




LEARNING STYLES: PREFERENCE OF THE NURSING STUDENTS OF THE UNIVERSITY OF MAGALLANES, CHILE

Patricia Nicolle Bravo Mancilla¹ 
Vânia Marli Schubert Backes² 
Bruna Pedroso Canever² 

¹Universidad de Magallanes. Punta Arenas, Chile.

²Universidade Federal de Santa Catarina, Programa de Pós-Graduação em Enfermagem. Florianópolis, Santa Catarina, Brasil.

ABSTRACT

Objective: to identify the preference of the Nursing students of the University of Magallanes as regards learning styles.

Method: a quantitative, descriptive and correlational study of the cross-sectional type was conducted with 186 students from first to fifth year of the undergraduate course, with an age range between 18 and 45 years old. The Honey-Alonso Questionnaire of Learning Styles was applied during the second semester of 2018. For data analysis, distribution of frequencies, descriptive statistics and correlations (Spearman) for the learning styles, using the SPSS v. 22.0.

Results: the learning style of highest moderate preference of the Nursing students was the Reflexive one, with a mean value of 53.20%, according to class and to years of study, followed by the Theoretical, with 39%. No statistically significant correlations were found between the years of study and the learning styles ($p > 0.05$); on the other hand, most of the surveyed students present one and two learning styles.

Conclusion: knowing the learning styles will allow designing methodological strategies which are adequate for the students' learning styles, and which allow streamlining the learning process. The students object of this study are analytical and reflexive individuals, which very well matches the profile of the Nursing students when it comes to putting their Nursing chores into action.

DESCRIPTORS: Learning. Higher education. Nursing students. Professional training. Nursing.

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ESTILOS DE APRENDIZAJE: PREFERENCIA DE LOS ESTUDIANTES DE ENFERMERÍA DE LA UNIVERSIDAD DE MAGALLANES, CHILE

RESUMEN

Objetivo: identificar la preferencia de los estilos de aprendizaje de los estudiantes de enfermería de la Universidad de Magallanes.

Métodos: se realizó un estudio cuantitativo, descriptivo y correlacional, de tipo transversal, participaron 186 estudiantes de primer a quinto año y años de estudio en la carrera, con rango de edad entre 18 y 45 años. Se aplicó el Cuestionario de Honey-Alonso de Estilos de Aprendizaje durante el segundo semestre del año 2018. Para el análisis de los datos se realizó distribución de frecuencia, estadística descriptiva y correlaciones (Spearman) para los estilos de aprendizaje, utilizando el SPSS v. 22.0.

Resultados: el estilo de aprendizaje de mayor preferencia moderada en los estudiantes de enfermería fue el Reflexivo con una media de 53,20%, según curso y años de estudio, seguido del Teórico con 39%. No se encontraron correlaciones estadísticamente significativas entre los años de estudio y los estilos de aprendizaje ($p>0,05$). Por otra parte, la mayoría de los estudiantes encuestados presentan uno y dos estilos de aprendizaje.

Conclusión: conocer los estilos de aprendizaje permitirá diseñar estrategias metodológicas adecuadas a los estilos de aprendizaje de los estudiantes, que permitan optimizar el proceso aprendizaje. Los estudiantes objeto de este estudio, son individuos analíticos y reflexivos lo que va muy bien con el perfil del estudiante de enfermería al momento de poner en práctica su quehacer enfermero.

DESCRIPTORES: Aprendizaje. Educación superior. Estudiantes de enfermería. Formación profesional. Enfermería.

ESTILOS DE APRENDIZAGEM: PREFERÊNCIA DOS ESTUDANTES DE ENFERMAGEM DA UNIVERSIDADE DE MAGALLANES, CHILE

RESUMO

Objetivo: identificar a preferência dos estilos de aprendizagem dos estudantes de enfermagem da Universidade de Magallanes.

Método: foi realizado um estudo quantitativo transversal, descritivo e correlacional, envolvendo 186 alunos do primeiro ao quinto ano do curso de enfermagem, com faixa etária entre 18 e 45 anos. O Questionário de Estilos de Aprendizagem Honey-Alonso foi aplicado durante o segundo semestre de 2018. Para a análise dos dados, foi utilizada a distribuição de frequências, estatística descritiva e correlações (Spearman) para estilos de aprendizagem, empregando o programa SPSS v. 22.0.

Resultados: o estilo de aprendizagem que prevaleceu, com preferência moderada nos estudantes de enfermagem foi o Reflexivo, com média de 53,20%, segundo o curso e os anos de estudo, seguido do Teórico, com 39%. Por outro lado, não foram encontradas correlações estatisticamente significativas entre os anos de estudo e os estilos de aprendizagem ($p>0,05$). A maioria dos estudantes pesquisados apresentou um e dois estilos de aprendizagem.

