

## **Learning styles' influence in SL/FL reading**

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**ABSTRACT:** *Enormous changes have taken place in second and foreign language learning over recent decades [1]. Currently, there is a growing interest in the factors that influence the learning of the four language skills. This accepted interest is especially reflected in the field of Applied Linguistics, which has shifted its emphasis towards learners and learning [2]. In order to prosper in this complex process, students need to get over some obstacles. However, the way they face these difficulties in the classroom setting seems to vary among them due to the different ways they usually perceive information [3]. Hence, this study examines the learning strategies that allow foreign language students to deal with the problems that may arise during their learning process, which may be influenced by their learning styles. In particular, it focuses on direct reading strategies and more specifically with their manifestation in the assorted sensory preferences in English as a foreign language context. Then, it aims to prove that perception varies among individuals and therefore, learners do not use the same learning strategies when they are reading. Finally, the results of a small-scaled study are shown with the intention to provide some evidences that seem to demonstrate conclusively that learning styles have an impact on the direct reading strategies that learners use.*

**Keywords:** *SL/FL, learning styles, learning strategies, direct reading strategies.*

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### **I. Introduction**

Nowadays, learning a language has become an essential component in everyone's lives [2]. Most people need it to survive economically, socially, and often academically. For instance, some companies require workers who have a good command of two or more languages. Moreover, in Spain, having a language certification that proves proficiency at English or other languages is a requirement in order to apply for a Master or an Erasmus program. Then, all these facts support the necessity of using English as a Lingua Franca (ELF) or English for Specific Purposes (ESP). However, it does not mean that everyone succeeds in learning a second or even a third language. There are a lot of factors related to the second language (L2) or foreign language (FL) learning processes that determine the success or failure in coping with changes in this new society [1]. Among these factors, this work deals with some sensory preferences that characterize learners when they read English texts and determine the way they use direct learning strategies. Therefore, the main focus of this research project is on direct reading strategies, which may be a consequence of the effect of students' learning styles.

### **II. Theoretical background**

English language learning has evolved during the last years. In this new century, most people speak more than one language and therefore learners show new needs that teachers have to cover. For this reason, this gradual evolution towards communicative approaches allows open 'strategy-talk' to take place [4]. Besides, "learning is viewed as an active, creative, and socially interactive process [...] and knowledge is considered as an entity to be constructed and not simply transmitted or transferred" [4]. In this sense, new sociocultural contexts are considered and learners are placed at the centre of the language learning process.

#### **2.1. Learning styles and sensory preferences**

According to [5], learning styles are "the biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrible for others" (page 3). Then, this variable involves the characteristics that students use to acquire a language and therefore it may affect their efficiency in the classroom setting. Due to the variety of ways to learn a language, there are pupils who think that this is a boring task while others consider that this is an enjoying activity that also helps them to learn a new language. [6] stated that if they know what they want to learn and how they should do it, this awareness will change their perspectives on learning new things. This assumption is supported by [7], who affirmed that "the individuals should know what their own learning styles are and what characteristics this style has and they should thereby behave according to this style. In this way, the individual can acquire the constantly changing and increasing amount of information without need for the assistance of others" (page 89).

This identification of their own learning style has a lot of advantages. It not only gives language students the opportunity to learn more easily and be successful, but it also provides students the opportunity to have more control over their own, so they become more effective solving the possible problems that may appear in the process of learning.

Students are not conscious of the power of using L2/FL learning strategies for making learning quicker and more effective [8]. For this reason, it is important that teachers identify the sensory preferences of students. As a consequence, they will be more effective in their L2/FL instruction because they will use the most appropriate strategies in class. Additionally, it is recognized that students who have been educated in areas that do not have relation with their learning style, are less confident and have difficulties to be successful. Thus, if teachers identify students' sensory preferences and teach in the appropriate way according to it, students will academically succeed and will have great attitudes towards languages [9]. For this reason, if language instructors use a varied methodology which includes information that can be perceived in different ways, it will help students to be successful and control their process of learning. It is difficult to distinguish the learning styles of students but it is not an impossible task.

According to [10], "by far the most common type of assessment tool for L2/FL learning styles is the written survey because students can answer questions that reveal their particular style preferences" (page 8). Then, this is a good instrument for teachers who can identify what learning styles are in class. "L2/FL teachers should select the best version that contains a different focus in order to meet the needs of all students in the class" [10]. Apart from this, "people's learning styles varies because everyone is different from one another naturally and this offers instructors the opportunity to teach by using a wide range of methods in an effective way" [11]. For this reason, teachers cannot take an individual attention to each of their students and they should strive to provide a variety of learning experiences.

Besides, not only teachers should know what the sensory preferences of their students are, but they should also be conscious of their own preferred learning style because it can have an influence on their approach to planning, implementing and evaluating instruction [12]. According to [13], "it is important to understand learning styles to ensure that tutors are instructing according to the learner's style and not the tutor's" (page 1). Teachers tend to mirror their own learning styles when they provide instructional activities in the language classroom [14]. In other words, not only students should be aware of their own learning style but also teachers need to be conscious of this as it may influence the way they teach. If they teach according to their own style, it can suppose a limitation for learners because they will not use all their senses and perception will always be the same. For this reason, they need to balance all the learning styles that may appear in class and offer a balance of class and experimental activities. In this way, teachers would provide their students with an increasing knowledge of the use of learning strategies in class. The following table enumerates some of the aforesaid aspects that contribute to affirm that learning styles' awareness is important in the classroom setting for both teachers and learners (see Table 1).

<b>THE IMPORTANCE OF LEARNING STYLES</b>	
<i>Teachers</i>	<i>Learners</i>
They make the same teaching method wonderful	They change their perspective on learning languages and become more satisfied with the environment they interact with
They are more effective in their L2 instruction as they give learners the opportunity to learn in different way.	They learn more easily and are successful
They are conscious of their own learning style and therefore they use varied strategies in class.	They have more control over their own learning and take responsibility of their own learning.

**Table 1.** The importance of Learning Styles

As it can be seen, learning styles have a relevant role in class as they affect the language learning process. Then, their identification allows learners to know how they perceive the information and it is really useful for them in order to be able of using the best strategies in order to be effective and fit their needs. This importance is translated into benefits. According to [15], one of the benefits of increasing learners' awareness of their own learning styles is the higher interest and motivation in the learning process, which implies a students' increased responsibility for their own learning. Then, it promotes effective learning because it helps students to control their study habits and it may be beneficial for their academic achievements. Therefore, if they know how to integrate their way of perceiving information in the process of learning, they will succeed because this may facilitate and sharper the learning process. Additionally, it also fosters learner's autonomy and efficiency when solving a problem. Additionally, knowledge of learning styles is vital because one of the most important signals in learning is to learn how to be autonomous, that is, that individuals take responsibility for their own learning [11]. Confidence in learning will consistently rise when learners know how to learn. As [7] stated, learning styles give teachers opportunities to recognize individuals and the differences between them. Along this line, [16] recommended teachers to use a wide variety of ways to deal with the subject because "genuine understanding is most likely to emerge and be apparent to others" (page 13). For this reason, motivation can be a great consequence of this awareness. And therefore, [3] enumerated some of the benefits of learning styles awareness (see Table 2).

