather than those which involve touch (see Figure 6).

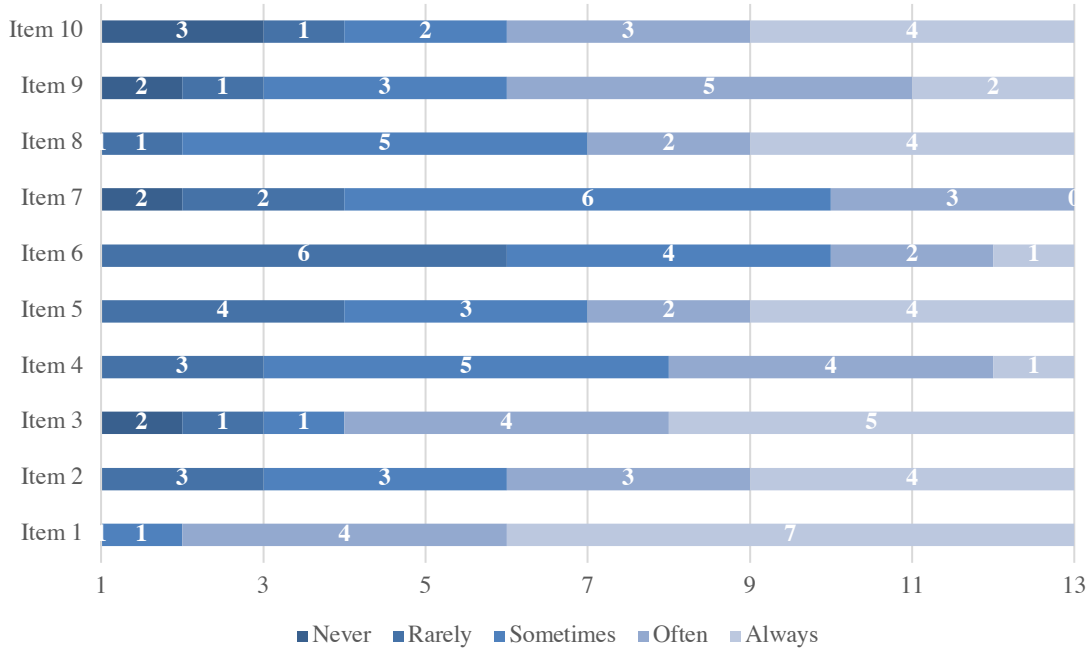

Figure 4. Number of bilingual students who selected the different scales per item concerning the visual learning style.

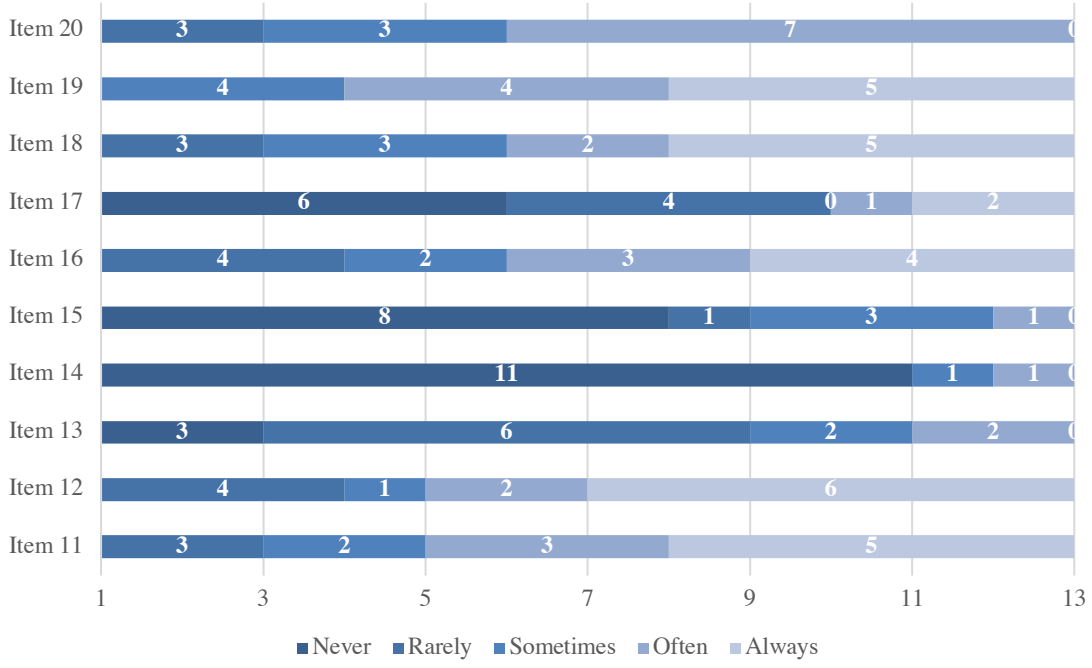

Figure 5. Number of bilingual students who selected the different scales per item concerning the auditory learning style.

