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Relationship Between Learning Styles And Academic Performance Of Students In The Psychology Program From First To Fourth Semester Of A Private University In Cúcuta.

Relación Entre Estilos De Aprendizaje Y El Rendimiento Académico De Los Estudiantes Del Programa De Psicología De Primero A Cuarto Semestre De Una Universidad Privada De Cúcuta.

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ABSTRACT

Key Words:

Statistical analysis, learning, educational quality, cognitive, education, styles, academic performance

The main objective of this study was to analyze the relationship between learning styles and academic performance of 76 psychology students from first to fourth semester of the private University of Cúcuta. For this research a quantitative approach was implemented with a non-experimental cross-sectional design, a stratified random sampling with proportional allocation was used. The CAMEA40 questionnaire was used to evaluate learning styles and the academic records of students' grades to measure academic performance. The results show that the reflective and theoretical learning styles predominate in the students with mean scores of 34.4769 and 33.5538 in comparison with the other AE.

RESUMEN

Palabras Claves:

Correlación, aprendizaje, calidad educativa, cognitivo, educación, estilos de aprendizaje, rendimiento académico.

El objetivo principal del presente estudio fue analizar la relación entre los estilos de aprendizaje y el rendimiento académico de 76 estudiantes de la carrera de psicología de primero a cuarto semestre de la privada Universidad de Cúcuta. Para esta investigación se implementó un enfoque cuantitativo con un diseño no experimental de corte transversal, se utilizó un muestreo aleatorio estratificado con afijación proporcional. Se utilizó el cuestionario CAMEA40 para evaluar los estilos de aprendizaje y los expedientes académicos de las calificaciones de los estudiantes para medir el rendimiento académico. En los resultados evidencio que los estilos de aprendizaje reflexivo y teórico predominan en los estudiantes con puntuaciones medias de 34.4769 y 33.5538 en comparación con las demás EA.

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Introduction

According to Tinto (1989) cited by Lattuada (2017), he considers that the beginning of higher education means a phase of personal growth and maturation for students. During this time, higher education communities assume responsibility for the academic and professional orientation of students, which requires a process of continuous improvement to adapt to changes and current competitiveness. It is vital that these institutions optimize their performance, develop their capabilities to the maximum and deliver significant value in key areas such as being, doing and knowing. Despite the various pedagogical strategies implemented in these educational institutions, unfortunately many students do not reach the level required by universities and do not meet the academic goals set, which is also reflected in their academic success. Therefore, it is relevant to highlight that this stage coincides with the young adult stage, characterized by significant and challenging changes in the environment according to Castaño (2019).

The beginning of this stage is the opportunity for young people to enter a new institution with many different cultures where they can learn from each of them, which they gradually get to know and learn about. The moment in which an individual begins their university education is of great importance and has a significant impact on their successful academic progress or their decision to drop out (Fonseca & García, 2016).

That is why relevant the academic performance which is considered as the achievement reached by the student in his formative process is defined as the result obtained. Several studies suggest that the implementation of a teaching methodology based on the inverted classroom model improves the academic performance of students compared to those who follow a traditional methodology, (Mendaña et al. 2017; Hinojo et al. 2018).

Now, regarding the relationship between academic performance and learning styles although this line of research that analyzes the relationship between learning styles and academic performance has not been fully explored (Wilkinson, Boohan, & Stevenson, 2014). However, according to Estrada, (2018), there have been numerous investigations that show that learning styles play an important role in the academic performance of students as in their study Learning styles and academic performance as results identified that students had greater predominance in the reflective AE with 42.30% and with a lower predominance in the active AE with 19.57% in which observing them I determine that the AR does influence the AE.

Undoubtedly, this preference of AE was found in another research conducted by Caicedo et al, (2020) where it was evidenced that there was a significant difference between reflective and active AE with a weighted level of 49.2%.

Learning Styles Theories

In order to understand what learning styles are, one must first know that learning styles are cognitive, affective and physiological characteristics that act as signals of how a person perceives and relates to his or her learning environment (Alonso et al., 2012; Espinosa and Estévez, 2013; Acevedo et al., 2015).