BENEFITS OF LEARNING STYLES AWARENESS
Longer retention of information.
An ability of creative thought.
To value the own skills and experience.
To understand and accept the own strengths and weaknesses.
To identify study strategies that are helpful and those that may not.
To develop study strategies that are more effective based upon the learning style resulting in greater academic success.

**Table 2.** Benefits of Learning Styles Awareness (Adapted from [3])

Accordingly, both teachers and students need to be aware of their own learning style. Teachers should strengthen weaker styles through balancing class activities that include a wide range of students who learn in different ways. This claim is supported by [17], who affirmed that teachers should take into account these preferences in order to help all students to learn. Moreover, as [18] stated, every opportunity for learning is a chance for learners because it is in their hands to use different ways and develop the learning styles. As a consequence, they will easily succeed because their language skills will be fostered.

It is recognized that students use different sensory approaches in order to acquire a new language: visual, auditory, and kinesthetic [19]; these preferences are further developed in the three next sub-sections.

*Auditory Learners:* They take in messages through the ears, prefer to learn by listening, follow verbal instructions rather than written ones, and enjoy group work [13]. Moreover, they like reading the text out loud, taping lectures and listening to audios, participating in study groups to reinforce lessons, sitting where they can hear the lecture well, and avoiding studying with disturbing noises in background [20].

*Kinesthetic Learners:* They take in messages by body movement, prefer learning by doing and work well with their hands [13]. Moreover, they like taking notes while walking around, studying in short intervals followed by brief exercise breaks, taking courses with labs, participating in role playing exercises, and using a computer to rewrite their notes or use flash cards while moving around [20].

*Visual Learners:* They take message through the eyes, enjoy reading books for knowledge, can easily follow written directions and prefer maps to verbal directions when trying to find a place [13]. Moreover, they learn terms and definitions using DVD's films, flashcards, and time line charts.

In conclusion, students learn in different ways according to their sensory preferences. Therefore, they perceive information according to their learning style. According to [4], learning styles are usually featured by some learning strategies that correlate in a significant way. However, this does not mean that one student cannot experience learning strategies belonging to different learning styles. In other words, visual students are supposed to experience strategies related to their sensory preferences but they can also experience learning strategies related to kinesthetic or auditory learning styles. In the same way students who use different learning strategies may have different learning styles. For example, one student may be 80 % visual and 20 % auditory. As a consequence, this student is supposed to use learning strategies related to the visual style with more frequency than strategies related to the auditory or kinesthetic styles. It is supported by [21] who pointed out that learning styles are characterized according to the more or less frequent use of strategies related to different aspects of learning.

## 2.2. Direct reading strategies

Reading is an essential skill that helps learners to expand their vocabulary and to improve their grammar knowledge. When students read, they are introduced to a wider range of words in different contexts that sometimes are new for them [22]. Then, the reading skill may be considered as an open window to new contexts that helps learners to experience new situations where specific vocabulary and grammar aspects are required in order to succeed. Accordingly, reading is a complex process where learners need to understand specific aspects related to grammar and vocabulary. For this reason, reading is an even more complicated process for L2 and FL language learners, who do not usually have enough language background to understand the full text [23]. Furthermore, teachers may find different educational backgrounds or prior experiences in their students and therefore their language proficiency levels also vary [24]. Consequently, teachers face an important challenge to overcome. Besides, it has been proved that if learners develop reading strategies they are more likely to be good in reading comprehension.

Learning strategies help students to solve learning problems and consequently they become autonomous language learners [25]. Therefore, reading strategies must be taught directly in order to show how reading tasks can be accomplished. In this sense, a well-planned reading strategy instruction that involves directly teaching reading strategies is recommended [23]; since these strategies help learners to identify the textual clues they have to focus on and what to do when they have problems understanding the texts [26]. Moreover, [27] claimed that it is essential to train language learners to be strategic readers. In this line, [28] highlighted that learning to be a strategic reader promotes reading comprehension.

As it has been mentioned, there are three groups of direct strategies: memory, cognitive and compensatory strategies. All these strategies may be developed in each of the four language skills: listening, speaking, writing, and reading. Table 3 links the aforementioned categories with the reading skill, which is analyzed in this paper.

MEMORY STRATEGIES	
1. Creating mental linkages	<ul style="list-style-type: none"> <li>• <i>Grouping</i>: classifying or grouping new words by conceptual similarities or differences.</li> <li>• <i>Associating/Elaboration</i>: associating new language concepts with familiar information already in memory.</li> </ul>
2. Applying images and sounds	<ul style="list-style-type: none"> <li>• <i>Using imagery</i>: creating mental images of what is read.</li> <li>• <i>Semantic mapping</i>: creating semantic maps or diagrams in which the key concepts are arranged and linked with related ones via arrows or lines.</li> </ul>
3. Employing action	<ul style="list-style-type: none"> <li>• <i>Using physical response or sensation</i>: physically acting out a new expression that is read.</li> <li>• <i>Using mechanical techniques</i>: using flashcards with new words and their definitions.</li> </ul>
COGNITIVE STRATEGIES	
1. Receiving and sending messages	<ul style="list-style-type: none"> <li>• <i>Getting the idea quickly</i>: disregarding the rest of ideas and using them as background knowledge. Two types:               <ul style="list-style-type: none"> <li>◦ <i>Skimming</i>: searching for the main ideas.</li> <li>◦ <i>Scanning</i>: searching for specific details of interest.</li> </ul> </li> </ul>
2. Analysing and reasoning	<ul style="list-style-type: none"> <li>• <i>Analysing expressions</i>: breaking down a new word into its component parts.</li> <li>• <i>Analysing contrastively</i>: determining likenesses and differences between the sounds, words or syntax of the new language and the one's own native language.</li> </ul>
3. Creating structure for input and output	<ul style="list-style-type: none"> <li>• <i>Taking notes</i>: taking notes to organise the new ideas.</li> <li>• <i>Summarising</i>: making a shorter version of an original text.</li> <li>• <i>Highlighting</i>: emphasising the main points through colours, underlining, and so on.</li> </ul>
COMPENSATORY STRATEGIES	
1. Guessing intelligently in listening and reading	<ul style="list-style-type: none"> <li>• <i>Using linguistic clues</i>: providing linguistic clues to the meaning of what is read from previously gained knowledge of some other language.</li> </ul>

**Table 3.** Direct reading strategies (Adapted from [29])

All in all, L2 and FL learners usually face difficulties when reading due to their exposure to new vocabulary and complex grammar expressions. In this sense, teachers need to encourage them to use the appropriate reading strategies with the aim to improve their reading comprehension. Accordingly, direct reading strategies allow learners to understand what they read with ease. In relation to the three categories, all of them can be applied to all the situations students may face when reading. However, their appropriateness depends on students' preferences. In other words, students will succeed only if they choose the right reading strategy according to their needs or preferences. For this reason, it is essential considering their learning styles.

