Pedagogical-didactic strategies that help boost listening comprehension and production of English

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Abstract

This article is an attempt to establish the effectiveness of the creation of an intended environment for foreign language learning in order to diminish the passive approach of listening and speaking skills of students in communes 1 and 2 of Bucaramanga-Colombia; supporting inclusion from the curriculum, through multichannel stimulation and the implementation of strategies for meaningful learning.

The quantitative research design was configured by setting two groups: a control group and an experimental one with students from an institution that assists population in vulnerable situations. In the experiment, a Manova analysis was performed taking into consideration the results of a pre-test and a post-test for listening and speaking skills, establishing correlations with the perception channels characterized for each of the students in both groups.

A significant difference was achieved (Traza Pillai $p < 0.05$) for the variable listening skill between the control group and the experimental group, with the last one being higher. There was a tendency to show significant differences in speaking ability ($p = 0.062$). Effective strategies are the ones that encourage language interaction in context, collaborative learning, comprehensible input, the reduction of students' anxiety as well as their active and self-directed participation.

Keywords: Strategy, linguistic skills, English, perception channel, learning.

Introduction

The research article presents the results of a didactic intervention that consisted of the implementation of an experiment designed for articulating foreign language learning activities that stimulate the channels of perception of students and strategies to promote the oral production and comprehension in English of students in communes 1 and 2 of Bucaramanga-Colombia.

The proposal is born due to the need to provide children and young people in vulnerable conditions from these two communes with quality education. In that sense, it is important to mention that educational inclusion can be seen from different angles. It is inherent to the principle of education for all. Therefore, it requires a cultural change in how to conceive and develop education in its curricular aspects, such as in the attitude of teachers towards students. Diversity in classrooms calls for the implementation of strategies for the teaching-learning process (Ministry of Education of Ecuador, 2011). Therefore, inclusion as a development opportunity for all, must be considered from a quality and relevant curriculum.

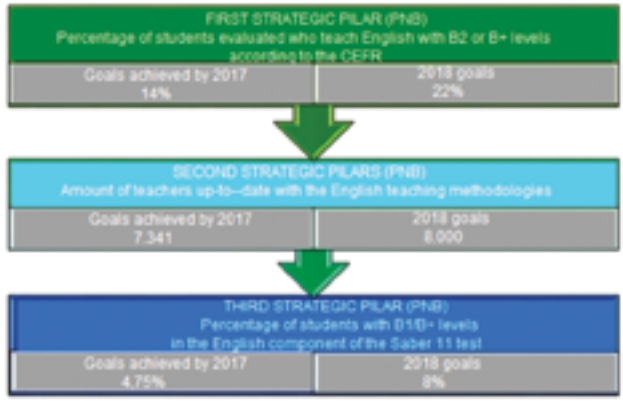
This justifies the implementation of relevant activities that attempt to improve the two oral language skills of the English language, in accordance with the provisions of the National Bilingualism Program (GNP) , formulated by the Ministry of Education -MEN- supported by the British Council in 2004 with the goal of achieving citizens able to communicate in English, so that they can send the country into the processes of universal communication, in the global economy and in cultural openness, with internationally comparable standards (MEN, 2006 p.6).

In this sense, Herazo, Jerez & Lorduy (2012) point out that the general purpose of the GNP lies in the development of the functional proficiency of the English language at the levels of the Colombian education system. Specifically, at the elementary and high school levels, it aims to strengthen the teaching-learning process and it was set as a goal so that by 2025, 50% of senior high school students should attain B1 level in the results of the English component of the Saber 11º test. To this end, the GNP drew up three strategic pillars: 1) preparation of teachers in their communication skills, 2) accompaniment to the Secretariats of Education for training in current English language teaching methodologies, and 3) creation of the *English Please!* teaching material for middle school students in 2012.

The transformation in the process of foreign language teaching-learning begins to be evident from the implementation of the GNP, however, the Ministry of Education considered that the scopes until then were not intended according to the results of the Saber 11º test; that is explained given that the results of the component were very low in terms of objectives. 51% of the students have a minus A1 level, 35% are in A1, 7% in A2 and only 7% are in B1 and over B level (ICFES, 2016).

Consequently, the Ministry of Education found it necessary to consolidate a methodological proposal that would contribute to the scope of the intended objectives of the GNP which would offer learning opportunities for all students throughout the national territory. As a result, the suggested curriculum for language teaching was established, where the Ministry of Education (2016) introduces the Basic Competence Rights in a foreign language in accordance with the Basic Competence Standards in foreign languages. In this same line of ideas, a didactic material called *Way to go* was created to work in the 6th, 7th and 8th grades, which was developed to adapt to the particular needs of the country's institutions. It should be noted that the material mentioned is only used by some state schools that are part of the so-called focused Educational Institutions (IE). Figure 1 shows the achievements in 2017 and the goals set in 2018 in the three structural pillars of the GNP:

Figure 1. *Scope and intended goals of the GNP*



Source: MEN, 2019.

As it can be seen, after launching the new strategies of the GNP, students who reached the B1 and B+ levels in the English area in the Saber 11 test are only 4.75% (ICFES, 2018). These data reflect that the scope of the goal of English proficiency in Colombia has not been significant, the outlook is even more daunting, since there are only 7 years left to get half of the high school students to reach the B1 or B+ levels in accordance with the Common European Framework of Reference for Language Teaching (CEFR) which would mean that the country has achieved bilingualism.

It is imperative to point out that the English component of the Saber 11 test ensures that students demonstrate their communication skills exclusively at the level of reading and use of language, that is, this test only evaluates one of the four linguistic skills in a foreign language, therefore, it does not take into account production skills and listening comprehension. However, although a definite justification is not found for not carrying out a more comprehensive evaluation that involves the four skills, it could be deduced that this fact is due to inconveniences related to the amount of time to perform the oral production test as well as the disbursement of the technical and human resources required to assess the performance of the other skills. This is one of the biggest challenges facing the Colombian Institute for the Promotion of Higher Education –ICFES- in the design of the foreign language component since the validity of a quality test, which measures the development of communicative competence in English which must be linked to every language skill involved in it.

