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»Abstract

The purpose of the current study was to identify the learning style of English second language students in a Public school in the Caribbean coast of Colombia as well as to investigate the relationship and influence of their most predominant learning style to their academic performance. Data was collected from a target group of 38 students, from which 3 are the main participants with 1 English teacher. For conducting this study, a combination of qualitative and quantitative research was used. The instruments used were (a) The Perceptual Learning Style Preferences Questionnaire, (b) Field notes, (c) Interviews and (d) Artifacts. Results showed that the kinesthetic learning style was the preferred by the majority of participants. In the same way, the visual modality has the highest score as the minor

learning style and finally, the less preferred learning style among the focus group is the group modality. The results also revealed a significant relationship between the student´s most predominant learning styles and their motivation towards the English classes due to the fact that students actively carried out the task having good academic results.

Keywords: Learning style, major, minor and negligible learning styles, academic performance.

»Resumen

El propósito de este estudio fue identificar el estilo de aprendizaje de los estudiantes de un segundo idioma Inglés en una escuela

pública en la costa caribeña de colombiana, también investigar la relación y la influencia de su estilo de aprendizaje predominante a su rendimiento académico. Se recogieron datos de un grupo objetivo de 38 estudiantes, de los cuales 3 son los participantes principales con 1 profesor de inglés. Para llevar a cabo este estudio, se utilizó una combinación de la investigación cualitativa y cuantitativa. Los instrumentos utilizados fueron: (a) Cuestionario sobre estilo de aprendizaje perceptual, (b) Notas de campo, (c) Entrevistas y (d) algunos artefactos como cuadernos de los alumnos y las calificaciones de pruebas y exámenes: Los resultados mostraron que el estilo de aprendizaje kinestésico fue el preferido por la mayoría de los participantes. De la misma forma, la modalidad visual tiene un puntaje más alto que el estilo de aprendizaje de menor importancia y, por último, el estilo de aprendizaje menos preferido entre el grupo de enfoque es la modalidad de grupo. Los resultados también revelaron una relación significativa entre los estilos de aprendizaje predominantes de los estudiantes y su motivación hacia las clases de inglés, debido al hecho de que los estudiantes llevan a cabo activamente la tarea que tiene buenos resultados académicos.

Palabras claves: Estilos de aprendizajes, estilos de aprendizaje mayor, menor y nulo, rendimiento académico.

»Introduction

Significant amount of learning style research indicates that students learn, progress and achieve better when their courses are built to

meet their learning style preferences This means that every pupil has a preferred way in which he/she best learns.

When teachers focus on preferred students learning styles, students show particular ways to approach the tasks or activities proposed. The way in which these are planned and presented by the teacher has a positive or negative impact on students' performance. It is believed that a student's motivation is increased when their teachers pay enough attention to their learning style preferences (Hein & Budny, 1999).

Based on some class observations and short talks with the 10th grade English teacher and the students, two things seem to be clearly evident. First, learners say that their preferences in terms of learning activities are not taken into account in classes, in this way, there may be not matching between students' learning and classroom activities; second, the teacher manifests that she does not know their students learning styles. She has never applied a survey to identify her students' preferences and as a consequence of this, she may not know if the learning activities, she is planning are according to their learners' preferred ways of learning. In the same way, the educator may not be aware of the potential benefits of working taking into consideration her students' learning styles.

- What have been stated before, are the considerations that lead to the following questions as the focus and purpose for guiding this research work:
- What are 10th grader's major, minor and negligible learning styles?

- What is the existing relation between the activities proposed by the teacher in the English subject and 10th graders' learning styles?
- How do teaching activities impact students' academic performance when learning styles are or are not taken into account by the teacher in the English class?

It is very important to remark that this research has significance in the English language teaching and learning field. The relevance of conducting this research project states on the fact that its results might give insights for English teachers to improve their academic and professional practice. Thus, it may help to build valid theories about how to improve students' academic performance in the English subject.

»Literature Review

Some studies about learning styles in different countries have been carried out to investigate the relation with students' academic performance. The following are some examples:

- Alireza Jilardi Damavand (2011) in the study, "Academic Achievement of Students with Different Learning Styles", investigated about learning styles on the academic achievement of secondary school students in Iran. The results of the analysis of variance showed that there is a statistically significant difference in the academic achievement of the Iranian students that correspond to the four learning styles in particular.