### III. The study

#### 3.1. Purpose of the study

In an attempt to expand this line of research, this study aims at exploring the connection between learners' sensory preferences and learners' use of direct strategies when reading in an EFL context. More specifically, this study attempts to address the following research questions (RQs):

RQ 1: Do students with the same preferences (learning styles) use the same learning strategies?

RQ 2: Are some learning styles directly related to specific learning strategies?

RQ 3: Is there any relationship between learning styles and learning strategies?

#### 3.2. Methodology

##### 3.2.1. Context and Participants

The design used for the purpose of this project is a quantitative study. That is, depending on the amount of answers obtained in participants' learning styles and strategies' questionnaires, this study aims to prove that a relationship between them may exist. However, this amount of answers also leads to the choice of different case studies. Therefore, although quantitative reasons can be found in this study, qualitative reasons are also considered.

The case studies in this work are based upon the number of answers related to different learning styles and strategies obtained in two questionnaires (Learning Styles Questionnaire and Learning Strategies Questionnaire). There are a total of 32 subjects; although due to research purposes, 26 were taken into account. In the design, each student had the two printed questionnaires. It was carried out in a secondary school (I.E.S. Matilde Salvador) in Castellón de la Plana (Spain).

The aim of this study consists of the collection of data from the two questionnaires. Then, data is compared with the purpose of obtaining some evidence that seems to prove that a relationship between learning styles and strategies may exist. Therefore, a series of proposed questions related to these two variables are included in the two questionnaires.

The study included three main stages which are clearly explained in Table 4: a) Implementation of the Learning Styles Questionnaire, b) Implementation of the Learning Strategies Questionnaire, and c) Collection and Analysis of the Results.

<b>STAGES FOLLOWED IN THE STUDY</b>		
<i>Stage</i>	<i>Explanation</i>	<i>Appendices</i>
First stage	Students do a questionnaire that includes 10 questions with the intention to identify their learning styles.	Appendix 1
Second stage	Students do a questionnaire that includes 5 questions that aim to identify the reading direct strategies they often use.	Appendix 2
Third stage	The teacher collects the questionnaires and analyses and compares their answers using some templates to obtain the results.	Appendices 3 and 4

**Table 4.** Stages Followed in the Study

The Learning Styles Questionnaire (see Appendix 1) deals with different questions related to daily life and the educational environment. Each answer belongs to a different learning style. It took 15 minutes for the students to do it. Besides, the learning strategies' questionnaire (see Appendix 2) involves some educational problems that may appear in the language classroom. Each problem is associated with three learning strategies that students need to consider. It took 20 minutes for the students to do it. Finally, after finishing the two questionnaires, two different templates were used in order to analyze the obtained results (see Appendices 3 and 4).

Regarding the participants under study, a number of 32 participants were selected from a group taking the EFL subject in the 4th year course of secondary school at I.E.S. Matilde Salvador, in Castellón. Among these thirty-two students, twenty-six were selected for the purpose of case studies. Although they gave their permission to use their data, an individual identification based on numbers (i.e. Student 1, Student 2) was provided in order to safeguard their privacy, considering their age.

The participants were 18 females and 14 males whose age ranged between 15 and 16 years old. Their mother tongue was Spanish or Valencian and all of them started learning EFL when they were 6 years old. As for their proficiency level of English, they generally had an elementary level, which corresponds to an A2 level [30]. Taking into consideration all the aforementioned information, it seems that they shared homogeneous features. However, although some of these variables, such as bilingualism or gender, may play a role they were not considered for the purposes of the present study.

### 3.2.2. Data Collection Procedure

The study took place during the students' regular class time in the third semester (April-June) of the 2015-2016 academic year. More specifically, it was carried out the 10th of May, from 12.55 to 13.45 hours, during their tutorial lesson. The participation in this study was not compulsory but it was presented as an opportunity to help their English teacher with an educational research.

In order for results to be collected, students first had to answer two different questionnaires and then they gave them back to their English teacher. To do so, they put them respecting an order in two different piles. In the first pile, learning styles' questionnaires were gathered, whereas in the other one learning strategies' questionnaires were found. For example, student 1 put his or her learning styles' questionnaire on the left pile and the learning strategies' questionnaire on the right one. Afterwards, this process was repeated consecutively with the other students. Finally, they were picked up and saved in two different folders so as to be able to observe clearly the relationship between the same participant's answers in the two questionnaires.

### 3.2.3. Instruments for Data Collection

The instruments for this study were two questionnaires related to learning styles and strategies. The instructions to do them are found at the beginning of each questionnaire. Both questionnaires were analyzed with two different templates.

#### **Learning Styles Questionnaire:**

In order to determine the students' learning styles, a questionnaire was used, namely, 'How do you learn? Identify your learning styles in ten questions' (see Appendix 1). For the purpose of the present study, this questionnaire consists of ten questions and thirty answers. That is, there are three possible answers in each question and students must choose only one [31; 32].

This questionnaire is structured into ten questions and thirty answers, which are related to daily life and learning environment aspects:

- 1) The first question is related to spelling. Students need to think about what they usually do when they have difficulties to spell a word. Then, they may choose between writing it down, spelling it loud, or tracing the letters in the air.
- 2) The second question is about shopping. Learners are required to imagine what they usually do while they are waiting in the queue to pay. The first option is looking around at other clothes, the second one is talking to another person, and the third one is moving back and forth.
- 3) The third question asks learners how they usually study for an exam. The first answer is by reading, the second one is about having someone asking questions, and the third one considers making up index cards.
- 4) Question number four is about distracting elements. Then, students need to choose what of the three options are the most distracting ones for them while they are studying: people walking around them, loud noises, or an uncomfortable chair.
- 5) The fifth question asks students what they would to find a place when they visit a new city, for example. The three options that they have are: using a map, asking someone for information, and start walking until finding the place.
- 6) Question number six is related to three different classes: art, music and gym. Students need to choose which is their favorite one.
- 7) The seventh question is about different ways that students choose to relax. The first option is by reading, the second one by listening to music and the third one by doing exercise.
- 8) Question number eight gives learners the opportunity to say where they would like to go with their friends: to the cinema, to the disco, or to an amusement park.
- 9) Question number nine is related to teachers. Then, students need to reflect upon the kind of teachers they prefer: those who use diagrams or outlines, those who spend a lot of time explaining a topic, or those who ask them to move around the class when doing an activity.
- 10) The last question asks learners what they remember the best: what they see, what they hear, or what they do. This question may be related to daily life but also to the educational environment.