In this regard, López, Ropero and Peralta (2011) emphasize that the current version of the English test component proposed in the Saber 11º test is not valid to establish the CEFR levels, which indicates that it also does not provide information about the linguistic skills in a foreign language of senior high school students of the country (p.12). Contradictorily, the basic standards of foreign language competencies proposed by the Ministry of Education (2016) emphasize that oral production and listening comprehension are of great importance to achieve mastery in a foreign language as well as comprehension and written production skills.

Taking into account the above and in order to integrate the development of these two skills into the teaching-learning process, a documentary review of the strategies that can be used to enhance the production and comprehension of the students attending public educational institutions of communes 1 and 2 was made to integrate them into the intended environment that became the experiment to establish the effectiveness of strategies that incorporate the stimulation of perception channels.

Production and listening comprehension: strategies to improve your acquisition

From a communicative approach, the "listening comprehension" and "oral" skills are related (Serrón, 2001). The acquisition of oral production skills is a progressive and directed process, in which students practice the language in a real way through discussions, conversations or other strategies that motivate them to express themselves in the language of study. The communicative approach has put speaking ability as the most important pillar in the teaching-learning process of a foreign language with the main objective of communicating as well as possible with people who speak the foreign language. However, the acquisition of this skill is hard and demanding, for this reason, many students feel unmotivated after some time studying the language.

Indeed, speaking in English is a complex issue for foreign language learners since achieving effective communication requires the ability to use the language appropriately through social interaction. According to the basic standards of competences in foreign language of the Ministry of Education (2016), oral production is of great importance to be able to communicate just like in the mother tongue. However, not enough work is done and as a consequence, graduates in most Colombian public institutions do not develop their oral skills properly, even more, those who have high scores on written exams have problems expressing themselves orally in the target language. One of the possible causes of this fact lies in the way in which teachers assume the importance of this ability, Goh and

Burns (2012) state that all second language teachers recognize that oral production is one of the most important skills and equally that should be developed by their students; however, some of them are now aware of how the activities should be planned to provide the possibility of success in their development, since many of the strategies used in class do not involve students in speaking activities.

According to Chastain (1998), the speaking ability requires many components since its development goes beyond pronouncing the sounds correctly, choosing the right words or performing a correct grammatical construction. It also requires a broad variety of cultural and social skills and knowledge, likewise, interaction with their partners is of vital importance to develop this skill (p.330-358). For this reason, foreign language teachers face the problem when preparing their students to use the foreign language in this specific skill. The way in which this preparation is carried out and how effective it is depend largely on the teachers' perspectives on the objectives of the activity. This is how, during the planning of the activities, it should be taken into account what kind of vocabulary and what grammatical aspects should be worked on and also how they will be presented so that they are clearly understood by students. Bygate (1987) states that "speakers of a foreign language use their experiences and linguistic knowledge to create a message that should be meaningful to the audience" (p.3).

For Goh & Burns, "oral production is a highly complex and dynamic skill that requires the use of several physical, cognitive and socio-cultural processes" (2012, p.152). Similarly, knowledge and skills have to be activated quickly in real time. From there, students will be involved in meaningful activities where they can use the language, understand and interpret their reality, build new knowledge and, therefore, develop their communication skills.

In addition to the above, Fink (2003) highlights the importance of inspiring students to make connections between the knowledge received during their classes and their lives so that this information can be used in new situations. However, students often have a reluctant attitude to participate in oral activities because they do not perceive the relevance between the topic and the activities they develop in their daily lives. Now, Hedge (2002) indicates that the most important element in oral competence is to identify the different kinds of situations in which the language is produced, then the learners can communicate their own ideas, opinions, beliefs, or tastes. For this reason, it is essential that they know expressions and vocabulary used for this purpose. Likewise, the social function of language is a crucial aspect that must be taken into account; that is why teachers are required to conceptualize oral activities so that students get involved and use English for real and meaningful purposes.

From a cognitive point of view, Levelt (1995) considers that students should conceptually prepare for what they are going to say, formulate their presentations to express their ideas and articulate them in such a way that they are understandable by others. The conceptual preparation includes the selection of the topic or the information, which will depend on the previous knowledge of the speaker and the global knowledge and on what he/she can recover through long-term memory. In small speeches, students should have access to the answers that are relevant and appropriate for the ongoing conversation. In this way, ideas must be formulated, and put into concatenated grammar and specific vocabulary schemes so that students can have access to them. Finally, speakers must know and have control of the sounds and intonation of the language under study so that listeners can understand the message.

These processes present considerable challenges for foreign language learners. In the first place, because they do not have sufficient knowledge of the topic or the structures of discourse that characterize speech in relation to the subject. For this case, it is necessary that teachers take into account the needs of the trainees and determine the time necessary for their preparation and expansion of their knowledge before asking them to carry out an oral production task. Second, students need access to grammar, vocabulary and speech characteristics which allow them to talk about the subject. It is very important that they be given the possibility of practicing these mentioned characteristics, particularly those that structure spoken text patterns (for example, sentences, familiar words, discursive markers) before performing the oral production exercise.

It is also required to pay attention to the ability of students to pronounce the words and expressions they need to speak; Do not obstruct this area little work in the teaching of oral production. Also, Burns & Seidlhofer (2010) suggest that "teachers should present their students with segmental, supra segmental and voice quality characteristics as well as physical dimensions" (p.233).