- Joy M. Reid (1987) conducted a study

called The Learning Style Preferences of ESL Students indicated that ESL students from different language backgrounds sometimes differ from one another in their learning style preferences; that other variables such as sex, length of time in the United States, length of time studying English in the U. S., field of study, level of education, TOEFL score, and age are related to differences in learning styles; and that modifications and extensions of ESL student learning styles may occur with changes in academic environment and experience.

- Garcia et al (2007) in their study teaching and learning crossroads. It was found in the results that the kinesthetic style was the most common, followed by the tactile and the auditory among students while tactile is favored by teachers followed by kinesthetic and visual. It was also observed that there was a little match between students' learning style and educators' teaching style.

- Zainol et al. (2011) in the study conducted, "Learning Styles and Overall Academic Achievement in a Specific Educational System. The analysis of the data indicated a significant relationship between overall academic achievement and learning styles. They also found that the high, moderate and low achievers have a similar preference pattern of learning in all learning styles. Moreover, the learning styles framework did not change with subjects, when it actually plays an important role across all the subjects.

This research work will be based on Reid's works and theories developed about learning styles because she has deeply addressed this issue and among scholars and teachers, her studies have great validity.

»Theoretical Framework

Second Language Classrooms are very pluralistic today and their student`s learning styles play a great role in learning. Teachers should consider students` preferred ways of learning when planning and designing languages courses for them to obtain positive results. Reid (1995) defined Language Learning Styles, as a student`s preferred method or mode of learning. Her categorization of learning styles into six types: 1. **Visual Learners** (they prefer seeing things in writing), 2. **Auditory Learners** (they prefer listening), 3. **Kinesthetic Learners** (they prefer active participation-experiences), 4. **Tactile Learners** (they prefer hands-on work), 5. **Group Learners** (they prefer studying or working with others) and 6. **Individual Learners** (they prefer studying or working alone). In the same way, she states that students do not have only one learning style; on the other hand, Reid (1995) proposed three categories: **Major learning style:** The major learning style refers to the one style (of the six styles presented in Reid`s instrument) that best fits a given student`s profile. **Minor learning styles:** these, are secondary areas, less strong for any given learner, yet also suited to the learner. **Negligible learning styles:** This term indicates a style that is farthest from the natural style for any given student. —Often a negligible score indicates that you may have difficulty learning in that way.

This research study is based on Reid`s work because her theory of learning styles is nowadays one of the most widely accepted among scholars.

»Methodology

A. Participants

The participants for this study were 38 10th graders and 1 english teacher from a public school in the Caribbean Coast of Colombia; The students` age in this group ranges from 15 to 17. The distribution of sex like this: 18 males and 20 female students. From the previous focus group, a smaller group of three students and their english teacher was set up; this target population is composed by three students and 1 teacher.

B. Method

In this research project, a quantitative and qualitative descriptive methodology was applied. Data about Learning Styles and their implication on students` academic performance was gathered from the following instruments:

1. Reid`s Perceptual Learning Style Preference Questionnaire (PLSPQ, 1987):
2. Field Notes were written during the English classes by the observer.
3. Interviews: Two interviews with open questions were applied. The first one was conducted with the mentor teacher of the English subject; the second one, with the three students who are the main focus of this research.
4. Artifacts: some learners` notebooks, and marks from quizzes and exams were analyzed.

C. Data Analysis

Previous to the data collection, students

and the teacher were asked permission to participate in this study and they fully agreed; also, the principal and the academic coordinator of the school facilitated the process with their approval. The quantitative data was carefully gathered and calculated; in order to find out the student's learning styles, a translated version from Reid's Perceptual Learning Styles Preference Questionnaire (PLSPQ) 1987 was applied to the focus and target group. Qualitative data such as interviews, field notes and artifacts were used to observe the implications on student's academic performance when there was a matching or mismatching with the class activities proposed by the teacher. All the gathered information was organized in a chart to find common patterns for being analyzed.

questionnaire proposed by Reid (1987) was used. Results are presented and summarized in the following table and figures.