This questionnaire is conceived in such a way that the student is able to choose the preference that belongs to a specific learning style. These learning styles are grouped into the three aforementioned ones: auditory, kinesthetic, and visual. Regarding the auditory students, as it has already been explained in the theoretical background, they prefer to learn by listening. Besides, kinesthetic learners take in messages by body movement. Finally, visual students prefer written information instead of verbal instructions, for example.

Students are given the opportunity to choose those answers in the Learning Styles Questionnaire that characterize their personal learning profile. To determine students' sensory preferences, the obtained results will be shown in some tables and graphics that express the number of answers related to the three aforesaid learning styles. This questionnaire is designed so that within a multiple choice set, each choice indicates a different sensory preference that can be identified in a template (see Appendix 2).

#### **Learning Strategies Questionnaire:**

In order to determine the students' learning strategies, a questionnaire was used, titled 'How do you read? Identify your reading strategies in five questions' (see Appendix 3). This questionnaire was adapted from Oxford (1990) for the purpose of the present study. It has a total of five questions and fifteen answers. That is, there are three possible answers in each question and students must choose at least one but they can also choose more.

This questionnaire is structured into five questions, which are all related to learning environment aspects:

- 1) The first question asks students what they would do to remember the meaning of a word that is seen by first time. If they choose the first answer, it means they would classify the new word with others they already know. If they choose the second, they would associate the new word with a familiar concept already in memory. Finally, if they prefer the third one, they would create diagrams to link similar concepts.
- 2) Question number two contains the same question than the previous one but in a different context. In this case, the new word is not 'warm' but 'carrot'. In this case, if students choose the first answer, it means they would remember the part of the page it is written. The second answer is related to the generation of a mental visual image that includes the new word and another one that is already known. Finally, the third one considers the representation of sounds to link the new word with familiar ones.
- 3) The third question does not ask students what they would do to remember the meaning of a new word but what they would do to understand a story. Then, students need to reflect upon their own experiences and think what they usually do when it happens to them. If they choose the first question, it means that they would associate physical sensations to the story. The second answer is related to the creation of flashcards. The third answer is associated to the design of diagrams with some questions related to the story.

- 4) Question number four has to do with the understanding of a new concept. The first answer is related to the component parts of the word. In the second answer, students would compare their own language with the new one. Finally, the last answer consists on the comparison of the new language with another one, which may be the own one or another L2 or FL.
- 5) The fifth question is related to the understanding of a text that contains technical expressions and therefore it is difficult to comprehend. Therefore, learners need to choose the option they would feel more comfortable with. The first option is about writing notes next to the text. The second option is related to the emphasis of the most important points of the text through colors or underlining. Finally, the third answer refers to summarizing.

This questionnaire gives learners the opportunity to choose at least five answers that belong to specific learning strategies. Therefore, students can choose the answers in the Learning Strategies Questionnaire that also characterize their personal learning profile. In order to explain the preferred students' learning strategies, the obtained results will be shown in some tables and graphics that express the number of answers related to the aforementioned learning strategies. Finally, this questionnaire has five multiple choice questions with three different answers each one. All the answers correspond to different learning strategies, which can be identified in a template (see Appendix 4).

#### **IV. Results and discussion**

In this chapter, different results obtained are presented. These results are derived from the two questionnaires mentioned in the previous section. These results reveal the students' learning style and the learning strategies they use. Furthermore, due to the relevant characteristics of some of the students who take part in this study, a total of 26 students out of 32 will be analyzed and discussed.

In the first two sections, results obtained from the two different questionnaires are explained and analyzed. In addition, in the third section the 26 case studies are discussed regarding the purpose of this study. Finding out whether a relationship between learning styles and strategies exists.

##### **4.1. Learning styles questionnaire results**

This section shows the students' preferred sensory preferences from the 32 students in this experiment. All these students stated that they did not know what 'learning styles' were, therefore they had never learnt anything in relation to it.

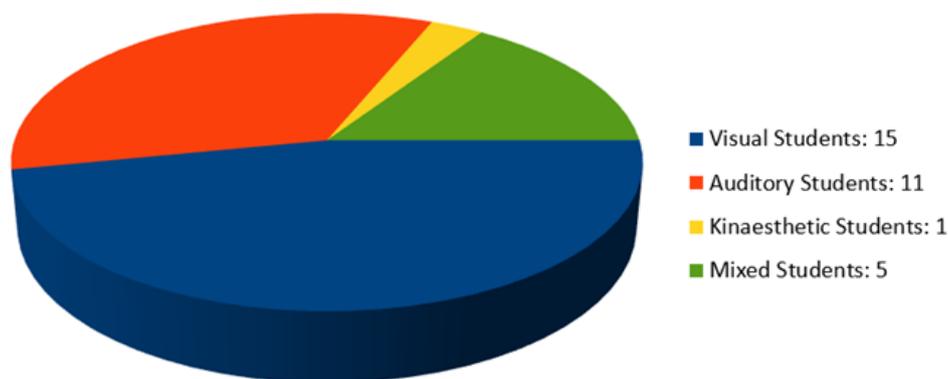
As it is mentioned in the previous section, in order to analyze the students' answers in the learning styles' questionnaire, a template was used (see Appendix 2). In this template, each answer was associated to a specific learning style by colors. For example, color blue is associated to visual students, color red to auditory learners, and color yellow refers to kinesthetic preferences. For this reason, each learner has a different percentage of preferred sensory preferences because as it is explained in the theoretical background, each learner may have different learning styles. However, these percentages show the preferred ways to learn by the students. Table 5 shows the number of answers related to the three learning styles considered in this paper (i.e. auditory, kinesthetic, visual) and therefore the percentages according to the number of answers.