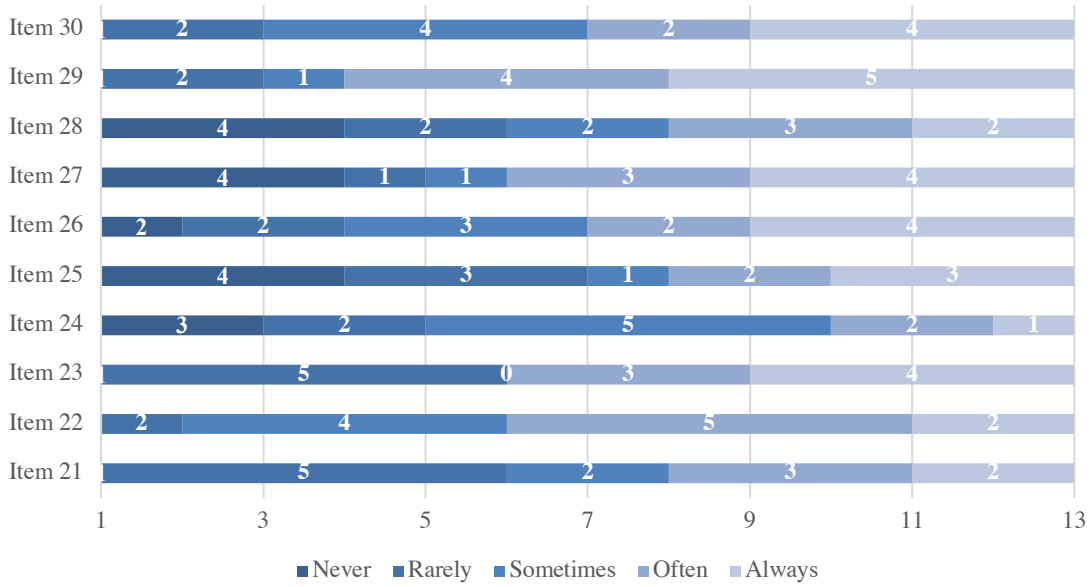

Figure 6. Number of bilingual students who selected the different scales per item concerning the tactile/kinaesthetic learning style.

The objective of the second research question was to determine whether there were any statistically significant differences between 12th grade EFL learners' linguistic profiles (monolingualism and bilingualism) and their perceptual learning style preferences. As perceptual learning styles were measured on a five-point Likert scale, our sample did not meet the normality assumption. Therefore, the Wilcoxon ran sum test was performed. Table 3 reveals that there were not statistically significant differences between the students' linguistic profile (monolingualism and bilingualism) and their perceptual learning style preferences, W=285.5, p>.05.

Wilcoxon rank sum test	
W	p-value
285.5	0.7262

Table 3. Wilcoxon rank sum test.

Regarding the effect size for the comparison between two means, results showed that Cohen's d was .11 which means that there was a small effect size (see Table 4). Likewise, the strength of association was positive but very small.

Cohen's *d*	**Effect-size *r***
.11	.05

Table 4. Cohen's d and effect size.

In sum, the monolingual and bilingual EFL learners of the present study appeared to have similar learning preferences, as both groups seemed to favour the visual modality and dislike the auditory modality. In fact, no statistically significant differences were obtained.