According to the information presented in table and figure 1, it can be said that among 10th grade students, the kinesthetic learning style is the most popular as their major preferred way; in the same way, the visual modality has the highest score as the minor learning style and finally, the less preferred learning style among the focus group is the group modality.

Quantitative Findings

- **Focus group**

For identifying the learning styles of this group, a translated version of the PLSPQ

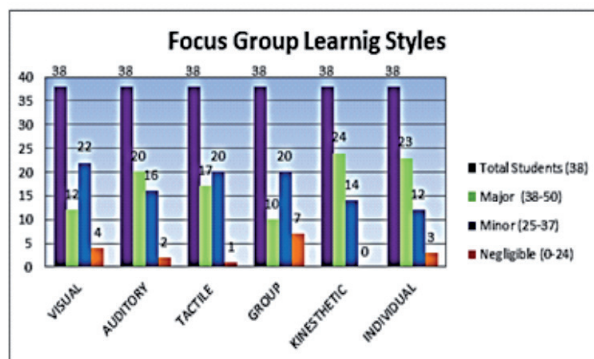


Figure1: Learning style

Learning Styles	Visual		Auditory		Tactile		Group		Kinesthetic		Individual	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Major learning style (38-50)	12	31,6%	20	52,6%	17	44,7%	10	26,3%	24	63,2%	23	60,5%
Minor learning style (25-37)	22	57,9%	16	42,1%	20	52,6%	21	55,6%	14	36,8%	12	31,6%
Negligible learning style (0-24)	4	10,5%	2	5,3%	1	2,6%	7	18,4%	0	0,0%	3	7,9%

Table 1: Focus group learning styles

- **Target group**

According to the information presented in table 2 and figure 2 which are about student 1, it is right to assert that this participant have the auditory modality as her major learning style. Thus, it is shown, that she has the kinesthetic, individual and visual modalities as minor learning styles respectively; finally, this participant, has the group modality as her negligible learning style. In this way, it can be said that this student has a clear tendency to prefer activities that imply listening and hearing such as listening to songs, conversations or to the teacher.

Learning style clasification	Score	Category
Visual	30	Minor
Auditory	45	Major
Tactile	35	Minor
Group	24	Negligible
Kinesthetic	35	Minor
Individual	35	Minor

Table 2: Student 1 learning style

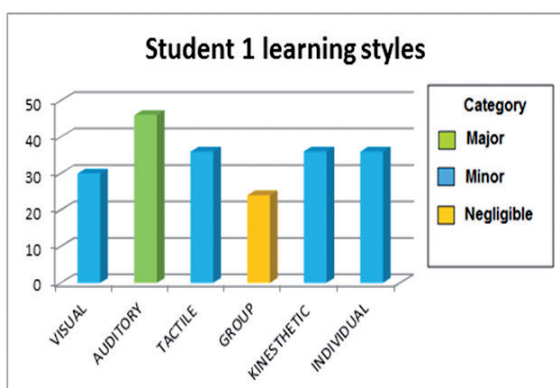


Figure2: Learning style

Table 3 and figure 3, have student's 2 results about the PLSPQ questionnaire; according to this, it can be said that his major learning style is the kinesthetic followed by the individual and auditory

modalities. In the same way, he has as minor learning styles the tactile and the visual modalities respectively. From the previous information it can be conclude that this student has preference for activities that imply movement such as games, role plays, and in general using the body to express feelings.

Learning style clasification	Score	Category
Visual	32	Minor
Auditory	40	Major
Tactile	36	Minor
Group	38	Major
Kinesthetic	44	Major
Individual	40	Major

Table 3: Student 2 learning style

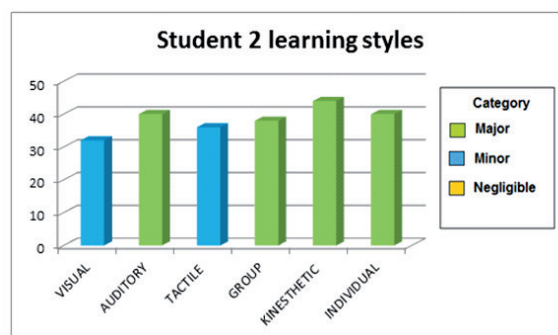


Figure 3: Learning style

Table 4 and figure 4, contain student's 3 results; it is demonstrated through the questionnaire she answered that the visual followed by the individual modality are her major learning styles. In the same way she has the tactile, auditory, kinesthetic and group modalities as her minor learning styles. She does not have negligible learning style. From the information stated before, it can be assumed that this participant performs better in class if the activities imply eye contact; such as looking at pictures or

videos, working with texts and diagrams and other activities that imply using her eyes to get information.