Another very relevant intellectual aspect of the learning process is metacognition, as well as in listening comprehension, it refers to the attention given to students' strategies to consciously use communicative thinking strategies. According to Vandergrift & Goh (2012), metacognition is related to the knowledge that students have regarding the process and the product of their oral production. Metacognitive awareness comprises three dimensions: 1. experience, 2. metacognitive knowledge and 3. use of strategy. The metacognitive experience is related to the ideas, thoughts or feelings that accompany the cognitive activity itself in relation to the goals pursued. Metacognitive knowledge is the general knowledge that the individual has and the knowledge itself

that one has about oral production. In other words, metacognitive knowledge includes knowledge that is held about oneself as a speaker (for example, self-efficacy in relation to the subject), knowledge about oral production activity, its objective as well as the social and cognitive factors presented, and knowledge of strategies that are probably effective for achieving communicative purposes. Finally, the use of strategy as suggested by the term is knowledge about how discursive strategies and communication are planned, used, reflected and practiced to facilitate oral interaction.

Metacognitive strategies are relevant both in the development of oral production and in the learning of foreign languages in general. According to Alexander (2008) students who achieve their goals reflect upon their learning and develop ways to encourage it. Metacognitive development is related to the concept of the development of greater autonomy to achieve greater reflection and motivation of learning itself and towards learning. In that sense, teachers play a very important role in metacognitive development since they must give their students the opportunities to think about the reasons why they are developing their oral production skills in general and how the development could be related to Foreign language learning. Teachers can motivate their students to reflect on the feedback they are given, as a result, identifying those areas that need improvement and reflect on how these improvements could be made.

Now, regarding listening comprehension, students are exposed to the spoken language from a variety of sources, most of the exposure they received to the foreign language comes from their teacher, whose voice represents the most important source of linguistic *input*. In addition to the teacher, students receive linguistic input by listening to their English classmates, watching television or listening to audios or music in the foreign language. As a consequence, Vandergrift (2011) argues that listening comprehension is the ability of least comprehension and the most difficult to study. Due to this, when performing a listening activity, teachers must provide one or more strategies to their students with the purpose of understanding and learning. Also, Krashen (1981) states that "one of the most important skills to be developed in foreign language learning is listening comprehension" (p.108), because it fosters interaction between individuals and in the same way is used in many areas of work or personal development becoming one of the essential and most useful skills to be able to develop competence in a foreign language. In this interaction process, oral compression and oral production are carried out.

The fact that the teaching, evaluation and interpretation of listening comprehension strategies is not defined in the curriculum is highlighted, as teachers are required to interpret the content of the course plan in their own way. This in turn could lead to differences in the way teachers evaluate their students. Lundahl (2012) states that listening comprehension is a fundamental part in the acquisition of a language. Human beings are not born with the ability to listen actively. This is how we should learn in school. For this reason, the apprentices need to listen and therefore they need to learn to listen. This means that teachers should generate opportunities for students to practice listening actively. Likewise, Börjesson (2012) states that listening comprehension is a complex process and the conditions that the individual possesses for its realization are different. It is necessary that teachers pay more attention to the process than the result. Thus, learning a language can be more efficient if students are not immediately obliged to produce all the material to which they are being exposed.

Similarly, Martín (2012) expresses that from a didactic approach, the purpose of listening comprehension responds to the student

learning to understand, therefore, to know how to listen. In this way, this can help learners have a greater awareness of how to improve their ability to listen and understand. It should be noted that, students in high schools in Colombia have difficulties to develop their listening comprehension skills, because in many occasions the work environment is very limited to develop all four foreign language skills, and more importance is given to reading and writing skills. Additionally, a passive approach is used together with a lack of learning strategies for listening comprehension.

In the same way, only a small number of teachers handle strategies for listening comprehension, as a consequence, it affects their motivation as a teacher. It is also important to state that it is not enough to have students carry out listening comprehension activities. It is also imperative to implement strategies that transform them from passive listeners to active ones. Vandergrift (1999) states that, in order to understand the difference between passive listening and active listening, students need to be instructed in the strategies that work effectively. Teachers should use class time to present, practice and evaluate the effectiveness of these strategies. In this way, learners who use listening comprehension strategies before, during and after listening will be able to develop the skills that give them the ability to monitor their metacognitive process. First, teachers should carefully select short audios and describe what they should do before, during and after listening. Figure 2 expresses some useful strategies to enhance the listening comprehension in each of its three phases.

Figure 2. *Model listening strategies proposed by Börjesson, 2012*

Strategies before listening	Strategies during listening	Strategies after listening
Connect. Teachers should help students understand listening comprehension activity by thinking about what they know about the subject. Thus. they are helped to make connections between what they know and the new information, that is, activation of prior knowledge.	**Listen for answers.** While listening, students give answers to the questions that have been previously asked. In order to identify the questions to ask, you can previously look for the answers to the questions and give the reasons to listen and keep the mind active and alert.	**Reply.** Answering the questions can help improve the ability of listening comprehension.
Predict. Make predictions of what you can learn while listening. Predictions help the brain focus on the activity regardless of whether they are correct or wrong.	**Take notes.** Taking notes of what they hear helps to remember ideas. Highlighting information is of vital importance during the exercise of listening comprehension. However, it is necessary to do it properly: it is possible to create a map, use circles, use abbreviations and symbols.	**Summarize.** Read the notes that were taken before and after class. It is advisable to make a summary of what the activity was about, what you liked and what you learned.
Talk about the new lexicon. Teachers should make a pre-selected vocabulary list for the activity, review that list and think about what is known about it. If the vocabulary is not known, you can work as a team and find out the word using a tool, write synonyms or have a short conversation about the vocabulary to clarify may be useful.	**Listen again** When ideas are difficult to understand, it is necessary to listen again, it is not necessary to wait at the end of the audio to repeat it. Going back to the point that is not very clear and re-listening helps you get out of the confusion faster.	**Expand what has been learned.** Reading and listening to new sources for more information on the subject studied, since learning more about the subject makes it more meaningful and interesting, especially if this learning is shared with others.