Conclusão: conhecer os estilos de aprendizagem permitirá elaborar estratégias metodológicas adaptadas aos estilos de aprendizagem dos alunos, que possibilitem aperfeiçoar o processo de aprendizagem. Os alunos objeto deste estudo são indivíduos analíticos e reflexivos, fator correlacionado com o perfil do estudante de enfermagem quando se trata de colocar em prática seu trabalho como enfermeiro.

DESCRIPTORES: Aprendizagem. Educação superior. Estudantes de enfermagem. Formação profissional. Enfermagem.

INTRODUCTION

Education is based on the interaction between educating and learning; the author suggests following several steps such as: observing methodological rigor, developing research, working on critical thinking, reflecting and evaluating the methodological practices, and respecting the specific knowledge of each student.

This last point makes sense to us if we consider that not all individuals are alike and, as such, we use different mechanisms or modes to learn¹, that is, for those who have deepened on this concept in the educational context, a learning style² has been defined as the cognitive, affective, and physiological traits that are used as relatively stable indicators to know how the students interact and respond to the different learning scenarios.¹ Thus, understanding that this process is dynamic and is the result of the professor-student interaction in a specific setting.³⁻⁴

In its publication called *Higher Education and Society*,⁵ the UNESCO reflects on this last aspect and sets out that, through research, knowledge, and innovation, the Higher Education institutions in Latin America and the Caribbean must design educational and didactic models centered on the student, where they develop competences and critical and reflexive abilities. To that end, new educational and innovative strategies are set out for the social practice, which may generate a change in the traditional curricular structures by means of a redefinition of the learning scenarios considering the conventional, open, and virtual ones, with the development of new knowledge areas with an interdisciplinary foundation.

Consequently, as a public Higher Education institution, the University of Magallanes has stated in its Institutional Educational Project being committed to the integral training of the students, favoring the teaching-learning process centered on the application of systemic educational processes that base their operation on learning, with emphasis on generating situations or conditions for such a process to effectively occur in the student and to allow developing the promised competences in their training profiles of the different University courses.

There have been numerous studies using the same concept when referring to the cognitive and learning styles. However, there are two different definitions for each one: the first refers to how the individual organizes and controls the cognitive processes, specifically referring to the characteristics of the person.⁶ Instead, the learning styles are the predisposition of each of the subjects to choose a particular strategy and to interact and respond to their learning environments.⁶

Hence does the concern emerge in the last decades to elaborate various theories and models that address the learning styles, derived from the historically proposed Learning Theories through their vast bibliography, which offers a sound conceptual framework to us.

Knowledge about the learning style, predominant in educational aspects, has generated great diversity of definitions, classifications, and diagnosis instruments with different approaches and theoretical models. The existence of a vast bibliography provides us with a conceptual framework and invites us to highlight those models that have transcended due to their major research value; among them, we highlight those of Field Dependence and Independence, Brain Quadrants, Neurolinguistic Programming, and Multiple Intelligences.⁷

In order to determine the learning styles, an instrument which was called Learning Style Inventory (LSI) was used. With time, this questionnaire has been modified by its author; it originally consisted of nine word series which had to be ordered according to preference, and these words represented each of the Learning Styles, which he had called Convergent, Divergent, Assimilating, and Accommodating in his theory. Then, in 1976 and in 1985, he added 3 and 6 new items, respectively, and he would call the instrument "KLSI - Kolb Learning Style Inventory".⁸ In 2013, KLSI 4.0 was prepared, which

included new types of learning styles, totaling 9: initiate, experiment, imagine, reflect, analyze, think, decide, act, and balance.⁷

Currently, the learning style questionnaire is theoretically based on a cognitive approach to learning in which it is signaled that optimum learning will occur through four moments classified in the “perception” and “information processing” dimensions.⁹ During learning, the individuals concentrate on certain stages of the cycle with the emergence of clear preferences they called learning styles and classified them as follows: active, reflexive, theoretical, and pragmatic.² Each style presents features they defined as follows:

1. Active style: these individuals are willing to live new experiences, are open-minded, enthusiasts, like teamwork, have a tendency to act first and later think about the consequences, are cheerful, improvisers, take risks, are spontaneous, innovative, fun, participative, seekers, and idea generators. They answer the following question: How?

2. Reflexive style: they carefully analyze before coming to conclusions, like to consider all the alternatives, are receptive, analytical, observers, collectors, argumentative, assimilators, slow, and prudent. They answer the following question: Why?