According to Alonso, Gallego and Honey (1997) these authors refer that people focus more on different stages, schematizing the different styles as follows:

Table I. Learning Styles

Stage of the Process Emphasizing	Learning Style
Concrete experience	Active style
Observación reflexiva	Reflective style
Abstract conceptualization	Theoretical style
Active experimentation (application)	Pragmatic style

The authors Alonso, et. al (2012), describe each of the learning styles. They consider that the active style is characterized by a strong willingness to immerse themselves in new experiences without prejudice, leading to busy days. These people enjoy living in the present, are open-minded and confident about the future. Once the initial motivation for one experience wanes, they quickly seek out another. They consider it worthwhile to participate in a variety of activities, even if it is only once. The reflective style refers to people who are observant in all aspects of life. Before acting or coming to conclusions, they prefer to inform themselves thoroughly. They have the ability to consider different points of view on a situation and have the ability to understand information in depth.

On the other hand, according to Honey, Alonso and Gallego (1994), cited by Rubio and García (2018), the theoretical style is characterized by understanding information through logical organization and interpretation. These people have the ability to handle large amounts of information. They tend to focus more on theoretical aspects or models rather than practical approaches. They are perfectionists, rational, observant and patient. And the pragmatic style refers to people who need to understand the usefulness of what they learn and apply it in practice, including their own ideas. They like to be constantly innovating, solving problems, making decisions and finding positive aspects in every situation. They are risk-takers and are willing to experiment with new things. They excel at putting their ideas into practice.

Academic Performance

Academic performance is contextualized as a measurement of performance in the teaching-learning process, related to the evaluation of learning, several well-structured and organized instruments should be used (Posso et al, 2021), attached to standards to know the achievements reached, which can be quantitative and qualitative.

This is considered as the achievement reached by the student in his or her formative process is defined as the result obtained. Several studies suggest that the implementation of a teaching methodology based on the inverted classroom model improves the academic performance of students compared to those who follow a traditional methodology, (Mendaña et al. 2017; Hinojo et al. 2018). Given the above, it is important to highlight that there are several diverse factors that also influence academic performance. Furthermore, that, in the university setting, the student brings with him a series of habits, strategies and practices that have shaped his learning style during his secondary education.

Materials and Methods

The research was developed within a non-experimental quantitative paradigm, cross-sectional, understood according to Peinado (2015) with the purpose of describing variables and analyzing their incidence and interrelation at a given time. Similarly, this study was conducted with a correlational modality This is a quantitative study with a descriptive correlational type scope since as proposed defined by Mejía (2017), as "a type of non-experimental research in which researchers measure two variables and establish a statistical relationship between them (correlation), without the need to include external variables to reach relevant conclusions".

Participants

The Universe was formed by the students of the psychology program which are 183 students, as population the semesters 1,2,3 and 4 were taken (N=94) followed by a simple random probability sampling (see equation 1) with an admitted margin of error of 5% and a confidence level of 95%, (n=76). Finally, to guarantee a representative proportion according to the size of people enrolled in each semester, stratified random sampling with proportional allocation was used (see Table II).

Considering that the universe is the complete set of elements that meet the specific study characteristics, the population is a specific subset of that universe and the sample is a selected part of the population that is used to obtain conclusions about the universe or the population in general (Riffenburgh, 2012).

Table II. Calculation Of Stratified Random Sampling With Proportional Allocation

Estratum	Identification	Numbers of subjects in the stratum	Proportion	Sample of stratum
1	Semester 1	33	0,35	27
2	Semester 2	24	0,26	19
3	Semester 3	25	0,27	20
4	Semester 4	12	0,13	10

According to the sample calculation, the population was divided into 4 strata, each corresponding to the first, second, third and fourth semesters.

Instruments

For the present study the CAMEA 40 Learning Styles questionnaire was used, adapted by Madrigal Gil (2014) adaptation of the Honey and Alonso Questionnaire of Learning Styles CHAEA to know which were the AE's that predominated in the students and for academic performance the academic records of students from first to fourth semester of the psychology program reflect crucial information for the research focused on the academic lines of history of psychology, psychobiology, mathematics and statistics. These records included personal data such as full name, student code. In addition, the academic semesters in which they are, from the first to the fourth, were recorded.

The questionnaire is made up of 40 items selected for the identification of learning styles distributed in an order similar to that of the CHAEA, differing in their number and in the response options which, in this case, are based on the Likert-type scale model according to the KEY indicated in the instructions. The initials are kept for the key in order to minimize the possibility of misunderstandings.

The academic records of students from the first to the fourth semester of the psychology program reflect crucial information for the research focused on the academic lines of history of psychology, psychobiology, mathematics and statistics.

Data analysis

After data collection, the data were organized in Excel and processed using IBM SPSS version 29.0 (IBM, USA),

which allows the information to be organized and summarized in tables and graphs. This facilitates the exploratory analysis of the data and the identification of patterns or trends.