Learning style classification	Score	Category
Visual	40	Major
Auditory	32	Minor
Tactile	36	Minor
Group	26	Minor
Kinesthetic	32	Minor
Individual	38	Major

Table 4: Student learning style

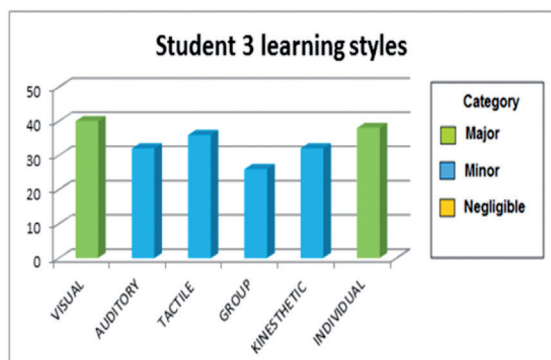


Figure 4: Learning style

Qualitative findings

• Interviews

The first interview was done with the English teacher; clear evidence of her lack of knowledge about her students' learning styles was found; she claimed to have never applied any survey or questionnaire to know this information. She usually prepares her classes based on the idea that since the group is numerous, the activities have to be in a certain way, a manner to control discipline in the classroom, however as a teacher she tries to use variety in the kind of activities she uses in class.

The information stated above shows

that although the teacher does not know her students' learning styles, she tries to use different kinds of activities to meet students' ways of learning. In the same way, it leads to think that since she is too much worried about discipline, there is a lack of more opportunity to explore and analyze how the way teachers choose activities that match students' learning styles have a positive impact on students' academic performance.

The second interview, on the other hand, was applied to the target group composed of three students: 2 girls and one boy. The purpose was first, to confirm the result obtained in the PLSPQ questionnaire; second, to look for evidence of how the class activities proposed by the teacher influence their academic performance when they match or do not match their learning styles.

During the interview, student 1's answers led to the conclusion that one of her major learning styles is the auditory modality; this has similarity with what she answered in the PLSPQ questionnaire. Thus, it was also found evidence that when this student has activities related to her major or minor learning style, her academic performance is better.

Student 2, compared with the other two participants, has, according to his comments, the major learning style more defined than the others; in this way, what he answered in the PLSPQ questionnaire was confirmed in this interview. It is clearly evident that this student likes doing activities that imply movement and keep him active. Field notes confirm that this participant is very eager to work

when the activity is a game or something similar implying moving around. According to the information found, it is right to assure that when this student works on activities that match his learning styles, there is a high level of motivation and the performance is very good. Compared with other kinds of activities, student 2 said that he has achieved better scores when he likes the activities.

When interviewing Student 3, little evidence was found to confirm the result she got in the PLSPQ; according to this questionnaire this participant has the visual followed by the individual modality as her major learning styles, the tactile, auditory, kinesthetic and group modalities as her minor learning styles. However, through the interview, some comments have contradicted what was found in the questionnaire. It was found some mismatching between what the participant answered in the questionnaire and what she said in the interview. However, some other comments partially confirm some issues related to the answers in the PLSPQ questionnaire.

- **Field notes**

Field notes were taken from three sessions of class observation; although the researchers paid attention to all aspects in the class, the main focus was on the three students that are part of the target group.

It is right to assert that there were some instances in which the activities matched students' major and minor learning styles; in those cases, significant differences in terms of motivation and academic achievement were evident, for example in class session 1 there was a reading

exercise based on pictures of a story in the class introduction; this activity which corresponded to the visual modality was eagerly carried out for student 3 with very good results. Compared with the second activity which was about oral participation, it was observed that the same student did not have the same motivation to carry out the activity; in fact, she did not participate.