Börjesson (2012) states that if the objective is to achieve an active understanding on the part of the students, it is necessary to take into account the metacognitive strategies that refer to the planning control and evaluation of the listening comprehension activities, that is how it has created a seven-step model for teaching these strategies in the classroom (p.8). The seven steps of the Börjesson model are explained below:

- First step: the students receive the new information about the topic and the type of text, they create hypotheses about the text.
- Second, students listen to and verify their hypotheses and add new information.
- Third, students work in groups, discuss and compare their results, and reach consensus.
- Fourth, they listen again, review and control what they understand and what they may not have yet grasped.
- Fifth, they discuss again, highlighting what is most relevant and reflect on what made them understand the audio and specify key words.
- Sixth, they listen to, look for and add information to verify what they have understood.
- Finally, they discuss what helped them understand by suggesting goals, both individually and in groups for the following activity. This model includes bottom-up and top-down listening comprehension exercises, since they must offer a meaningful experience to attract students' attention.

O'Malley's & Chamot's (1990) affirm that language learning strategies fall into three categories: *Metacognitive, Cognitive and Socio-affective*, 1. Metacognitive strategies make reference to the planning, monitoring and evaluation of efficiency of a learning activity; 2. cognitive strategies operate directly on incoming information in such a way that they improve learning; 3. Socio-affective strategies promote interaction between participants to achieve learning. In Table 1, these three categories are explained in greater depth based on Vandergrift (1997).

Table 1. *Learning strategies that encourage listening comprehension*

Metacognitive Strategies:		
Planning Raising awareness about what should be done to achieve the goals in a listening comprehension activity, through an appropriate action plan and a contingency action plan with the purpose of overcoming difficulties that could interfere with the successful completion of the task.	**Monitoring** The review, verification or correction during the performance of students in a listening comprehension activity.	**Evaluation** The review of the results achieved by students in relation to reading comprehension against the internal measurement of accuracy and the totality of an activity.
Cognitive Strategies:		
Make inferences:	Use information that is within the text or conversational context to discover the meaning of unfamiliar language belonging to the listening activity, predict results or fill in missing information.	
Elaboration:	Use prior knowledge and relate it to the knowledge obtained from the text or the conversation to predict the results or fill in empty spaces.	

Summarize:	Make a mental or written summary of the language and information presented in a listening comprehension activity
Translation:	Transfer ideas and words from the mother tongue to the target language
Transfer:	Use knowledge of a language to facilitate listening comprehension in the language of study.
Repetition:	Repeat a part of the language (word or phrase) during the development of a listening comprehension activity.

Socio-affective strategies			
		Anxiety reduction	
To clear doubts Ask for explanations, verify, ask for examples and ask questions about the language or activity itself.	**Cooperation** Work as a team to solve problems, collect information with their peers, review a learning activity and receive feedback on the activity.	Reduce anxiety through the use of mental techniques that make the individual feel more competent to perform the listening comprehension activity.	**Motivation** Provide personal motivation through recognition during the completion of a listening comprehension activity.

Note: Self-elaborated.

Learning involves knowing the cognitive process, recognizing how it is processed individually and how to relate assertively with others, hence the relevance of the strategies described and their evaluation.

Methodology

A projective research was designed aimed at improving the teaching-learning process of English in communes 1 and 2 of Bucaramanga. In its initial phase, a documentary review of the didactic strategies was made from the cognitive, metacognitive and socio-affective areas; then, the channels of perception of seventh grade students were characterized, in a situation of vulnerability in order to adapt these strategies to its sociocultural context, enabling inclusion from the curriculum and through multichannel stimulation for meaningful learning.

The research that precedes this article, is of a projective type oriented to improve the teaching-learning process of English in the establishments of communes 1 and 2 of Bucaramanga that serve students in vulnerable situations. According to Hurtado (2000), projective research is based on the creation of a proposal or a model to solve problems or needs of a practical nature for a social group, institution or a specific area of knowledge, based on a specific diagnosis of the needs of the moment, the explanatory processes or generators involved and future trends. In the preliminary phase, the area plans of five schools that serve vulnerable students in communes 1 and 2 of the municipality of Bucaramanga were analyzed based on the guidelines of the Ministry of National Education in its *Colombia Bilingüe* program. The participating institutions were the result of a convenience sampling, which agreed to be part of the process in response to a formal request from the Bucaramanga Secretary of Education (SEB). In this sense, Otzen and Manterola (2017) state that convenience sampling allows the selection of cases accessible to the researcher due to the proximity or acceptance of the subjects or target institutions.

Subsequently, the channels of perception of seventh-grade students of María Cano institutions were characterized by applying the VARK questionnaire developed by Fleming & Mills (1992), adapted and validated for the context, to two groups of students of this

institution. This questionnaire is a proposal to classify people according to their preference in the sensory modality when processing information or educational content. Next, based on the results of the characterization of the institution's course plans, participants and the results of the VARK test, the adaptation of the didactic, cognitive, metacognitive and socio-affective strategies was proposed by O'Malley's & Chamot's (1990) to the sociocultural context of the students. In order to establish the effectiveness of the aforementioned strategies and to improve listening comprehension and production skills, two groups were formed; control and experimental. The methodology used in the development of foreign language classes for the experimental group used didactic strategies adapted to strengthen the two linguistic skills mentioned, while the control group handled traditional strategies.

The data was processed in the SPSS 19 program, the analysis of the dispersion of the data in the pretest and posttest was carried out using box and whisker diagrams. To validate the experiment, a Manova analysis was carried out with the results establishing correlations with the perception channels characterized for each of the students in the two groups and the performance in the mentioned skills.

Results

The instrument proposed for the characterization of the perception channels was an adaptation of the instrument proposed by (Fleming & Mill, 1992). It was validated with a group of students under the same conditions of those who configured the control and experimental groups. The value of Cronbach's alpha was 0.849. With the above, the reliability of the instrument is set, establishing that the items measure what is intended and are highly correlated (George & Mallery, 2003), according to the scale established by the mentioned authors is at the level of "good". It was calculated using the SPSS 19 software.