3. Theoretical style: perfectionists of their work, they coherently integrate facts, they analyze and synthesize information, are methodical, logical, observers, critical, structuralists, they look for questions, hypotheses, and models. They answer the following question: What?

4. Pragmatic style; they discover the positive aspect of the new ideas, act quickly and with confidence, create innovative ideas, are experimental, practical, and direct⁷. They answer the following question: What would happen?

In order to assess the aforementioned styles, the Honey and Alonso Learning Style Questionnaire (HALSQ) was created as the adapted version (metrically, conceptually, and linguistically) for the academic context and in Spanish,¹⁰ determining the features for each style and the preferences for each.¹¹

For University teaching it is important to know the students' learning styles, as it turns out to be a useful tool to plan methodological actions, that is, using the most adequate teaching methodology for each specific situation, which would allow improving the quality of their learning.^{10,12} The very own teaching styles of the professor must also be considered, since this might benefit the students who share the same learning style, although being detrimental to those who do not. For this reason, the professor must constantly search for innovative methodologies,¹³ which allow increasing the students' intrinsic motivation, being essential in the health area, since they help them to develop autonomy, which is fundamental when it comes to making decisions, turning them into more reflexive and more critical professionals, and allowing them to responsibly assume the care of the person, family, and community in different social and cultural contexts.¹⁴ On the other hand, these new methodologies must be integrative, especially in the Nursing students, whose training must also be based on the practical teaching-reflexive relation. This relation allows the students to better respond to complex situations in real scenarios at the different health services in which they will act.¹⁵ For this reason, it is important that the students know which their learning styles are, since that will allow them to better organize and plan ahead, which eventually would translate into improving their academic performance.¹⁶

In this context, the objective of the present study is to identify the learning style preferences of Nursing students.

METHOD

This is a quantitative, descriptive and correlational study of the cross-sectional type developed in the Nursing undergraduate course of the University of Magallanes, city of Punta Arenas, Chile.

The sample consisted of 186 Nursing students enrolled as regular students during 2018, aged between 18 and 45 years old. The sociodemographic variables used were the following: current class of the student from first to fifth year, and years of study of the students, regardless of the admission year, divided into two groups. Group "1" corresponded to those with 1-2 years, and group "2", to 3-5 years of study.

Students were excluded who were non-regular students, who participated only in some of the subjects of the curriculum, and who were enrolled in branches other than the main house of the University of Magallanes.

The instrument used to assess the learning styles was the Learning Style Questionnaire (LSQ), which is made up of 80 brief items of dichotomous answers grouped into four sections of 20 items each, corresponding to the four Learning Styles: Active, Reflexive, Theoretical, and Pragmatic. The items are randomly ordered and make up a set of statements for which the students must select if they are more in agreement (+ sign) or more in disagreement (- sign). The maximum score for each style is 20 points for each of the groups, which would determine the style of each student and the profile for each learning style.

In order to determine the preferences for each learning style in University students, the interpretation scale was used, which allows categorizing the score obtained through the HALSQ questionnaire, thus enabling the identification of who is in the mean of the group, who is above it, and who is below. The interpretation scales are five, ranging from a very low to a very high preference for each of the styles:

- Very high preference: 10% of the individuals with the highest scores.
- High preference: 20% of the individuals with high scores.
- Moderate preference: 40% of the individuals with medium scores.
- Low preference: 20% of the individuals with low scores.
- Very low preference: 10% of the individuals with the lowest scores.

The research study was carried out in compliance with the ethical principles set forth in Decree No. 22/SU/2015, considered as the Standard from the Scientific Ethics Committee of the University of Magallanes. Subsequently, authorization was asked from the students through the informed consent form, to then apply the Honey–Alonso questionnaire (HALSQ) to the students from first to fifth year of the undergraduate Nursing course, during the 2nd semester of 2018. They were provided information related to the study, the main objective, its importance and, finally, they were informed about the questionnaire that would be applied for this research study.

The students' safety and protection were considered at all times; the questionnaire to be completed was numbered as a measure to protect the data. The values and autonomy were respected for those who freely chose to participate in the research, with signature of the informed consent form and by handing them a copy. Likewise, the participants' right to withdraw their consent was respected.

This research did not present any risk for the mental or physical health of the students under no circumstance, and the benefits they will have are related to knowing their own learning styles so they can better use these methods in order to attain a more significant learning and a better performance along with it.

On the other hand, the results obtained in this research can become a contribution to the Nursing course, since they will allow using the teaching methodologies which are more in consonance to the students' learning styles, thus encouraging them to attain the necessary competences to be Nursing professionals. The right will be respected to know the results of the research.