6. Discussion

With reference to the first research question, data indicated that both monolingual and bilingual EFL learners had a preference for the visual learning style, whereas the auditory modality was the least favoured. Therefore, our first hypothesis was confirmed. On the one hand, the fact that the visual learning style was the preferred modality of monolingual students is consistent with the findings of previous studies (Aliweh, 2011; Gilakjani, 2012; Zokaee et al., 2012; Zarei & Pourghasemian, 2016; Hatami, 2018; Kim & Kim, 2018). However, in respect of bilingual students, previous investigations were not found to compare our results. Visual learning style might be the preferred modality because textbooks seem to be the main medium of instruction in EFL learning (e.g., Hutchinson & Torres, 1994; Jiménez Catalán & Mancebo Francisco, 2008; Gibbons, 2015; Salbego et al., 2015). EFL textbooks typically include a large number of pictures, readings, vocabulary, and grammatical exercises, which are predominantly visual. In addition, EFL teachers might also use visual materials, such as Power Point or Prezi presentations, to support their teaching. This idea could also be applied to learning in general, which is mainly founded on visual materials as well. Students learn by using textbooks or taking notes (Hatami, 2018) from both what their teachers explain and the slides of their teachers' presentations. As Salbego et al. (2015: 6) emphasized: "images are part of our everyday lives and visual literacy has become very important in educational contexts". Accordingly, learning is primarily based on visual materials and this might be the reason why the majority of students preferred the visual learning style, regardless of being monolingual or bilingual.

Concerning monolinguals' least favoured perceptual learning style, this finding concurs with previous studies (Abdollahzadeh & Amiri, 2009; Aliweh, 2011; Zokaee et al., 2012; Derakhshan & Shakki, 2018; Hatami, 2018). Notwithstanding, the fact that the auditory learning style was bilinguals' least favoured modality could not be compared with other studies owing to the scarcity of research. This outcome might have been achieved because audio materials are not as widely used as visual materials in both EFL and general learning contexts. It is true that audio materials are also employed in teaching, for example, listening exercises in EFL learning, audio recordings, or listening to the teacher's lectures or pronunciation in the classroom. Nevertheless, the time devoted to audio exercises is considerably lower than to visual exercises (Hatami, 2018; Kim & Kim, 2018). Another reason might be because listening is considered to be the most difficult skill in EFL learning (e.g., Goh, 2002; Vandergrift, 2007; Nushi & Orouji, 2020).

As for the second research question, results suggested that there were not statistically significant differences between EFL learners' linguistic profiles (monolingualism and bilingualism) and their perceptual learning style preferences. In fact, the effect size and the strength of association were small. Therefore, our second hypothesis was confirmed. This finding corroborates the results obtained by Psaltou-Joycey and Kantaridou (2009), who investigated the perceptual learning style preferences of monolingual and bilingual university students in Greece. As in the present study, they did not find any statistically significant differences between perceptual learning styles and plurilingualism. This outcome implies that being monolingual or bilingual, that is, knowing several languages, does not influence the preferences students have for learning them. At the end of the day, both monolingual and bilingual learners are exposed to the same input, learning materials, and ways of instruction in the educational context, which might have made them develop similar perceptual learning style preferences. Moreover, this finding also entails that perceptual learning style preferences might not be determined exclusively by the number of languages EFL learners know. As one of the reviewers suggested and as it was explained in the literature review, their preferences might also be influenced by other affective, cognitive, and cultural factors that are unique to each individual.

Taking everything into consideration, the present study has some limitations. The sample of informants was small, since only 60 students participated in this research. In addition, this investigation was conducted in only one state school of non-compulsory post-secondary education. Therefore, the findings obtained cannot be taken as representative of either the population of 12th grade students, or the monolingual autonomous community of La Rioja. Another limitation was that the LSS questionnaire only reported the perceptual learning style preferences that learners believed they had. It might be the case that they believe they have a specific preference for learning and then they resort to another one when they are in the actual process of learning.

This research has some pedagogical implications for FL education because results indicate the existence of perceptual learning style preferences in the EFL classroom. They also suggest that there are no differences between monolinguals and bilinguals in their preferences for learning. Despite this finding, research is still important to identify the general preferences learners have towards learning and if their styles are considered in the classroom. Teachers could implement new methodologies and structure their lectures and teaching materials according to their learners' preferences. In this way, FL education could be improved and it would become a more learner-centred approach in which students would feel more positive and motivated towards learning, since no learning preference would be excluded.

7. Conclusions

The present investigation has explored the perceptual learning style preferences of monolingual and bilingual EFL learners in the second year of Spanish non-compulsory secondary education in La Rioja, Spain. The first finding indicated that both monolingual and bilingual learners preferred the visual learning style, whereas the auditory learning style was the least favoured by both groups. The second finding suggested that there were not statistically significant differences between monolingual and bilingual EFL learners in their perceptual learning style preferences. This means that the linguistic profile of students did not affect the preferences they had for learning, although affective, cognitive, and cultural factors might have influenced these results.

