

LEARNING STYLES AND ACADEMIC PERFORMANCE IN NURSING INTERNS OF A NATIONAL UNIVERSITY OF PERU

ESTILOS DE APRENDIZAJE Y RENDIMIENTO ACADÉMICO EN INTERNOS DE ENFERMERÍA DE UNA UNIVERSIDAD PÚBLICA PERUANA

Ana Maria Chambi-Choque^{1,a}, Jorge Manrique-Cienfuegos^{2,b}, Tula Margarita Espinoza-Moreno^{3,c}

ABSTRACT

Objective: To evaluate learning styles (EA) and their relationship with academic performance (RA), in Nursing Interns of a national university of Peru. **Methods:** Cross-sectional, quantitative, correlational study; conducted in 70 nursing interns during the year 2018, the Honey-Alonso (CHAEA) validated questionnaire was applied for learning styles, which has been designed for the student to identify their preferred learning style, and record of grades for performance academic, the data were subjected to descriptive and inferential statistics, using the SPSS 26.0. **Results:** Demographic results are presented, for learning styles, academic performance and statistical relationship between the latter. The socio demographic characteristics of the population: 84.5% of nursing interns were between 20 and 25 years old, 82.9% are female, 98.6% are generally single, and 57.1% are not they work. In EA, considering the percentages achieved by students, reflexive learning 80% predominates, followed by theoretical 75%, pragmatic 66% and active 57%. The weighted average of the academic performance was 15.84, 62.86% had a good performance, and 32.86% an excellent performance. When applying Fisher's Exact Test to the learning styles and academic performance variables, a value of $p > 0.05$ was obtained. **Conclusion:** The academic performance of nursing interns was mainly good and excellent. The predominant learning style among study participants was reflective. No statistically significant association was found between learning styles and their contribution to academic performance.

Key words: Educational quality; Nursing and learning; Academic performance; Learning evaluation; Learning styles. (source: MeSH NLM)

RESUMEN

Objetivo: Evaluar los estilos de aprendizaje (EA) y su relación con el rendimiento académico (RA), en Internos de Enfermería de una universidad nacional del Perú. **Métodos:** Estudio transversal, cuantitativo, correlacional; realizado en 70 internos de enfermería durante el 2018, se aplicó el cuestionario validado de Honey-Alonso (CHAEA) para estilos de aprendizaje, diseñado para que el estudiante identifique su estilo preferido de aprendizaje, y record de notas para rendimiento académico, los datos fueron sometidos a estadística descriptiva e inferencial, utilizando el SPSS 26.0. **Resultados:** Se presenta resultados demográficos, para los estilos de aprendizaje, el rendimiento académico y a relación estadística entre estos últimos. Las características sociodemográficas de la población: el 84,5% de los internos de enfermería tuvo entre 20 a 25 años, el 82,9% son de sexo femenino, 98,6% son solteros generalmente solteros, y el 57,1% no trabajan. En EA, considerando los porcentajes alcanzados por los estudiantes, predomina el aprendizaje reflexivo 80 %, seguido del teórico 75 %, pragmático 66 % y activo 57 %. El promedio ponderal del rendimiento académico fue de 15.84, el 62.86% presentaron un rendimiento bueno, y el 32,86% un rendimiento excelente. Al aplicar el Test exacto de Fisher a las variables estilos de aprendizajes y rendimiento académico se obtuvo un valor de $p > 0,05$. **Conclusión:** El rendimiento académico de los internos de enfermería fue principalmente bueno y excelente. El estilo de aprendizaje predominante fue el reflexivo. No se encontró asociación estadísticamente significativa entre los estilos de aprendizaje y el rendimiento académico.

Palabras clave: Calidad educativa; Enfermería y aprendizaje; Rendimiento académico; Evaluación del aprendizaje; Estilos de aprendizaje. (fuente: DeCS BIREME)

¹ Cayetano Heredia Hospital. Lima, Peru.

² Technological University of Peru. Lima, Peru.

³ National University of San Marcos, Institute of Ethics School of Medicine. Lima, Peru.

^a Emergency Nurse.

^b Statistical Engineer of the UNALM.

^c Main teacher D.E.

