



Identifying Learning Styles Of Business Administration Students In A Public University

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APA Citation:

Henry, L.P., (2022). Identifying Learning Styles Of Business Administration Students In A Public University , *Journal of Language and Linguistic Studies*, 18(3), 204-213; 2022.

Submission Date: 07/05/2022

Acceptance Date: 12/08/2022

ABSTRACT

The research aimed to identify main learning style preferred by students of the program of business administration from the Francisco de Paula Santander University, to develop we applied the Honey-Alonso learning style (CHAEA), which measures the preference for the following styles: active, thoughtful, pragmatic and theoretical, in a sample of 100 students, who were enrolled in the second half of 2012 in the business administration program at the conference day and night, cast information the questionnaire was analyzed statistically, using SPSS, initially studied all the results, which demonstrated the existence of a moderate preference for two styles. Action followed split the data by study day, although there were disagreements, the statistical analysis showed that most of them are not significant. With this, we proceeded to an analysis of the trends found in them moderate preference for reflective style night time shift and high asset forth in the day time shift.

Keywords: Learning Styles; Honey-Alonso; Questionnaire on Learning Styles; learning outcomes; students; business Administration.

Introduction

The objective of the research is to characterize the learning styles of students belonging to the business administration program at Francisco de Paula Santander University, and it is framed in a quantitative research of cross-sectional descriptive cut through the application of a stratified sampling by semester and days (day and night). To the investigation work it is used in stratified aleatory sampling applied an independent form.

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The instrument to be used is the CHAEA learning styles questionnaire (Honey Alonso Learning Styles Questionnaire). CHAEA, is a questionnaire on learning styles, which seeks through the manifestation of agreement or disagreement, to locate the respondent, in variables that relate the four learning styles. The reliability and validity of CHAEA has been demonstrated based on the relevant statistical tests by analyzing the Learning Styles of a sample of 1,371 students from 25 Faculties of the Complutense and Polytechnic Universities of Madrid. It was used as an instrument for diagnosis the Honey-Alonso Questionnaire of Learning Styles, CHAEA, adaptation for Spanish contexts of the Learning Styles Questionn.

Diverse investigations have shown that people differ in the way they access knowledge, some prefer to study in a group, others seek to establish a relation between the theoretical and the practical, some more prefer to do things rather than reflect, and so on: these particular ways of learning receives the denomination of Learning Styles, the definitions given to this concept are multiple, for this investigation that of Kolb (1984) is assumed, who affirms that they are "a lasting and stable state that derives from consistent configurations of the transactions between the individual and its environment". To achieve this purpose, a quantitative research was developed with the participation of 129 business administration students, 100 of whom correspond to the day time shift and 29 to the night time shift.

1. Institutional information

The Francisco de Paula Santander University, through Resolution No. 2920 of October 5, 1966, in accordance with the provisions of Decree 1464 of 1963, initiates the Business Administration Program, recognizing all legal and academic effects of basic university studies and the transfer to the National University of Colombia. Subsequently, on June 5, 1972 through Resolution No.012, the day time shift program was approved with a duration of 10 semesters; in 1992 the night time shift began, lasting 11 semesters.

TOTAL NUMBER OF STUDENTS ENROLLED

Table 1. Enrollment in the Business Administration program – Day Time Shift

STUDENTS	2017		2018		2019		2020		2021	
	1	2	1	2	1	2	1	2	1	2
REGISTERED	185	134	213	189	162	202	171	100	185	157
ENROLLED	116	116	158	155	96	101	60	60	73	69
% ABSORTION	63	87	74	82	59	50	35	60	39	44
ENROLLED	1417	1363	1374	1339	1273	1256	1174	1215	1221	1150

Source: Statistical Bulletin 2022. Statistics Unit, UFPS Planning Office.

Table 2. Enrollment in the Business Administration program – Night Time Shift

ESTUDENTS	2017		2018		2019		2020		2021	
	1	2	1	2	1	2	1	2	1	2
REGISTERED	62	66	84	65	71	101	68	38	89	73
ENROLLED	38	43	50	50	50	79	34	22	51	52
% ABSORTION	61	65	60	77	70	78	50	58	57	71
ENROLLED	550	530	517	524	506	522	481	513	517	535

Fuente: Statistical Bulletin 2022. Statistics Unit, UFPS Planning Office.