The purpose of the instrument is to establish the preferred channel or channels of perception, defining them as:

Visual (V): Preference for the information perceived through the images: maps, diagrams, figures, photos and drawings.

Kinesthetic (K): Perceptual preference related to the use of experience and practice.

Aural / Listening comprehension (A): Preference for the information that is heard or spoken.

Read / Write (R): Preference for the information shown through words.

According to the qualifications obtained after the application of the adapted VARK instrument, the preferred channel of the participants is established, according to the scores. If there are equal qualifications for two or more channels of perception, we talk about multimodal people, that is, they have a preference for two or more channels of perception.

The control and experimental groups were characterized according to what is described in Table 2.

Table 2. *Characterization of the perception channels of the control and experimental groups*

Students	Channel or channels of perception	Number of students control group	Number of students experimental group
Single mode	Visual	4	2
	Kinesthetic	4	12
	Listening comprehension	13	2
	Read write	7	3
Multimodal	GOES	2	2
	RK	2	
Total students		32	21

Note: Self-elaborated.

The students of the control group characterized with a channel of preferential visual perception obtained the best listening average in the pre-test, followed by the students who preferred the listening comprehension channel and thirdly, students with a preferred R-channel that corresponds to preference for the information shown by words (read / write). As detailed in figure 3.

Figure 3. *Listening comprehension ability evaluation by control group learning style*

Note: Self-elaborated.

In the performance test called post-test, the students of the control group in the reading ability obtained better results, except those who were in the multimodal RA category that decreased their average by 0.5 points and the students who were located in the VA multimodal category that maintained an average of 4, the other students and categories obtained an improvement in the score that is discriminated by category in table 3.

Table 3. *Scores obtained in pre-test and post-test linguistic ability to hear from the control group*

Channel	Pre-test score	Post-test score	Difference
TO	4,643	5,000	0.357
K	3,000	4,000	1,000
R	4,286	5,286	1,000
V	4,750	5,000	0.250
RK	4,000	3,500	-0,500
GOES	4,000	4,000	0.000

Note: Self-elaborated.

The students of the control group that have a channel of preferred visual perception obtained the best average in the speaking ability in the pre-test, followed by the students with a multichannel preferred RK channel (read-write / kinesthetic and, thirdly, the students with preferred A channel. As detailed in Figure 4.

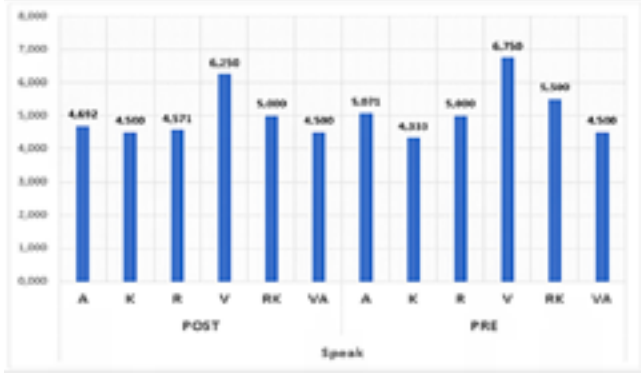
In the performance test called post-test, the students of the control group that have a kinesthetic preferred channel are the only ones that obtained the best results in speaking, in accordance with those described in Table 4. The other groups remained as the case of the students with preferred (VA) channel and the other groups had low results.

Table 4. *Scores obtained in pre-test and post-test of speaking ability in the control group*

Channel	Pre-test score	Post-test score	Difference
TO	5,071	4,692	-0.379
K	4,333	4,500	0.167
R	5,000	4,571	-0,429
V	6,750	6,250	-0,500
RK	5,500	5,000	-0,500
GOES	4,500	4,500	0.000

Note: Self-elaborated.

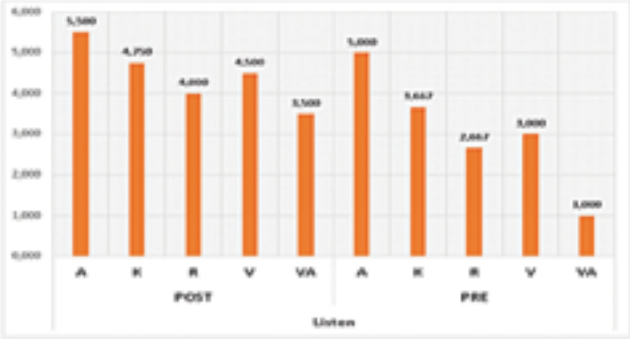
Figure 4. *Evaluation of speaking ability by control group learning style*



Note: Self-elaborated.

Students characterized in the experimental group that have a preferred listening comprehension perception channel obtained the best listening average in the pre-test, followed by students with preferred K channel (experience / practice) and, thirdly, students with preferred V channel were placed corresponding to preference for the information shown by words-images. As detailed in figure 5.

Figure 5. *Evaluation of listening ability by learning style in the experimental group*



Note: Self-elaborated.

In the performance test called post-test the students of the experimental group in the listening ability obtained better results in all categories according to the information recorded in table 5.

Table 5. *Scores obtained in pre-test and post-test in listening ability of the experimental group*

Channel	Pre-test score	Post-test score	Difference
TO	5,000	5,500	0.500
K	3,667	4,750	1,083
R	2,667	4,000	1,333
V	3,000	4,500	1,500
GOES	1,000	3,500	2,500

Note: Self-elaborated.

The students of the experimental group that have listening comprehension (A) preferred perception channel, obtained the best average in speaking ability in the pre-test, the students with preferred K channel were next, and thirdly, the students with preferred R and V channel had the same average. As described in figure 6.

Figure 6. *Evaluation of speaking ability in the experimental group by learning style*

Note: Self-elaborated.