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INTRODUCTION

Education in the 21st century, conceived "as a treasure and a relatively permanent process that develops throughout life, rests on four pillars: learning to know, learning to do, learning to live together and learning to be"; In this context, it is important to know about the learning styles of university students, how they learn, what tools or strategies they use and their results in the learning process.⁽¹⁾

Therefore, teachers and authorities should know about the learning styles and ways of acquiring knowledge that students put into practice, especially considering that in modern learning according to the socio-critical formative model, autonomous learning and socio-critical evaluation have been betting on. This requires from the university education, the development of certain skills, abilities and capabilities in the student to effectively face their stage of professional training.⁽⁶⁾

The socio-critical formative model has, by its very nature, a link with self-managed learning, it tries, in essence, to enable processes of active participation, from the stimulation of the joint action of expression and creativity... it cannot be reduced, neither to the mechanical transmission of contents, nor to the linear application of effective techniques... It is based on four fundamental principles: Humanizing learning (student social history subject), dialogical learning (undertaking interrelations of understanding and social identity), consciousness-raising learning (understanding the world, developing its creative expression and engaging in change and transformation of the environment) and problem-critical learning (critical attitude towards life).⁽⁷⁾

Under this model, the current task is to train nurse leaders, reflective, analytical, proactive, able to properly identify and solve problems in the care of people, their own situations and context; making sufficient use of the scientific method in its various forms (problem solving method, problem-based learning, nursing care process, learning clinical-critical judgment), adequately to promote professional development; they must also be active, overcome challenges, learn to work with others, implement what they have learned, relate theory to practice, and finally base their actions on sound theories and systems that guide their actions.⁽⁸⁾

The teaching experience in higher education, allows us to see that learning styles are forms, mechanisms

or strategies that with or without teaching induction, usually bring students university life and it is in this space where they use to acquire, use and/or generate information from experiences in the classroom, in assistance spaces, in their academic social life with their peers and through social networks; It is hoped that along the way the adoption of one or a combination of them, will favor them significant and lasting learning that will allow them during their academic development and in the future, to solve their doubts, increase their knowledge and solve problems of everyday life as well as professional practice.

These arguments allowed us to raise the need for research in order to evaluate the learning styles (EEAA) and their relationship with academic performance (AP), in nursing interns of a national university of Peru.

METHODS

This research is quantitative, correlational, analytical cross-sectional, with the population made up of 70 nursing interns of the professional school of nursing of a public university in Peru, the same who met the inclusion criteria (being a nursing intern of the study institution, regular mode, be present in the data collection stage, give their informed consent) and exclusion (not be repeating the internship, express abandonment of research after data collection)

The variables analyzed were: academic performance (AP) (dependent variable), expressed in grades obtained requested through regular means in the office of enrollment and academic registration of the mentioned university, records of notes that were transferred in an Excel database and transported to a database SPSS version 26. The other variable is constituted by the learning styles (LS) (independent variable), whose data were collected using the Honey-Alonso questionnaire (CHAEA) which consists of 80 questions and whose answers were coded in a table of codes, to be processed in an Excel database and transported to a SPSS database version 26 for the corresponding statistical analysis. Descriptive statistics were applied: measures of central tendency and inferential statistics: chi-square, in the necessary cases, fisher's exact test was calculated.

The ethical aspects have been considered during all stages of the research highlighting the autonomy of the interns (informed consent), confidentiality of information and truthfulness of the same, also it had the approval of the ethics committee in research respective school.

RESULTS

The population consisted of 70 nursing interns of a public university in Peru, of whom 82.9% were women and 84.3% were aged between 20 and 25 years.

Figure 1 gives details of the general data of the study sample. Among the nursing interns studied, most had a predominant reflective learning style, with critical judgment as the main skill. Table 1 gives details of the other types of learning discussed in this study.