As for future research, studies could be conducted at the beginning of the academic year in the 12th grade to determine the monolingual and bilingual students' perceptual learning style preferences. Afterwards, instruction in perceptual teaching and learning styles could be given to teachers and students respectively so that teachers could improve their teaching skills and learners could become more familiar with other ways of learning. At the end of the academic year, the LSS questionnaire could be implemented again and ascertain whether EFL learners have the same preferences or they have changed them. Subsequent investigations could also include oral interviews with the participants to identify whether the preferences they believe they have according to the questionnaire match the preferences they actually have for learning, thereby overcoming the aforementioned limitation. Likewise, research could be undertaken to examine whether informants who share their mother tongue have the same perceptual learning style preferences or whether mother tongue does not influence those preferences.

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Appendix

CUESTIONARIO DE ESTILOS DE APRENDIZAJE

(Adaptación de "Learning Style Surve: Assesing Your Own Learning Styles" de Andrew D. Cohen, Rebecca L. Oxford y Julie C. Chi (2009) publicado en CARLA Universidad de Minnesota)

Lee las oraciones que vienen a continuación, pensando en lo que sueles hacer cuando aprendes, y rodea una respuesta (0, 1, 2, 3, 4).

0 = Nunca
1 = Casi nunca
2 = A veces
3 = A menudo
4 = Siempre

1. Recuerdo mejor los conceptos cuando los escribo.	0	1	2	3	4
2. Tomo notas detalladas sobre las explicaciones de clase.	0	1	2	3	4
3. Cuando escucho al profesor/a, visualizo imágenes, números o palabras en mi cabeza.	0	1	2	3	4
4. Prefiero aprender mediante métodos multimedia (p. ej. televisión, Internet).	0	1	2	3	4
5. Utilizo diferentes colores para recordar la información fácilmente.	0	1	2	3	4
6. Necesito instrucciones escritas a la hora de realizar los deberes.	0	1	2	3	4
7. Tengo que mirar a mi profesor/a o compañeros/as para entender lo que dicen.	0	1	2	3	4
8. Entiendo mejor las explicaciones de mi profesor/a cuando las escribe en la pizarra.	0	1	2	3	4
9. Los gráficos, diagramas y mapas me ayudan a entender mejor las explicaciones de mi profesor/a.	0	1	2	3	4
10. Recuerdo con mayor facilidad la cara de mis profesores/as o compañeros/as que sus nombres.	0	1	2	3	4
11. Entiendo mejor los conceptos estudiados en clase cuando los hablo con un compañero/a.	0	1	2	3	4

12. Prefiero aprender cuando escucho las explicaciones de mi profesor/a que cuando las leo.	0	1	2	3	4
13. Necesito que me den instrucciones orales a la hora de hacer los deberes.	0	1	2	3	4
14. Tener sonido de fondo me ayuda a pensar mejor.	0	1	2	3	4
15. Me gusta escuchar música cuando estudio.	0	1	2	3	4
16. Entiendo lo que mi profesor/a o mis compañeros/as dicen incluso cuando no puedo verles.	0	1	2	3	4
17. Recuerdo los nombres de mis profesores/as o compañeros/as pero no sus caras.	0	1	2	3	4
18. Recuerdo los chistes que me cuentan con facilidad.	0	1	2	3	4
19. Puedo reconocer a la gente por su voz (p. ej. por teléfono).	0	1	2	3	4
20. Cuando veo la televisión, me centro más en escuchar que en ver la pantalla.	0	1	2	3	4
21. Prefiero empezar a hacer una tarea antes que prestar atención a sus indicaciones.	0	1	2	3	4
22. Necesito parar a descansar varias veces cuando estudio.	0	1	2	3	4
23. Necesito comer algo cuando leo o estudio.	0	1	2	3	4
24. Si me dieran a elegir entre sentarme o estar de pie, prefiero estar de pie.	0	1	2	3	4
25. Me pongo nervioso/a cuando estoy sentado/a durante mucho tiempo.	0	1	2	3	4
26. Pienso mejor cuando me muevo (p. ej. caminando de un lado para otro o dando golpecitos con los pies).	0	1	2	3	4
27. Tiendo a morder o jugar con los bolígrafos mientras mi profesor/a explica.	0	1	2	3	4
28. Manipular objetos me ayuda a recordar lo que mi profesor/a o mis compañeros/as dicen.	0	1	2	3	4
29. Tiendo a mover las manos cuando hablo.	0	1	2	3	4

30. Tiendo a dibujar garabatos en el cuaderno mientras mi profesor/a explica.	0	1	2	3	4