In the performance test called post-test, the students of the experimental group that have preferred A channel (listening comprehension) are the only ones that maintained the same result in pre-test in post-test, the rest of the groups obtained better results without exceeding those of A channel, according to the information presented in table 6.

Table 6. *Scores obtained in pre-test and post-test speaking ability*

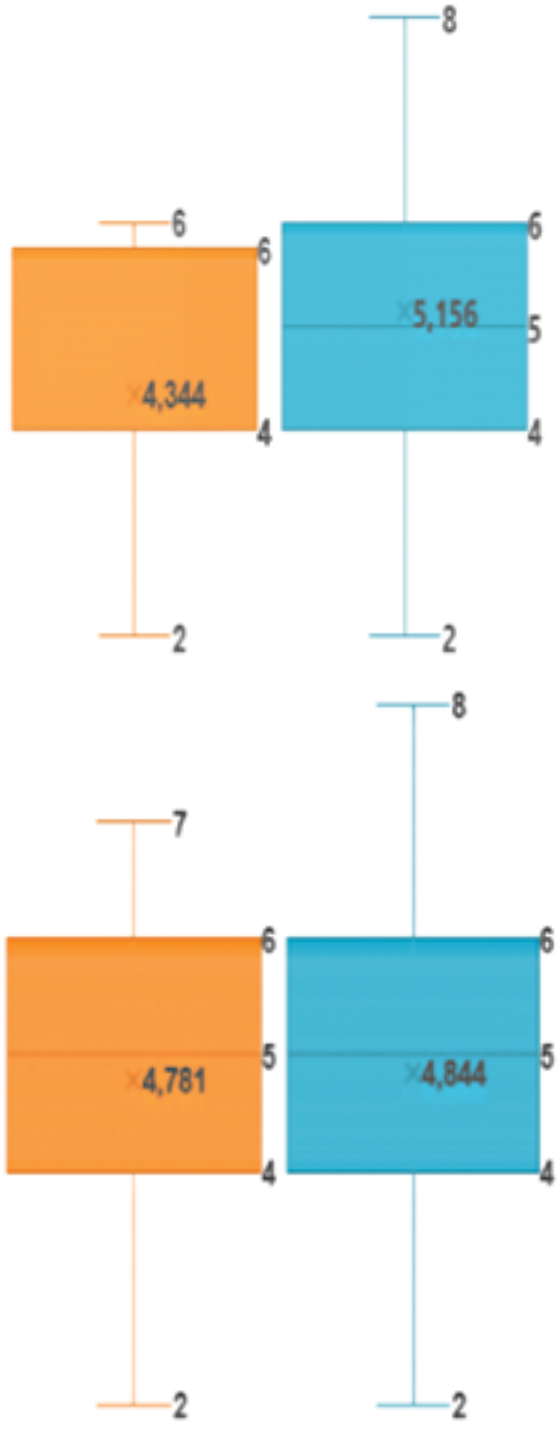
Channel	Pre-test score	Post-test score	Difference
TO	5,000	5,000	0.000
K	4,167	4,833	0.666
R	4,000	5,000	1,000
V	4,000	5,500	1,500
GOES	2,000	4,000	2,000

Note: Self-elaborated.

To analyze the dispersion and symmetry of the data obtained by the students in the pre-test and post-test tests for listening and speaking skills, box and mustache diagrams were implemented.

In Figure 7, the symmetry and dispersion of the data obtained by the students of the control group in the pre-test and post-test tests for listening comprehension and oral production are analyzed.

Figure 7. *Box and mustache diagram for the control group data analysis in pre-test and post-test of listening and speaking skills*



Note: Self-elaborated.

The pre-test data regarding listening ability were organized as follows: the value of Q1 was 4 points and Q3 was 6 points, the RI for this ability was 2. The upper and lower mustaches are asymmetric indicating variability towards low scores. The median shifted slightly towards Q1, that is, towards the low scores.

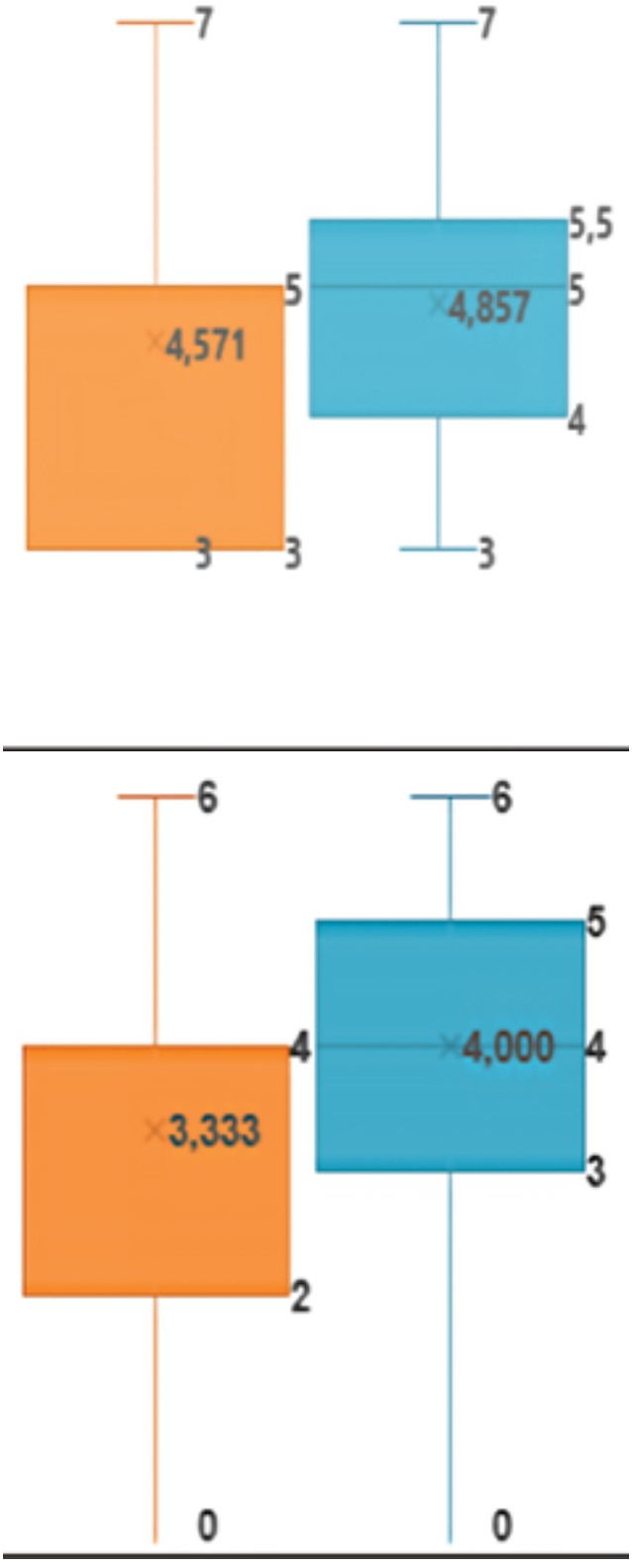
Post-test data for the same ability show greater dispersion, the data is between 2 and 7 points. The median shifted slightly towards Q3 from 4,344 in pre-test to 4,781. The RI remained at 2 points. The whiskers indicate that 25% of the data is between 2 and 4 and 25% have dispersed slightly towards high scores between 6 and 7.