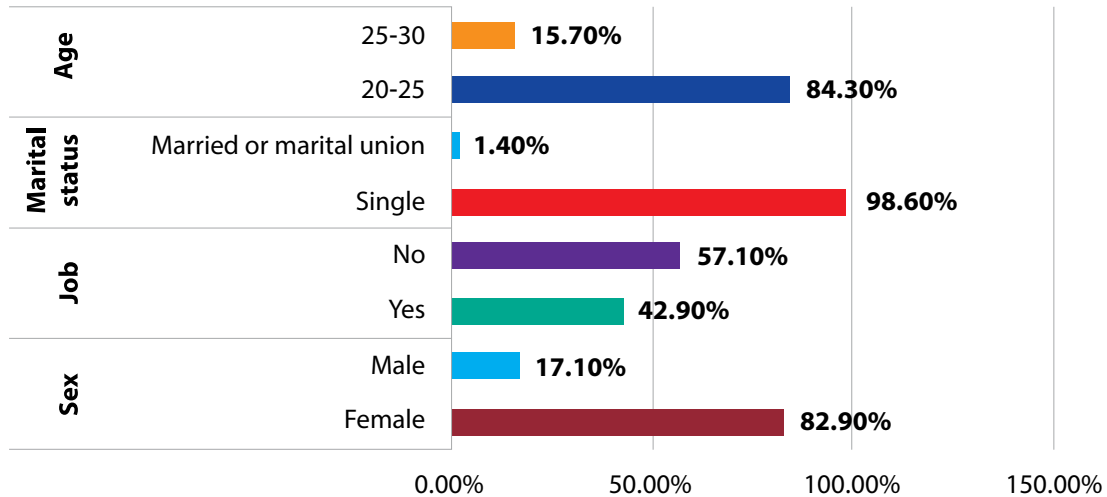


Figure 1. Characteristics of nursing interns of a National University in Peru.

In this population group, the reflective learning style predominates with a coefficient of (0.80); Followed by theoretical learning, pragmatic learning; being the

active learning has the lowest coefficient (0.57). As can be seen in table 1.

The average academic performance of nursing interns is 15.84. The majority of nursing interns (62.8%) had a good performance, which quantitatively is between (14-16) on the vigesimal scale (0-20) that is being used in the institution where the research was conducted, followed by 32.8% with excellent performance (17-20) and 4.2% regular performance (11-13), not finding interns with poor performance, These figures reveal that nursing interns have achieved learning that is

quite oriented towards achieving their competencies, which is what is evaluated when it comes to academic performance.

To evaluate the association between learning styles and academic performance, the p-values of the tests used were greater than 0.05, therefore, it cannot be affirmed that there is a relationship between the 4 learning styles studied and the academic performance of the nursing interns. As shown in table 2.

Table 1. Skills according to learning styles that stand out in the nursing interns of a National University in Peru.

Learning Style	Coefficient of learning style	Skills	Coefficient per skill
Active	57 %	Participation in class	63 %
		Group work	50 %
		Solidarity action	56 %
		Spontaneity	57 %
Reflexive	80 %	Analysis	77 %
		Summary	69 %
		Understanding	84 %
		Critical judgment	86 %
		Assessment	80 %
Theoretical	75 %	Theories	75 %
		Concepts	83 %
		Approaches	71 %
		Memory	64 %
Pragmatic	66 %	Practical work	68 %
		Decided	61 %
		Entrepreneurs	71 %
		Participatory	68 %

Source: Survey applied to the nursing interns of the research.

Table 2. Relationship between learning styles and academic performance of nursing interns.

	Academic Performance			Total	P Value
	Excellent	Good	Regular		
Pragmatic Learning Style					
1. Very Low (<= 8)	0	3	0	3	0,159
2. Low (9 - 10)	7	3	0	10	
3. Moderate (11 - 13)	7	19	1	27	
4. High (14 - 15)	4	10	0	14	
5. Very High (16+)	5	9	2	16	
Total	23	44	3	70	
Theoretical Learning Style					
2 Low (7 - 9)	0	4	0	4	0,365
3 Moderate (10 - 13)	6	7	0	13	
4 High (14 - 15)	9	10	1	20	
5 Very High (16+)	8	23	2	33	
Total	23	44	3	70	
Reflexive Learning Style					
2 Low (11 - 13)	2	5	0	7	0,862
3 Moderate (14 - 17)	15	26	3	44	
4 High(18 - 19)	6	13	0	19	
Total	23	44	3	70	
Active Learning Style					
1 Very Low (<= 6)	2	3	0	5	0,965
2 Low (7 - 8)	2	7	0	9	
3 Moderate (9 - 12)	11	20	2	33	
4 High (13 - 14)	5	7	0	12	
5 Very High (15+)	3	7	1	11	
Total	23	44	3	70	

DISCUSSION

In the nursing interns of the UNMSM, the reflexive learning style predominates; Followed by theoretical and pragmatic; being the active style the least prevalent in these students. Our results agree with those obtained by Ordonez, Rosety-Rodriguez who studied the predominant LS in students of health sciences of the Cadiz University, whose results showed a preference for the reflective style, followed by the pragmatic, theoretical and finally active;⁽¹⁷⁾ This is in line with what Romero obtained: a reflective style 50.8%, theoretical 19.5%, active 17.8% and pragmatic 11.9%. However, our findings differ from the data obtained by Nevado, where the predominant LS was the active style, followed by the reflective and theoretical styles 19. Duque also shows results that show that the preferred learning style by students is theoretical, being present in 63.6% of students, followed by pragmatic with 15.3%, active with 13.4% and finally reflective with 7.7%⁽⁹⁾.