<b>Student Number</b>	<b>Auditory Answers</b>	<b>Auditory Percentage</b>	<b>Kinesthetic Answers</b>	<b>Kinesthetic Percentage</b>	<b>Visual Answers</b>	<b>Visual Percentage</b>
1	2	20%	6	60%	2	20%
2	5	50%	2	20%	3	30%
3	2	20%	4	40%	4	40%
4	4	40%	4	40%	2	20%
5	3	30%	2	20%	5	50%
6	3	30%	3	30%	4	40%
7	5	50%	3	30%	2	20%
8	3	30%	3	30%	4	40%
9	4	40%	0	0%	6	60%
10	4	40%	3	30%	3	30%
11	2	20%	4	40%	4	40%
12	4	40%	1	10%	5	50%
13	4	40%	0	0%	6	60%
14	2	20%	4	40%	4	40%
15	4	40%	0	0%	6	60%
16	4	40%	1	10%	5	50%
17	4	40%	1	10%	5	50%
18	5	50%	3	30%	2	20%
19	5	50%	5	50%	0	0%
20	5	50%	2	20%	3	30%

21	3	30%	0	0%	7	70%
22	6	60%	2	20%	2	20%
23	5	50%	3	30%	2	20%
24	2	20%	3	30%	5	50%
25	5	50%	2	20%	3	30%
26	3	30%	3	30%	4	40%
27	3	30%	2	20%	5	50%
28	5	50%	1	10%	4	40%
29	5	50%	3	30%	2	20%
30	5	50%	1	10%	4	40%
31	1	10%	3	30%	6	60%
32	3	30%	2	20%	5	50%

**Table 5.** Learning Styles Questionnaire Results

As for the results obtained in this questionnaire, it may be claimed that a total of fifteen students are visual (i.e. students number 5, 6, 8, 9, 12, 13, 15, 16, 17, 21, 24, 26, 27, 31, 32). That means that the majority of their answers correspond to this learning style. Besides, a total of eleven students are auditory (i.e. students number 2, 7, 18, 20, 22, 23, 25, 28, 29, 30). Moreover, only one student was kinesthetic (i.e. student number 1). Finally, students number 3, 4, 11, 14, 19 did not obtain any clear result regarding a preferred sensory preference as there was not majority in any of their answers. Therefore, these students are considered 'mixed students' because at least two learning styles are equally preferred. These results are summarized in the following graphic (see Graphic 1).



**Graphic 1.** Learning Styles Questionnaire Results

Moreover, it may be claimed that these results may be a consequence of the use of the new technologies. That is, nowadays learners are familiar with the use of computers or mobile phones and therefore audiovisual online applications are frequently used. Accordingly, the two learning styles that are strengthened are visual and auditory ones.

**4.2. Learning strategies questionnaire results**

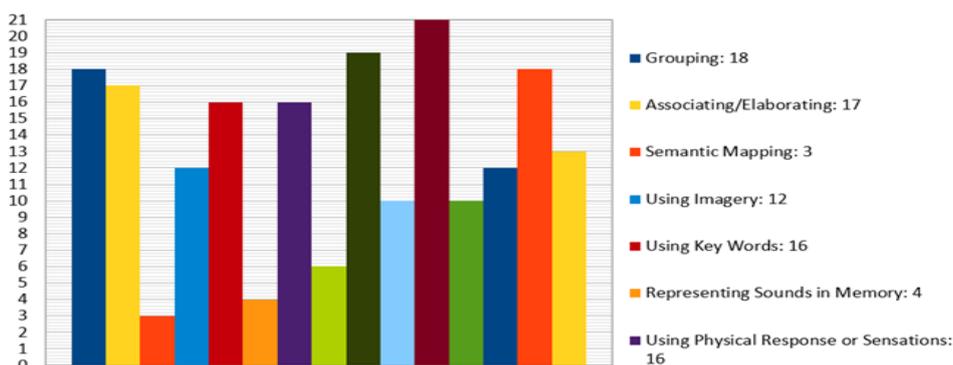
In order to analyze the students' answers in the learning strategies' questionnaire, a template was used (see Appendix 4). In this template, each answer was explicitly associated to a specific direct learning strategy related to reading skills. For example, if a student chose the first answer in the fifth question, it means that he or she liked taking notes in order to understand better a new concept of a text. Besides, students had the opportunity to choose at least five direct reading strategies in each questionnaire, although they could select more than five. Consequently, students chose from five to nine learning strategies in each questionnaire and therefore more than one hundred and sixty answers were analyzed. In particular, one hundred and ninety-five answers were considered for the purpose of this study.

Table 6 shows which strategies each student selected. It is important to mention that these participants are the same as in the previous questionnaire. In other words, 'Student 1' is the same in Table 6 as in Table 5.

Student Number	Grouping	Associating / Elaborating	Semantic Mapping	Using Imagery	Using Key Words	Representing Sounds in Memory	Using Physical Response or Sensations	Using Mechanical Techniques	Getting the Idea Quickly	Analysing Expressions	Analysing Contrastively	Using Linguistic Clues	Taking Notes	Highlighting	Summarising
1	X			X			X				X			X	
2		X			X		X				X		X		
3	X	X				X		X				X	X		
4	X				X				X	X				X	
5		X			X			X			X		X		
6	X				X			X			X		X		
7	X					X			X			X	X		
8	X	X			X		X		X		X				X
9	X			X			X			X					X
10		X		X			X					X			X
11			X			X		X			X	X		X	X
12		X	X		X				X	X		X	X		X
13	X			X			X		X	X	X			X	
14	X			X			X		X	X	X			X	
15	X			X					X	X		X		X	
16	X				X				X		X	X	X		X
17		X				X		X	X		X			X	X
18		X			X		X		X		X			X	
19		X			X				X		X			X	X
20	X		X	X			X		X	X	X			X	X
21	X			X			X				X			X	
22	X			X			X			X				X	
23		X		X				X	X		X			X	X
24	X	X			X		X		X	X		X	X		X
25		X			X				X		X				X
26	X	X			X				X		X	X		X	
27	X				X		X				X		X		
28	X				X		X				X		X		X
29		X		X			X		X			X	X	X	
30		X			X				X	X				X	
31		X			X		X				X			X	
32		X		X					X		X		X	X	

Table 6. Learning Strategies Questionnaire Results

According to the obtained results, the most common strategy in these 32 students is 'Analyzing Contrastively'. On the other hand, the less preferred strategy among them is 'Semantic Mapping'. Apart from that, the other three strategies that are also relevant for them are: 'Getting the Idea Quickly', 'Grouping', and 'Highlighting'. Besides, the other two less common strategies among these 32 students are: 'Representing Sounds in Memory' and 'Using Mechanical Techniques'. Then, the other eight learning strategies that are left (i.e. 'Associating / Elaborating', 'Using Imagery', 'Using Key Words', 'Using Physical Response or Sensations', 'Analyzing Expressions', 'Using Linguistic Clues', 'Taking Notes, and 'Summarizing') do not represent a significant result in this general part of the study. Graphic 2 summarizes the aforementioned results:



Graphic 2. Learning Strategies Questionnaire Results

Then, it may be claimed that students generally reflect upon their own language and compare it with the target one. Therefore, they compare sounds, words or syntax of the new word with the native language. For example, if they read the English word 'cream', they seem to consider the Spanish word 'crema'. Furthermore, it seems they also group new words by conceptual similarities (i.e. hot, fire) or looking for the opposites (i.e. hot, cold). Finally, it seems that they appreciate the relevant information and they generally highlight it. Accordingly, it may be claimed that students usually compare their own language or another language they know with the new one. Besides, considering that these students live in a bilingual community, they may compare Spanish or Valencian with English. Apart from that, they like getting the idea quickly and to do so, it seems they highlight the most important parts of a text or they also write questions about the text that help them to consider the main idea. On the other hand, it seems they do not arrange concepts to create a semantic map. That is, they do not usually link words with related concepts via arrows or lines using the foreign language. Moreover, although the second biggest group is the one formed by auditory students, they do not represent sounds in their minds in order to link the new word to another that is already in memory. Finally, it is also curious that although the biggest group of students is made by visual ones, it seems they do not use flashcards in order to see the definitions of new concepts clearly.