Regarding the speaking ability, the data show that the pre-test scores were between 2 and 8 points over the 10 possible points to obtain. In pre-test, Q1 corresponded to 4 and Q3 was 6 points. The median corresponded to 5,156 points. The upper and lower mustaches are symmetrical (2 points up and 2 points down). Which indicates dispersion of the data in a range of 6 points.

In the post-test, the control group obtained results between 2 and 8 points, the median moved slightly to low scores, from 5,156 points in the pre-test to 4,844 points. The IR is maintained at two points, which shows a decline in the acquisition of the ability.

In figure 8, the symmetry and dispersion of the data obtained by the students of the experimental group in the pre-test and post-test tests for listening comprehension compression and oral production linguistic skills are analyzed.

Figure 8. *Box and mustache diagram for the experimental group data analysis in pre-test and post-test of listening and speaking skills*



Note: Self-elaborated.

In the listening ability, it can be said that due to the shape of the box, the data was concentrated between the values of 2 and 4 corresponding to Q1 and Q3. The minimum value in the test was 0 points and the maximum 6. The median representing the central place of the sample corresponded to 3,333. According to the length of the whiskers, 25% of the data is between 0 and 2 and another 25% is located between scores 4 and 6 points, they are symmetrically distributed between the low and high scores.

In the post-test, students get an improvement that translates into the reduction of the lower mustache that went from 0 to 3,50% of the data were located in the interquartile range that goes from 3 to 5 points. The above indicates better results, the maximum score went from 6 to 7 points. The upper and lower whiskers are asymmetric indicating variability towards high scores. The median went from 3,333 to 4,571, the minimum value in the test went from 0 to 3.

The analysis on the acquisition of the speaking ability in the pre-test indicates that if 50% of the data were centered in the box, these were between 3 (first quartile, Q1) and 5 points (third quartile, Q3). The maximum value was 6 points and the minimum 0 points. The upper and lower whiskers are asymmetric (1 points up and 3 points down) indicating variability towards low scores, the median was 4,000 and according to their location, the data had a slightly asymmetric distribution. The data were distributed in a range of 0 to 6 points.

In post-test students of the experimental group in the speaking ability obtained an improvement that is evident in the range of the data, which went from 0 to 6 to a range of 3 to 7 points. Q1 went from 3 points to 4 points, Q3 went from 5 points to 5, 5, which indicates that the data moves to higher values. The minimum value in pre-test was 0 and in post-test went to 3 points, the inferred mustache had a length of 3 and went down to 1, that is to say that the

displacement of the data towards higher values is an indicator of improvement in said ability.

Taking into account that the results of the control group in pre-test were superior to those of the experimental group, it is necessary to use covariate to establish the incidence of the strategies, that is, the two groups at the starting point with this application were statistically same. In table 7, the three best averages by linguistic ability are indicated in red, establishing relationships with the preferred perception channel characterized for the process.

Table 7. *Results by group and preferred channel VARK applying covariate*

3. VARK * Group						
Dependent Variable	VARK	Group	Mean	Std. Error	95% Confidence Interval	
					Lower bound	Upper bound
Listening	TO	Control	4,332 [a]	,2. 3. 4	3,859	4,806
		Experimental	4,588 [to]	, 547	3,481	5,696
	K	Control	4,552 [to]	, 404	3,733	5,370
		Experimental	4,988 [to]	, 235	4,512	5,463
	R	Control	5,031 [a]	, 301	4,422	5,640
		Experimental	4,965 [a]	, 477	4,000	5,930
	RK	Control	3,639 [to]	, 568	2,490	4,788
		Experimental	. [a, b]	.	.	.
	V	Control	4,201 [a]	, 422	3,346	5,056
		Experimental	5,341 [a]	, 573	4,181	6,500
	GOES	Control	3,952 [a]	, 557	2,824	5,081
		Experimental	6,334 [a]	, 678	4,962	7,706
Speaking	TO	Control	4,555 [to]	, 213	4,124	4,986
		Experimental	4,886 [a]	, 498	3,879	5,894
	K	Control	4,603 [a]	, 368	3,858	5,348
		experimental	5,137 [a]	, 214	4,704	5,570
	R	Control	4,411 [a]	, 274	3,857	4,966
		experimental	5,546 [a]	, 434	4,668	6,425
	RK	Control	4,226 [a]	, 517	3,180	5,272
		experimental	. [a, b]	.	.	.
	V	Control	4,968 [a]	, 384	4,189	5,746
		experimental	5,738 [to]	, 522	4,682	6,794
	GOES	Control	5,120 [a]	, 507	4,092	6,147
		experimental	5,199 [a]	, 617	3,950	6,448

a. Covariates appearing in the model are evaluated at the following values:
CovListen = 3,943 and CovSpeak = 4,698. Source: Data processing using SPSS

The test to be used to establish the effect of the intended environment in which the VARK perception channels (visual, kinesthetic or listening comprehension, reading, writing) were characterized by the acquisition of English language skills in (listening comprehension) and oral production) is the Pillai's Trace test, as part of a MANOVA analysis when two groups are analyzed. Catena, Trujillo and Ramos (2003) conclude that the most appropriate statistic for the effect analysis and the magnitude of the effect is the Pillai-Bartlett trace.