1.1 Literature Review

Learning human beings analyze, order and contextualize differently, which generates research spaces in the pedagogical field that seek to determine that a series of variables influence the way of learning. Within these variables is the style, seen as a strategy to assimilate knowledge. Determining Learning Styles makes it possible in a scientific way to modify and improve the way of processing information, which contributes fundamentally to education and the development of teaching strategies. As can be seen, a central aspect within a university context is that referring to pedagogical aspects. In the specific case of the UFPS business administration program, the training of the students, of their sessions, is considered of great importance.

This is why the following question is posed for its development: What are the predominant learning styles of students belonging to the business administration program at Francisco de Paula Santander University, the result of this research will contribute to the existing gap in this pedagogical field.

Regarding the types of learning there are a great diversity, according to the levels of depth, among the low level ones are: rote learning, of a repetitive and mechanical nature; at the high level is comprehensive learning, which facilitates the establishment of relationships between concepts; and the significant one that starts from the learners' knowledge and favors its active construction and the relevant significant one that facilitates the application of what has been learned to new contexts (Murillo, 2003). Regarding Learning Styles, Gregor, cited by Rojas, Salas and Jiménez (2006) defines them as distinctive behaviors that serve as indicators of how a person learns and adapts to their environment, for Claxton and Ralston (1978) they are the consistent way of responding and using stimuli in a learning context, according to Smith (1988) are the characteristic ways by which an individual processes information, feels and behaves in learning situations, Dun and Dunn (1978) define them as "a set of personal, biological or developmental characteristics that make a teaching method or strategy effective in some students and ineffective in others, Schemek (1982) for his part states that they can be defined as that cognitive style that an individual manifest when faced with a learning task and reflects the student's usual and natural preferred strategies for learning, for Keefe (1982) are those cognitive traits cognitive, affective, and physiological that serve as relatively stable indicators of how learners perceive, interact with, and respond to their learning environment. Among this set of definitions there is something in common, the way students process information.

Schemeck (1983) proposes three learning styles: in-depth, students who make use of the conceptualization strategy, this means that when studying they abstract, analyze, relate, and organize abstractions, therefore they have high learning; about elaboration, makes use of the personalized strategy, the content of his study is related to himself, his experiences, what has happened, thinks and is going to happen, here it is worth mentioning that we speak of medium learning; and superficial where the use of the strategy is focused on memorization, it is when it is observed that students only remember the content of a certain topic only at the time shift they are going to be evaluated by the teacher, following this they tend to forget easily information. Referring to low learning.

Kolb (1984) propounds a following classification: those students who perceive information abstractly via conceptual formulation, that is, theoretically, and process it through experimentation, are called convergent; the divergent, on the contrary, capture the information through real and concrete experiences and process them reflexively; Assimilators tend to perceive information abstractly but process it reflexively; and finally, the Accommodators perceive the information from concrete experiences and actively process the information.

Honey & Mumford proponed following Learning Styles:

Active Style	Reflexive Style	Theoretical Style	Pragmatic Style
The student is usually open-minded and flexible thinking, therefore willing to face new situations, which sometimes leads him to carry out actions without measuring their consequences.	The student tends to be cautious, meticulous, methodical, in discussions they like to listen to others and assimilate information, therefore they like to consider experiences and evaluate them from different perspectives, for this they collect data and analyze it carefully before arriving to some conclusion, they enjoy observing the performance of others and listening to others.	The student tends to be a perfectionist, likes to integrate facts into coherent theories, is logical, thinks vertically, rationally and objectively, has a low tolerance for uncertainty, ambiguity and the intuitive. He is good at elaborating questioning, he likes to analyze and synthesize.	The student has a tendency to reject what does not have a clear application, is realistic, technically oriented, seeks to put ideas into practice. He is more task oriented than people oriented. He does not have a great interest in the theoretical.

2. Methodology

The methodological proposal is an application of the quantitative approach, to the extent that a standardized measurement instrument will be identified, the learning styles of the students, but in turn it will have as a characteristic the interpretation of the results obtained and their description. Taking

into account the methodological perspective, the study corresponds to a practical perspective, that is, it is a quantitative transversal applied research since it seeks to solve practical problems using a descriptive methodology. Its level of depth is explanatory since it will contribute to the theoretical model of learning styles and explain the phenomena related to them in the population under study.