Data was organized in an Excel spreadsheet and, for data analysis, distributions of frequency, descriptive statistical data, and correlations (Spearman) were performed for the learning styles, using the Statistical Package for the Social Sciences (SPSS) v 22.0 software.

RESULTS

When performing an analysis according to the preference range, from the total results of the learning styles we have from 10% of preferences (very low) to 10% of preferences (very high), considering the preference percentages where each style was considered as "high and very high", the participants point out the Theoretical style in the first place with 42.5% of the preferences, followed by the Active (35.5%) and by the Pragmatic (29.6%) styles.

Likewise, when considering the percentages where each learning style obtained a "low or very low" preference, the least signaled styles were the Pragmatic (31.2%) and the Reflexive (26.9%) styles (Table 1).

Table 1 – Preference percentage of the students by each learning style. Punta Arenas, Chile, 2018.

Preference Styles	10% Very Low	20% Low	40% Moderate	20% High	10% Very High
Active	05.90	11.80	46.80	16.70	18.80
Reflexive	12.40	14.50	53.20	17.70	02.20
Theoretical	01.10	10.80	45.70	24.20	18.30
Pragmatic	11.80	19.40	39.20	18.80	10.80

Learning Styles according to the students' class

In Table 2 it can be seen that the most preferred learning styles for all the classes is the Reflexive one, which presents a slight increase in score in the mean of the fourth year of the course, with 15.9 points from a total of 20 points that can be obtained for each learning style; on the other hand, it can also be seen that the learning style which presents the lowest frequency in all the years is the Active style. However, when performing the analysis of variance (ANOVA), no significant differences ($p>0.05$) are observed between the means of the different learning styles.

Table 2 – Mean values of the learning styles from the HALSQ questionnaire according to the class of the participants. Punta Arenas, Chile, 2018.

Style	First year		Second year		Third year		Fourth year		Fifth year	
	Mean	SD*	Mean	SD*	Mean	SD*	Mean	SD*	Mean	SD*
Active	11.59	2.84	11.71	2.99	11.47	3.21	11.42	3.75	11.12	3.85
Reflexive	14.72	3.12	14.74	2.72	14.58	2.91	15.88	3.04	14.09	3.41
Theoretical	12.92	2.98	12.38	2.86	12.57	2.45	13.40	3.00	12.82	2.93
Pragmatic	12.00	2.94	11.79	2.25	12.45	2.74	11.50	3.46	12.30	2.91

*SD: Standard deviation

Learning Styles according to years of study

Subsequently, the population was divided by years of study, regardless of the admission year, obtaining 2 groups. Group “1” corresponded to students with 1-2 years of study, and group “2” to students with 3-5 years of study. From these, we derive the results shown in Table 3, where it can be seen that the Reflexive and Theoretical learning styles are those with the highest averages and, likewise, that the Active style is the less valued in both groups.

Table 3 – Mean values of the learning styles from the HALSQ questionnaire according to the students’ years of study. Punta Arenas, Chile, 2018.

Style	1-2 years of study (n=73)		3-5 years of study (n=113)		p-value†
	Mean	SD*	Mean	SD	
Active	11.64	2.89	11.35	3.57	0.378
Reflexive	14.73	2.92	14.89	3.18	0.647
Theoretical	12.67	2.91	12.94	2.79	0.563
Pragmatic	11.90	2.63	12.07	3.06	0.680

*SD: Standard Deviation; †p-value: Calculated with Wilcoxon’s non-parametric test - Mann Whitney’ U test

No statistically significant differences were observed in the value that both groups assign to the different learning styles ($p>0.05$).

When correlating years of study and learning styles, the results of Table 4 no statistical significance is shown between them ($p>0.05$).

Table 4 - Correlation coefficient between years of study and learning styles. Punta Arenas, Chile, 2018. (n=186)

		Active	Reflexive	Theoretical	Pragmatic
Years of study	Correlation coefficient	-0.069	0.021	0.034	0.023
	Sig.	0.351	0.781	0.646	0.754

Preference for the learning styles

To calculate the preferences for each learning style, only those scores were taken into account which showed “high” and “very high” preference for each style. This means that a value over or equal to four should be present in the mentioned learning style, and a score below or equal to three in the other styles to be considered as a “defined style”. Likewise, to consider two and three defined styles, these had to meet the same initial condition.