Table 8. *Manova test to establish effectiveness of the experiment*

Effect	Value	F	Hypothesis df	Df error	S.I.G.	
Intercept	Pillai's Trace	, 612	13,794 [b]	4,000	35,000	, 000
	Wilks' Lambda	, 388	13,794 [b]	4,000	35,000	, 000
	Hotelling's Trace	1,576	13,794 [b]	4,000	35,000	, 000
	Roy's Largest Root	1,576	13,794 [b]	4,000	35,000	, 000
CovListen	Pillai's Trace	, 000	. [b]	, 000	, 000	.
	Wilks' Lambda	1,000	. [b]	, 000	36,500	.
	Hotelling's Trace	, 000	. [b]	, 000	2,000	.
	Roy's Largest Root	, 000	, 000 [b]	4,000	34,000	1,000
CovSpeak	Pillai's Trace	, 000	. [b]	, 000	, 000	.
	Wilks' Lambda	1,000	. [b]	, 000	36,500	.
	Hotelling's Trace	, 000	. [b]	, 000	2,000	.
	Roy's Largest Root	, 000	, 000 [b]	4,000	34,000	1,000
CovTotal	Pillai's Trace	, 000	. [b]	, 000	, 000	.
	Wilks' Lambda	1,000	. [b]	, 000	36,500	.
	Hotelling's Trace	, 000	. [b]	, 000	2,000	.
	Roy's Largest Root	, 000	, 000 [b]	4,000	34,000	1,000
VARK	Pillai's Trace	, 439	, 937	20,000	152,000	, 542
	Wilks' Lambda	, 615	925	20,000	117,032	, 557
	Hotelling's Trace	, 544	, 911	20,000	134,000	, 574
	Roy's Largest Root	, 330	2,507 [c]	5,000	38,000	, 047
Group	Pillai's Trace	, 448	7,108 [b]	4,000	35,000	, 000
	Wilks' Lambda	, 552	7,108 [b]	4,000	35,000	, 000
	Hotelling's Trace	, 812	7,108 [b]	4,000	35,000	, 000
	Roy's Largest Root	, 812	7,108 [b]	4,000	35,000	, 000
VARK * Group	Pillai's Trace	, 246	, 623	16,000	152,000	, 862
	Wilks' Lwambda	, 763	, 621	16,000	107,564	, 861
	Hotelling's Trace	, 298	, 623	16,000	134,000	, 861
	Roy's Largest Root	, 251	2,382 [c]	4,000	38,000	, 069

Source: Data processing using SPSS.

Table 9. *Evaluation of the effect of strategies (experiment) on the results of language skills*

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	Df	Mean square	F	S.I.G.
Corrected Model	Listen	73,133 b	14	5,224	9,008	, 000
	Speak	52,527 d	14	3,752	7,806	, 000
Intercept	Listen	1,306	1	1,306	2,252	, 142
	Speak	12,105	1	12,105	25,184	, 000
CovListen	Listen	, 000	0	.	.	.
	Speak	, 000	0	.	.	.
CovSpeak	Listen	, 000	0	.	.	.
	Speak	, 000	0	.	.	.
CovTotal	Listen	, 000	0	.	.	.
	Speak	, 000	0	.	.	.
VARK	Listen	2,226	5	, 445	, 768	, 579
	Speak	1,783	5	, 357	, 742	, 597
Group	Listen	3,768	1	3,768	6,497	, 015
	Speak	1,778	1	1,778	3,699	, 062
VARK * Group	Listen	3,488	4	, 872	1,503	, 221
	Speak	900	4	, 225	, 468	, 759
Error	Listen	22,037	38	, 580		
	Speak	18,265	38	, 481		
Total	Listen	1265,000	53			
	Speak	1317,000	53			
Total Corrected	Listen	95,170	52			
	Speak	70,792	52			

Source: Data processing using SPSS.

The reported results were processed in the SPSS software, using a multivariate analysis of variance with covariance (the covariates used were the scores obtained in the pre-test test. Significant differences (Pillai trace p <0.05) were obtained for the listening comprehension variable between the control group and the treatment group, with the latter being higher. There is a tendency to show significant differences in oral production. It is not necessary to perform a comparison test of means because there are only two treatments (experimental vs. control).

Conclusions

The implementation of didactic pedagogical strategies adapted for inclusion from the curriculum have an impact on the acquisition of listening and speaking skills. The students of the experimental group achieved better performance in the post-test stage.

The adaptation of cognitive, metacognitive and socio-affective strategies to the sociocultural context of students of listening comprehension and oral production provide foreign language

learners with learning opportunities, through respect for the particularities of students, which helps them make use of their experiences and knowledge to generate meaningful messages in the language of study.

Students characterized with preferred multichannel VA obtain the best results in the test for listening skills, students with preferred channel V follow and third place are obtained by students with preferred perception channel R. The incidence of perception channels on the acquisition of listening and speaking skills is not statistically significant.

Students with preferred V channel obtain the best results in the language proficiency test; students with preferred R channel follow and third place are students with K channel. The incidence of perception channels on the acquisition of listening and speaking is not statistically significant.

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