Results and Discussion

In response to each of the objectives set out in the following research, the following results were found.

Each of the variables was analyzed, in which it became evident that the highest participation was of the female sex, with

54 women (81%). And with a lower participation of male sex with 11 participants, equivalent to (16.9%). And the variables age and semester predominated the interval of 16 to 23 years and the first semester (See Table III)

Table III. Counting The Variables Of Age, Sex And Semester And Their Percentage.

SEMESTER	LEARNING STYLE	LEVEL	FRECUENCY	PERCENTAGE
1	Reflexive	High	11	16,9%
2	Reflexive	High	7	10,2%
3	Reflexive	High	7	10,2%
4	Theoretical	High	3	4,5%

It was evident that the predominant learning style was reflective (See Table IV) with an average of 33.3333, these students are characterized by being very observant in all areas, in any situation they prefer to be well informed before acting or drawing any kind of conclusion (Honey & Mumford, 1992).

In second semester, it was shown that the learning style that predominated was reflective with a mean of 35.1176, students tend to consider their experiences and opportunities from different points of view, they gather and meticulously analyze data to reach conclusions, they look at all possible options before performing any task (Esguerra & Guerrero, 2010).

Table IV. Frequency Of Levels Of Learning Styles In Different Semesters.

		Frecuency	Percentaje
Age	16 a 23 years	62	95,4%
	24 a 31 years	2	3,1%
	32 a 41 years	1	1,5%
Sex	Female	54	83,1%
	Male	11	16,9%
Semester	1	27	41,5%
	2	17	26,2%
	3	15	23,1%
	4	6	9,2%

In the third semester, it was identified that the most predominant learning was reflective with a mean of 36.8. Students tend to observe the experiences they have had from different perspectives, analyze the behaviors of the people around them and do not act until they take ownership of the situation (Esguerra & Guerrero, 2010).

Finally, in the fourth semester it was evident that the predominant learning style was theoretical with an average of 36.0. In which students tend to relate their experiences with certain logical and complex theories, analyze, investigate, synthesize and seek rationality in everything. Alonso et al. (2012).

Based on the above, it is identified that

academic performance for both men and women, it is also considered important that teaching processes also play an important role in the student's attitude when learning and the methodology taught by the teacher when teaching.

Next, the predominance of students from first to fourth semester was analyzed by academic lines (See table V), in the first semester it was identified that the academic line that predominated was the psychobiological processes with an average of 4.5 so this has a tendency to make theoretical-practical and students tend to have a reflective style in which they consider their experiences and the opportunities they have from different points of view, gather and analyze data from the theories, (Esguerra & Guerrero, 2010).

In second and third semester, it was evidenced that the academic line with greater predominance was histories of psychology in Colombia with an average of 4.46471 and 4.74667 so this line is characterized by analyzing data, dates of events, names of authors and others. students have to have a domain in the reflective learning style.

And finally, in the fourth semester it was shown that the academic line that predominated was mathematics and statistics with a mean of 4.08333 in which students tend to predominate in a theoretical style where they tend to analyze, synthesize and seek rationality and objectivity of all data (Esguerra & Guerrero, 2010).

Table V. Frequency Of Proficiency Levels In Different Subjects In Each Semester

SEMEST ER	ACADEMI C LINE	LEVEL	FRECUENCY	PERCEN TAGE
PREDOMI NANT				
1	Psychobiology	Good	27	41,5%
2	History of Psychology	Good	16	25,2%
3	History of psy- cholo gy	Good	15	23,1%
4	Matemáticas y estadísticas	Bueno	4	6,8%

Conclusions

In this study it can be evidenced that all the objectives proposed in the research were achieved, with which it was possible to determine the following:

Students from first to third semester identify themselves with a reflective learning style which have a mean of 34.4769 and in fourth semester the theoretical learning style predominated with a mean of 36.0.

The academic lines that predominated were Histories of Psychology, Psychobiology and Mathematics and Statistics with averages of 4.08, 411385 and 4.25, where students are more inclined to learn the concepts and put them into practice.

Students have strengths in the reflective and theoretical learning styles, but have weaknesses in the active style.

Also that the learning processes according to the research sample are with tendency to the theoretical-practical content, that is to say that the academic training is more inclined to learning from the conceptual and pragmatic experiences. except reflective disappears especially from the second semester, it is also of utmost importance that in all learning styles were of moderate level, but mainly in the first semester.

And finally, it is concluded that whatever the learning style in which a student is better qualified does not determine the grade to be obtained in the exams and grades that support their academic performance.

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