### 4.3. Case Studies

The observations and conclusions obtained in the group study presented herein, acquired a new dimension from the point of view of an analysis of particular cases. In the study of cases, as it is mentioned in the introduction of this section, the qualitative analysis of the responses of a same subject is considered in order to discover the possible connection that may exist between learning styles and learning strategies.

The 26 case studies presented below have been selected out of the 32 students who carried out this study. The reason for this choice lies in the fact that these subjects obtained the same results in the first questionnaire. That is, all of them are visual or auditory. Moreover, the other 6 students did not obtain conclusive results in order to fulfil the purpose of this study. For example, there was only one kinesthetic student and the other five were 'mixed students'. Therefore, only the relationship between visual and auditory students with direct learning strategies in reading skills may be appreciated by this study.

Next, these two groups of students (i.e. auditory and visual students) are described. This study has taken into account the results obtained in the two questionnaires. Therefore, these students are paired according to the obtained results. Besides, some comments are made after each group.

**Auditory Students:** Before making some comments about the results of this group of students, the following tables summarize the results obtained in the two questionnaires by these students (see Tables 7 and 8).

Student Number	Auditory Answers	Auditory Percentage	Kinesthetic Answers	Kinesthetic Percentage	Visual Answers	Visual Percentage
2	5	50%	2	20%	3	30%
7	5	50%	3	30%	2	20%
10	4	40%	3	30%	3	30%
18	5	50%	3	30%	2	20%
20	5	50%	2	20%	3	30%
22	6	60%	2	20%	2	20%
23	5	50%	3	30%	2	20%
25	5	50%	2	20%	3	30%
28	5	50%	1	10%	4	40%
29	5	50%	3	30%	2	20%
30	5	50%	1	10%	4	40%

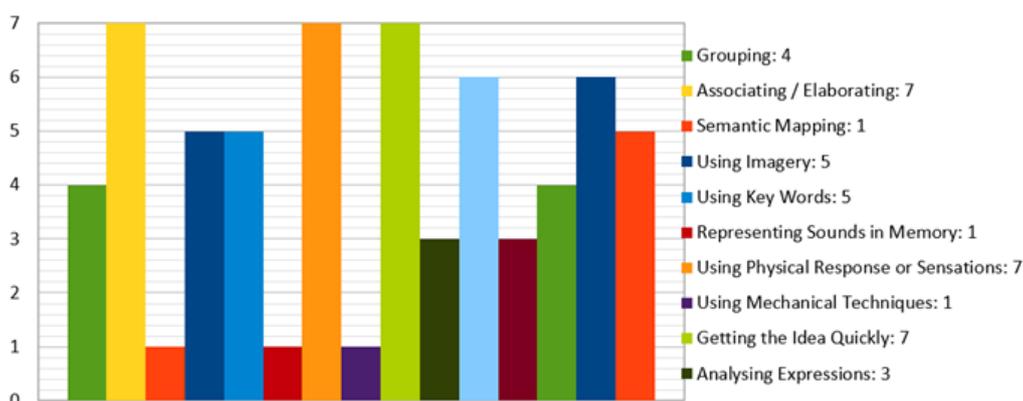
Table 7. Auditory Students Results in the First Questionnaire

According to Table 7, a total of eleven students obtained results that seem to prove that their preferred learning style is the auditory. This means that they enjoy receiving verbal input, avoiding studying with disturbing noises in background or working in groups [20; 11; 33]. However, as it may be appreciated, they also obtained between 10% and 40% in the other two learning styles. Then, it seems to prove that a learner can have more than one learning style, although one of them may be the preferred one.

Student Number	Grouping	Associating / Elaborating	Semantic Mapping	Using Imagery	Using Key Words	Representing Sounds in Memory	Physical Response or Sensations	Using Mechanical Techniques	Getting the Idea Quickly	Analysing Expressions	Analysing Contrastively	Using Linguistic Clues	Taking Notes	Highlighting	Summarising
2		X			X		X				X		X		
7	X					X			X			X	X		
10		X		X			X					X			X
18		X			X		X		X		X			X	
20	X		X	X			X		X	X	X			X	X
22	X			X			X			X				X	
23		X		X				X	X		X			X	X
25		X			X				X		X				X
28	X				X		X				X		X		X
29		X		X			X		X			X	X	X	
30		X			X				X	X				X	

Table 8. Auditory Students Results in the Second Questionnaire

As shown in Table 8, auditory students seem to prefer some strategies rather than others. However, it seems that there is not any strategy that is clearly preferred by them. Graphic 3 clearly shows the direct learning strategies that may be most common among auditory learners.



Graphic 3. Auditory Students Results

The previous graphic seems to demonstrate that the three preferred learning strategies by auditory learners are: 'Associating / Elaborating', 'Using Physical Response or Sensations', and 'Getting the Idea Quickly'. Besides, there are three strategies that auditory students may not use: 'Semantic Mapping', 'Representing Sounds in Memory', and 'Using Mechanical Techniques'. In other words, auditory students seem to associate new language information with familiar concepts already in mind, associate physical sensations with specific words, and use techniques like skimming or scanning that help them to disregard the secondary information. On the other hand, it seems they do not arrange concepts on paper to create semantic maps, make auditory representations of sounds in memory, or use flashcards with words or definitions.

**Visual Students:** Before discussing the obtained results related to this kind of students, Table 9 and Table 10 summarize the information acquired from the two questionnaires.