During class session 2 the teacher proposed to the class two different activities, the first one was about interviewing classmates and the second one about reporting the answers; since the first activity was kinesthetic and group because it implied moving around the class to look for the answer and working with others, the attention was focused on student 2, it was found that this student successfully carried out the activity and also participated in the second phase of the activity in the class which was about reporting on the board the gathered answers. In both cases, the kinesthetic learning style was favored, that is why student 2 actively participated and performed in a good way. If we compare his performance in the reading activity in the previous class, it can be appreciated that better academic achievement was got in the second session where his major learning style was favored.

In class session 3 there was a short game based on vocabulary; there were some words spread around the class and on the board the meaning, the game consisted on looking for the words in the dictionary as fast as possible and matching them with the correct definition. Each word counted 1 point. In this kinesthetic activity, student 2

performed very well.

In the second part of the class, there was a listening activity; it was the lyric of a song with some blanks to fill in while listening to the song. This activity has the characteristic of being auditory; in this way the attention was focus on student 1 who has the auditory modality as her major learning style. She really enjoyed the activity and was one of the first students in completing all the blanks, in this sense, it can be said that since the activity matched her preferred way of learning, she got a high level of motivation and good result in terms of academic achievement.

Some more extra information provided in the field notes is the general perception that when class activities favored the most popular learning styles among the focus group the levels of motivation and academic results were higher that when they were not favored.

- **Artifacts**

For the final source of data, the english teacher provide the researchers with some of the registration of the overall students' scores; in the same way, the three main participants provided their notebooks. These two artifacts provide evidence to analyzed students' academic performance when class activities match or do not match their learning styles.

Student's 1 english notebook was checked focusing on finding evidences about activities, works and task related to her major, minor and negligible learning styles. The scores and performance in each case were compared; it was found some evidence that in auditory activates,

which is this participant major learning style, the scores were a little bit higher than in the others, this information was also confirmed with the teacher's score.

In student's 2 english notebook, the focus was on kinesthetic activities; in this case little evidence was found, only one activity was analyzed and compared with others matching different learning styles. In the comparison, the evidence showed that in the only case of kinesthetic activity, the score and performance was higher in the majority of comparisons. The previous information let the researcher to conclude that in this case although there is a connection between class activities and student's academic performance.

Finally, in student's 3 english notebook, the researchers looked for visual activities to compare their scores with the other class activities. It was found that this notebook was very organized and neat; the students made use of different colors to highlight items; this is clear evidence that this behavior is closely associated with visual learners. Thus, in the score comparison, in the majority of cases, the higher scores were in the visual activities; this information clearly showed that there is a positive impact on students' academic performance when class activities match their learning styles.

»Conclusions

This research study aimed to examine the learning styles of 10th grade learners, and the relation of these with their academic

performance; three research questions were answered through the process of data collection and data analysis. The results clearly confirmed the importance of understanding pupils' ways of learning as they provided insights for understanding that classroom successfulness partially depends on the way teachers approach the class regarding to the teaching activities.

It was found that the most popular modality is the kinesthetic learning style; this implies that when has to do with 10th grade teenagers, the activities that best match their learning styles are the ones that imply movement when learning; in this sense, activities like rehearsing role plays and presenting activities related to movement like mime, guessing games, touching and expressing their feelings physically. Field notes also confirmed that when these kinds of activities were used by the teacher in the class, there were higher level of motivation and students actively carried out the task having good academic results.

Results also showed that knowing students' learning styles not only had advantages concerning to academic performance, but also on students' attitude and motivation toward the learning process; this implies that the way class activities are presented and planned has a strong influence on students personal behavior; consequently, it is right to assert that one lesson can be attractive to a students if its activities are presented and match his/her interests.

Strong connections were found between students learning styles and motivation; in this way, that fact that teachers could be aware of pupils' preferred ways of learning, have a positive impact on learners' motivation towards the class.

In conclusion, teachers are responsible take into consideration the differences in learning styles among students to favor students' successful learning. When teachers are aware of the importance of learning styles, they can provide a good map to their students.

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