Cabrera argues that active and reflective LS are characteristic in students of careers related to health sciences (Medicine, Nursing, Biochemistry, Physical education, among others), so that the active student must plan and put into practice in a concrete way the knowledge learned, the student learns more effectively when taught using their predominant learning style. To do this, teachers must know the learning styles of each student and the group in general in order to develop effective teaching methods⁽²⁰⁾.

There is greater interest towards reflection and reflective practice in the training of nursing professionals in recent years, highlighting the potential of reflection for learning the practice of care; As well as valuing the importance of nursing based in the evidence for the practice of nursing professionals in the systematic search for answers with a critical and reflective approach.⁽²¹⁾

The result of learning is academic performance, in which different and complex factors act on the learner, and which has been defined with a value attributed to the achievement of the student in his academic life.⁽²²⁾ the research used the records of the nursing interns provided by the educational institution, showing that with regard to academic performance, 62.86% have a good performance, 32.86% excellent performance, 4.28% regular performance, not presenting data for poor performance.

Esquerra, when referring to the existence of a relationship between LS and AP, states that all learning

styles are present in the studies and although each participant may have to a greater or less measure one of the four styles analyzed, he found that the general trend was higher for reflective LS, this characteristic being statistically significant. He also observed that there is a significant relationship between LS and AP, especially in students who show active style and those who express reflective style⁽²⁴⁾.

Garcia mentions that in the research he carried out, the sample has a general profile where students prefer active LS, since there is a frequency 48.54% accumulated in the categories of AP very high and high, deducing that there is a moderate predilection for the four LS, however, the most used style, according to the study, was reflective⁽²⁵⁾.

After evaluating the statistical analysis, we found no relationship between LS and AP of the nursing interns in this study, which agrees with the research conducted in Mexico by Ortiz and Canto, who found no relationship between learning styles and academic performance, also determining that there is a preference for the reflective style, followed by the pragmatic and then the theoretical one⁽²⁷⁾. Likewise, in another study by Juárez C.; No significant association was established between the learning styles and the academic performance of the participants. However, we cannot deny that the presence of learning styles influences the average of students (numerical representation of quantitative and qualitative accreditation criteria), but above all on the quality of learning achieved throughout vocational training, the result of an educational process in which three actors are involved: the student, the curricular content and the teacher⁽²⁸⁾.

In addition to the factors addressed in this research, there is a literature that lists other factors that influence the academic performance of nursing interns and university students in general. A study conducted by Alvarado V. in Peru found that the factor that influences with greater hierarchy is the family emotional climate, academic self-concept, vocation, uneasiness about exams, motivating force and the way of being, thinking and acting. In terms of the academic factor, the teacher-student relationship is the most influential in academic performance, followed by the teaching method and curriculum and class schedule⁽²⁹⁾. On the other hand, Gonzalez-Peiteado analyzed some pedagogical aspects that are key to optimizing learning and argues that an efficient practical action begins by making the reduction of mismatch between teaching styles and learning styles

and, therefore, it is necessary for teachers to know the ways of approaching to the student learning, their attitudes, values, cultural differences, skills and study habits; Lopez, Nava and Moreno consider the teacher, the design of the teaching methodology, to optimize the learning style of students and achieve a greater cognitive achieve⁽³⁰⁾.

As we can see there are coincidences of the results found with those found with other researchers both in the health field and in other fields, however, we consider that this study has some limitations, such as being an observational, single-center study, with limited sample size and not sufficient statistical power to detect possible significant differences.

We believe that it would be important to study other variables such as teaching styles, study conditions, schedules, academic workload, personal factors, among others, and to make use of other multivariate statistical tests that identify the implications of various factors on the academic performance of nursing interns or by educational level, develop future research that considers different contexts and a larger population and consider the study of learning styles and the way in which it is being applied with a qualitative approach.

CONCLUSION

It is concluded that the reflective learning style predominates in the nursing interns, in addition, the academic performance of these interns was mainly good; however, no statistically significant association was found between learning styles and academic performance.

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Correspondence: Tula Espinoza

Address: Av. Miguel Grau 755, Lima, Perú

Telephone: +51 990 037 730

E-mail: tespinozam@unmsm.edu.pe



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