Student Number	Auditory Answers	Auditory Percentage	Kinesthetic Answers	Kinesthetic Percentage	Visual Answers	Visual Percentage
5	3	30%	2	20%	5	50%
6	3	30%	3	30%	4	40%
8	3	30%	3	30%	4	40%
9	4	40%	0	0%	6	60%
12	4	40%	1	10%	5	50%
13	4	40%	0	0%	6	60%
15	4	40%	0	0%	6	60%
16	4	40%	1	10%	5	50%
17	4	40%	1	10%	5	50%
21	3	30%	0	0%	7	70%
24	2	20%	3	30%	5	50%
26	3	30%	3	30%	4	40%
27	3	30%	2	20%	5	50%
31	1	10%	3	30%	6	60%
32	3	30%	2	20%	5	50%

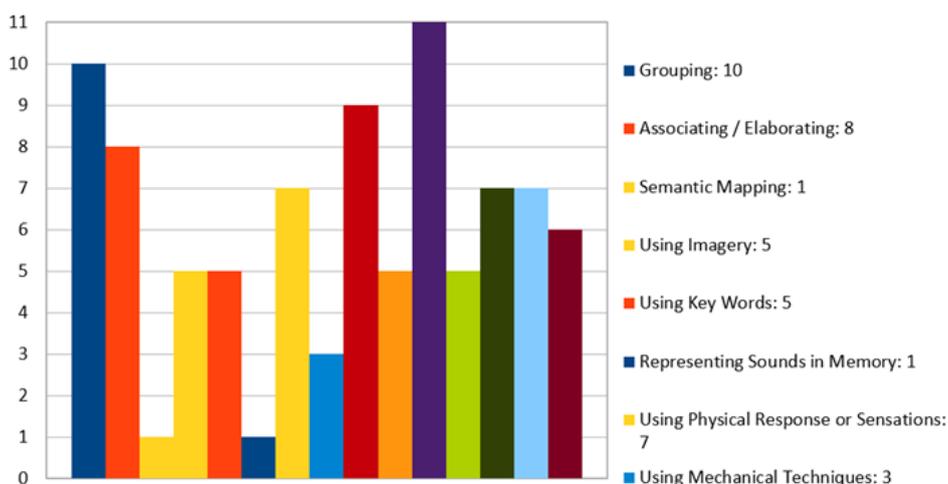
**Table 9.** Visual Students Results in the First Questionnaire

According to Table 9, a total of fifteen students got results that may prove that their preferred learning style is the visual. This means that they usually like taking messages through eyes, using flashcards, highlighting and storing ideas graphically [30; 34].

Student Number	Grouping	Associating / Elaborating	Semantic Mapping	Using Imagery	Using Key Words	Representing Sounds in Memory	Using Physical Response or Sensations	Using Mechanical Techniques	Getting the Idea Quickly	Analysing Expressions	Analysing Contrastively	Using Linguistic Clues	Taking Notes	Highlighting	Summarising
5		X			X			X			X		X		
6	X				X			X			X		X		
8	X	X			X		X		X		X				X
9	X			X			X			X					X
12		X	X		X				X	X		X	X		X
13	X			X			X		X	X	X			X	
15	X			X					X	X		X		X	
16	X				X				X		X	X	X		X
17		X				X		X	X		X			X	X
21	X			X			X				X			X	
24	X	X			X		X		X	X		X	X		X
26	X	X			X				X		X	X		X	
27	X				X		X				X		X		
31		X			X		X				X			X	
32		X		X					X		X		X	X	

**Table 10.** Visual Students Results in the Second Questionnaire

As shown in the previous table, visual students may prefer some strategies instead of others. However, it seems that although one strategy is apparently the preferred one, there are no clear priorities. Graphic 4 clearly shows the direct learning strategies that seem to be the most common among them according to the obtained results in the second questionnaire.



**Graphic 4.** Visual Students Results

The previous graphic seems to demonstrate that the three preferred learning strategies by visual learners are: 'Analyzing Contrastively', 'Grouping', and 'Getting the Idea Quickly'. Besides, there are three strategies that visual students seem to avoid: 'Semantic Mapping', 'Representing Sounds in Memory', and 'Using Mechanical Techniques'. In other words, visual students seem compare their own language with the target one in order to determine likenesses and differences, grouping new words by conceptual similarities or looking for the opposites, and using techniques like skimming or scanning that help them to disregard the secondary information. On the other hand, it seems they do not arrange concepts on paper to create semantic maps, make auditory representations of sounds in memory, or use flashcards with words or definitions.

## V. Conclusion

The aim of the present work has focused on the importance that learning styles have in the language classroom when using specific language learning strategies. In this context, after the implementation of a questionnaire that determined the students' learning styles, a second questionnaire regarding learning strategies was used. Then, data was collected and results were summarized and discussed from some conclusions that were drawn.

Along these lines, it is important to stress the importance of the teachers' role. On the one hand, teachers need to be aware of the importance of building skills and knowledge in a life-long learning context as they learn a foreign language because all of them are equally necessary in order to be competent. Moreover, the communicative approach focuses the attention on the learner and it is essential that they play an active role in the language classroom in order to use the language in real situations. Apart from that, teachers need to know the existence of learning styles and how to deal with them appropriately. Then, not all the learners perceive the information in the same way and therefore methodology should be varied.

At this point, it has been observed that learners have more than one learning style and auditory and visual styles seem to be the most common. Therefore, it may be claimed that the use of the new technologies has a consequence in the students' language perception. Accordingly, teachers should be aware of this fact and should implement the content using innovative tools. Then, all the sensory styles would be fostered and students would improve their weaker learning styles and reinforce their stronger ones.

While the present study has attempted to examine to what extent learning styles affect learning strategies' use, its results and further conclusions must be taken into consideration always bearing in mind the limitations of the specific study undertaken:

Firstly, the number of subjects has been a limitation in this study. Bigger groups of students were not available at the time, and with more students, subtler differences would have been found.

Secondly, the questionnaires used are a product of previous researches carried out by different authors. Nevertheless, other types of questionnaires might be complementary when it comes to determining learning styles and learning strategies with more precision [21; 4].

Thirdly, only one session was devoted to implement the study. It is obvious that more ambitious studies would have required an increasing amount of sessions. Therefore, the obtained results are just a sample and in this sense, future research to explore the RQs should be embraced.

Concerning the conclusions drawn and the suggestions made above, the following ideas for further research are proposed:

- a) It is necessary then to investigate on more variables such as language proficiency level, methodology, and language exposure.

- b) The teacher's role is an object of the investigation because it affects the way learners receive input. For this reason, it is essential to investigate teachers' awareness and thoughts related to students' learning styles and strategies.
- c) Regarding the results obtained, it may be considered that in the future, auditory and visual students will definitely ask for the use of new technologies in the language classroom. Therefore, online questionnaires would be appropriate to study some of the aforementioned variables.

This project has only been a first step towards the design of more complex future studies with bigger quantities of students as subjects. Finally, in the light of the results obtained in this study, this is a field opened to further exploration.

### **Acknowledgements**

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## APPENDICES

### Appendix 1: Learning Styles Questionnaire

#### How do you learn? Identify your learning style in ten questions.

For these ten questions below, please choose only one answer for each question. If more than one answer seem to apply to you, choose the one that applies more frequently. (Adopted from Education Planner, 2011; Soloman and Felder, n.d.)

#### 1. When you are not sure how to spell a word, what are you most likely to do?

- I write it down to see if it looks right.
- I spell it out loud to see if it sounds right.
- I trace the letters in the air (finger spelling).

#### 2. You are out shopping for clothes, and you are waiting in the queue to pay. What are you most likely to do while you are waiting?