The sample for the research is quantitative with a descriptive design, it was developed at the Francisco de Paula Santander University, Institution of Higher Education, whose operation is authorized by the Colombian Institute for the Promotion of Higher Education -ICFES.

Of a total of 1,600 students enrolled in the business administration academic program offered by the Francisco de Paula Santander University during the second semester of 2021, 1,065 belong to the Day time shift (66.4%) and 535 Night time shift (33.4%), the sample was determined:

$$n = \frac{N \times Z^2 \times P \times Q}{e^2 \times (N - 1) + Z^2 \times P \times Q}$$

$$\left[\frac{1.600 \times (1.96)^2 \times (0,85 \times 0,15)}{(0,036) \times (1.600 - 1) + (3.8416) \times (0,85 \times 0,15)} \right] = 131$$

Table 3. Sample's distribution

Region (stratus)	Population	Percent
Day Time Shift	87	66.4
Night Time Shift	44	33.4
Total	131	100%

The Honey-Alonso Learning Styles Questionnaire (CHAEA) was applied to the 131 participants, it consists of 80 statements, to answer it they present two options, you can agree more or less agree; for the first option the positive sign (+) is assigned and for the second the negative sign (-). The statements refer to the four E.A. proposed by the authors: active, reflective, pragmatic, theoretical. For each of them, the test presents 20 statements that investigate the different characteristics of each profile. To achieve the score, each positive answer is assigned a value of one (1) and for each negative a value of zero (0).

Table 4. Baremo Scale for all students.

STYLE	10% PREFERENC IA MUY BAJA	20% PREFERENC IA BAJA	40% PREFERENC IA MODERAD A	20% PREFERENC IA ALTA	10% PREFERENC IA MUY ALTA
ACTIVE	0-6	7-8	9-12	13-14	15-20
REFLEXIVE	0-10	11-13	14-17	18-19	20
THEORETIC	0-6	7-9	10-13	14-15	16-20
PRAGMÁTI	0-8	9-10	11-13	14-15	16-20

BAREMO SCALE “Scale of values that is established to evaluate and classify the elements of a set according to some of its characteristics” Wikipedia

Table 5. Baremo Scale for students of Human Sciences.

STYLE	10% Very Low Preference	20% Low Preference	40% Moderate Preference	20% High Preference	10% Very High Preference
ACTIVO	0-6	7-9	10-12	13-15	16-20
REFLEXIVO	0-10	11-13	14-17	18	19-20
TEÓRICO	0-6	7-9	10-12	13-14	15-20
PRAGMATIC	0-8	9-10	11-13	14-15	16-20

Table 6. Average and Style Preference

PARTICIPANTS			129		
LEARNING STYLE	REFLEXIVE	THEORETICAL	PRAGMATIC	ACTIVO	
PREFRENCE AVERAGE	12.94	13.90	12.94	12.08	
BAREMO SCALE PREFERENCE	Low	High	Moderate	Moderate	

3 Results

The results found in all the participants show the high preference of the Theoretical style. Moderated by the active and pragmatic, the reflective style was quantified as low, for all 131 students.

Learning Style Preference According to Study Time Shift.

Table 7. Average in the preference of the style according to Time shift

LEARNING STYLE									
LEVEL	SS	ACTIVE AVERAGE	BS	REFLECTIVE AVERAGE	BS	THEORITIC AL AVERAGE	BS	PRAGMATIC AVERAG E	BS
DIURNA	100	12.14	M	12.74	B	13.85	A	12.62	M
NOCTURNA	29	12.02	M	13.15	M	13.95	A	13.26	M
CONVENCIONES									
SS = Total participants					B = Score conversion according to				
BS = Baremo Scale					Baremo Scale.				
					M = Moderate Preference				

Table 7 shows the preferences per day where the low preference for the Reflective Style in the students of the day time shift stands out, in the same way the students of the two shifts prefer a Theoretical style with a HIGH determination, in the other levels no predominance is noted in the choice of a certain style, finding a moderate state. In the same way, the MODERATE average in the REFLECTIVE style is relevant in the students of the night time shift.

3.1 Learning Style Preference According to Study Time Shift.

Determining the Learning Style preferred by the students of the two days, the two scales established by Alonso, Gallego and Honey (1999) were taken into account, one for the generality of students and the other for students per day.