- I look around at other clothes on the racks.
- I talk to the person next to me in the queue.
- I fidget or move back and forth.

#### 3. What is the best way for you to study for an exam?

- Reading the book or my notes and reviewing some pictures or charts.
- Having someone asking me questions that I can answer out loud.
- Making up index cards that I can review.

#### 4. What do you find most distracting when you are trying to study?

- People walking past me.
- Loud noises.
- An uncomfortable chair.

#### 5. When you are in a new place, how do you find your way around?

- I look for a map or directory that shows me where everything is.
- I ask someone for directions.
- I just start walking around until I find what I am looking for.

#### 6. Regarding these three classes, which is your favourite one?

- Art class.
- Music class.
- Gym class.

#### 7. What do you like to do to relax?

- Reading.
- Listening to music.
- Doing exercise.

#### 8. Where would you rather go out to with a group of friends?

- I would go to the cinema to watch a film.
- I would go to a disco or to a concert.
- I would go to an amusement park.

#### 9. I like teachers who...

- Put a lot of diagrams or outlines on the board.

- Spend a lot of time explaining a topic.
- Ask us to move around the class to do an activity.

**10. I remember best...**

- What I see.
- What I hear.
- What I do.

**Appendix 2: Learning Styles Template**

**TEMPLATE: How do you learn? Identify your learning style in ten questions.**

*The following answers correspond to **visual**, **auditory** and **kinesthetic** learning styles.*

**1. When you are not sure how to spell a word, what are you most likely to do?**

- I write it down to see if it looks right.
- I spell it out loud to see if it sounds right.
- I trace the letters in the air (finger spelling).

**2. You are out shopping for clothes, and you are waiting in line to pay. What are you most likely to do while you are waiting?**

- I look around at other clothes on the racks.
- I talk to the person next to me in line.
- I fidget or move back and forth.

**3. What is the best way for you to study for a test?**

- Reading the book or my notes and reviewing some pictures or charts.
- Having someone asking me questions that I can answer out loud.
- Making up index cards that I can review.

**4. What do you find most distracting when you are trying to study?**

- People walking past me.
- Loud noises.
- An uncomfortable chair.

**5. When you are in a new place, how do you find your way around?**

- I look for a map or directory that shows me where everything is.
- I ask someone for directions.
- I just start walking around until I find what I am looking for.

**6. Regarding these three classes, which is your favourite one?**

- Art class.
- Music class.
- Gym class.

**7. What do you like to do relax?**

- Reading.
- Listening to music.
- Doing exercise.

**8. Which would you rather go to with a group of friends?**

- I would go to the cinema to watch a film.
- I would go to a disco or to a concert.
- I would go to an amusement park.

**9. I like teachers who...**

- Put a lot of diagrams or outlines on the board.
- Spend a lot of time explaining a topic.
- Ask us to move around the class to do an activity.

**10. I remember best...**

- What I see.
- What I hear.
- What I do.

**Appendix 3: Learning Strategies Questionnaire**

**How do you read? Identify your reading strategy in 5 questions.**

For these five questions below, please choose the strategies you feel more identified with. You can choose more than one strategy. If none of them seems to apply to you, choose the strategy you would feel more comfortable with. (Adapted from Oxford, 1990)

**1. You are reading a text about fires in the forest and you do not understand the word “warm”. What would you do to remember this word?**

- I would classify this word with words that I have already read and that are conceptually similar, such as “fire” or “hot”.
- I would associate this word with a familiar concept that is already in my memory. For example, I would associate it to the chimney of my house.
- I would create a diagram via arrows or lines in which key concepts are linked. For example, I would write the words “climate” and “heat” next to it.

**2. You are reading a text about vegetables and you do not understand the word “carrot”. What would you do to remember this word?**

- I would remember in which part it has been written on the page. In other words, I would remember it by picturing the place where it is located. For example, at the beginning of the text or at the end.
- I would generate a visual image that includes this word and another that I already know. For example, I would imagine a “rabbit” eating a “carrot”.
- I would use the representation of sounds to link this word with a familiar one. For example, I know the word “parrot”, so I would think “I hit a parrot with my carrot”.

**3. You are reading a text about a girl who went on holidays last month. However, you have difficulties to understand the story. What would you do to understand it with ease?**

- I would associate physical sensations to the story. For example, I would feel happy because the girl is having fun but I would also feel nostalgic because I have not been on holidays since last year.
- I would create flashcards that contain some of the words that I do not understand and their definitions. Then, I would move them and match the concept with the meaning.
- I would write diagrams with questions such as “Who is the main character?” or “What is the text about?”.

**4. You are reading a text about murders and you have difficulties with the word “premeditated crime”. What would you do to understand it better?**

- I would break down these new words into its component parts. For example, I would break down “premeditated crime” into three parts: “crime” (bad act), “meditate” (think about), and “pre-” (before).
- I would compare my own language (Spanish) with the language of this new word (English). Then, I would determine likenesses and differences. In this case, likeness is obvious: “premeditated crime” and “crimen premeditado”.
- I would guess its meaning from the clues that my own language or some other language can provide to me. For example, I know some adverts in Spanish of Buddhism meditation and I see that “meditation” is related to “thinking”. Moreover, the prefix “pre-” means the same in both English and Spanish.

**5. You are reading a text about Medicine and you find some technical expressions that are difficult to understand. What would you do to have a clear idea of the text?**

- I would write notes next to the text or using post-its in order to remember what I am reading.
- I would emphasise the most important points of the text through colours or underlining.
- I would make a condensed, shorter version of the text. In other words, I would summarise it.

**Appendix 4: Learning Strategies Template**

**TEMPLATE: How do you read? Identify your reading strategy in 5 questions.**

**1. You are reading a text about fires in the forest and you do not understand the word “warm”. What would you do to remember this word?**

- GROUPING
- ASSOCIATING / ELABORATING
- SEMANTIC MAPPING

**2. You are reading a text about vegetables and you do not understand the word “carrot”. What would you do to remember this word?**

- USING IMAGERY
- USING KEYWORDS.
- REPRESENTING SOUNDS IN MEMORY.

**3. You are reading a text about a girl who went on holidays last month. However, you have difficulties to understand the story. What would you do to understand it with ease?**

- USING PHYSICAL RESPONSE OR SENSATIONS
- USING MECHANICAL TECHNIQUES

- GETTING THE IDEA QUICKLY

**4. You are reading a text about murders and you have difficulties with the word “premeditated crime”. What would you do to understand it better?**

- ANALYSING EXPRESSIONS
- ANALYSING CONTRASTIVELY
- USING LINGUISTIC CLUES

**5. You are reading a text about Medicine and you find some technical expressions that are difficult to understand. What would you do to have a clear idea of the text?**

- TAKING NOTES
- HIGHLIGHTING
- SUMMARISING