Table 8. Average in the preference of the style according to Time Shift

TIME	STYLE	TOTAL	
DAY TIME SHIFT	ACTIVE	12,14	M
	REFLEXIVE	12,74	L
	THEORITICAL	13,85	H
	PRAGMATIC	12,62	M
NIGHT TIME SHIFT	ACTIVE	12,02	M
	REFLEXIVE	13,15	M
	THEORITICAL	13,95	H
	PRAGMATIC	13,26	M

Table 9. Comparative Average Style Preference per Time Shift

LEARNING STYLE								
TIME	REFLEXIVE AVERAGE		THEORITICAL AVERAGE		PRAGMATIC AVERAGE		ACTIVE AVERAGE	
DAY TIME SHIFT	12,74	L	12,14	H	12,62	M	12,14	M
NIGHT TIME SHIFT	13,15	M	12,02	H	13,26	M	13,95	M

The results show a moderate preference for the use of the different Learning Styles in the two days, it is determined that the students of Business Administration day time shift, have a high level of preference for the theoretical, pragmatic and active Styles, and low in the reflective one, the night time shift Business Administration students show a high preference for the Theoretical Learning Style - Reflexive and moderate in the others, which leads to analyze the student's profile in its relevance as an active part of the academic population of the University Francisco de Paula Santander

The data show the non-existence of significant differences between the means obtained for each learning style per day, although the preference for the theoretical one stands out despite not finding significant differences in the students' preferences for a specific learning style, nor differences marked by day, not for that reason the analysis of the data found should be left aside, the reflective style that has less preference is a factor to be taken into account in the teaching staff in nurturing and consolidating this learning style because the thought and reflection is increasingly important in the training of new professionals.

At a general level, the data show that in the students of the various sessions of the UFPS business administration program there is no manifest preference for one of the four Learning Styles evaluated by the CHAEA test, which is presented in moderate preference for the four styles, data that coincide with the research carried out by Gómez del Valle (2003), Suazo (2007) and Giménez (2008), who found moderate preference for the four styles in their research.

The participants were classified by academic day and when comparing the Learning Styles, a low preference for the Reflective Style is noted in the students of the day time shift and a high preference for the theoretical one. Students of the Day Time Shift of advanced levels show a preference for the Theoretical Style.

In what has to do with the proposed objectives, the analysis of the results allowed verifying their fulfillment: it is considered as the Learning Style preferred by the students of the UFPS business administration program "theoretician in the day time shift and moderate reflexive in the night time shift, this assumption is reached after having disaggregated the initial group, according to School and level, the student with this type of interest, according to the postulate of Alonso, Gallego and Honey (1999) tend to be perfectionist, the predominant types of thought in him are the logical and the vertical, the latter shows them as little tolerant towards the ambiguous and the intuitive, they are people who like to move more in the certainty than in the uncertainty.

4. Conclusions

- According to Lozano (2009), "the styles are neutral, namely, there is not one better than another. "Each style has its added value and its own utility for specific activities" ratifies what was found in this research in the sense of using a certain style or maximum a combination of two but predominating the theoretical.
- The data found by the research with the students grouped in shifts show that there is no particular preference for a type of learning style.
- When comparing Learning Styles by day, it is noted in the student participants of the day and night times shift: a low preference for the Reflective and higher for the theoretical.
- Analyzing the results statistically, they show the non-existence of significant or considerable differences between learning styles, according to the day. Students tend to prefer the Theoretical Style in the three levels of study, emphasizing it to a greater extent in the day time shift.
- Increased interest in combining styles. (It can obey the different contents of the subjects and methodology of the teachers). This event is presented in the students of the night time shift, because different ways of thinking and profiles are integrated, such as businessmen, merchants, entrepreneurs and owners of their own business where they combine practice with theory leading to a point of reflection and thought managerial.
- In the day time shift, the style with the lowest preference index is the Reflective, being more prominent in the night time shift, but in turn this factor is important, efforts must be made to transform the day time shift students from theoretical to reflective. and added to a program for teachers and managers to create spaces that lead future professionals in reflective and proactive.
- In the same way, night time shift students have a marked preference for the active theoretical combined style, since most work and have a direct relationship with the different productive sectors of the region.

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