In Figure 1 you can see, from the results, it was concluded that, in 72 students (39%), only one learning style was predominant; they preferably concentrated on the Theoretical and Active styles, and less on the Pragmatic one. Similarly, as a second majority, it can be observed that 50 students (27%) had maximum preferences for two of the four learning styles; high preference for the Active and Theoretical styles is seen again, although this time, each one is combined with the Pragmatic style. Likewise, 23% of the surveyed students do not show a defined preference for any of the four styles, maintaining similar scores in each style, without extrapolating the results in minimum or maximum values. With a value of 8% we find those students in which 3 learning styles were predominant in most of the cases (ten subjects), who favored the Active-Theoretical-Pragmatic combination. It is important to highlight that this combination is characterized by a reduced preference for the Reflexive style; and, with a value of 3%, we find those who present all the learning styles.

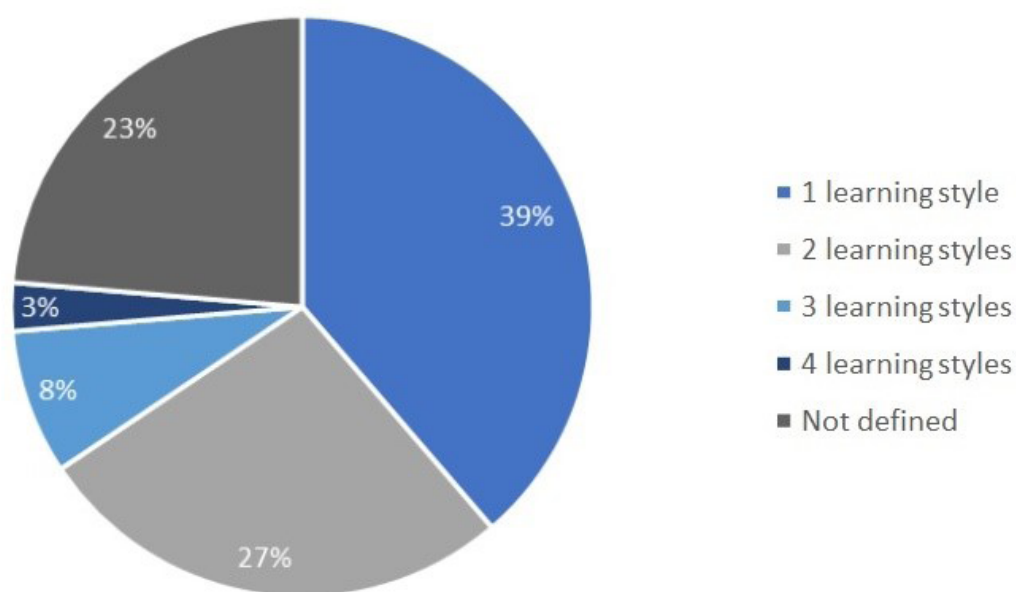


Figure 1 – Percentage of the number of learning styles present in the students. Punta Arenas, Chile, 2018.

DISCUSSION

University teaching is committed to the integral training of the students; to such an end, knowledge regarding their preferred ways of learning, with a conceptual and methodological approach, will contribute to identify their learning styles, allowing the professors to delineate pedagogical strategies with a motivating character which lead to a more effective outcome in the learning process of their students.

On the other hand, if the students know their learning styles, they will be able to organize and plan their learning, which will eventually contribute to improve their academic performance.

Therefore, the results of this research have allowed identifying the most preferred learning styles in the Nursing students, relating them with the “class” and “years of study” variables used to determine if the styles change with the progression in the years of study, enabling a broader view of the learning styles present in the students, from their admission until they finish their training, which can be after the 5 years of the undergraduate course or, maybe, after more years of study if they have failed any annual subject. According to the results obtained, it was observed that a defined style was predominant in the students, the Reflexive being the one most preferred in all the classes and in the two groups that were determined according to the years of study. The second style, of moderate preference, was the Theoretical. On the other hand, a slight increase was observed of the score in the mean for the Reflexive style in the fourth year of the course; likewise, the least preferred style was the Active one, coinciding with other research studies, which have informed on the Nursing students’ learning styles with similar results.¹⁷ One of them was conducted in the University of Concepción, Chile, where the HALSQ questionnaire was applied relating it to two subjects of the first semester of the first year: 193 Nursing students participated of the study, which consisted of two consecutive cohorts (2009-2010), and which concluded that the predominant style was the Reflexive one. Likewise, a study¹⁸ conducted with 210 Nursing Bachelor students in the Autonomous University of the State of Morelo, Mexico, used the same instrument and the results obtained mention the Reflexive style with a high percentage of preference whereas the least preferred is the Active style. It was also observed that the styles change according to the semester and to gender, from a predominantly Theoretical style during the first semester to a Reflexive one in the eighth, in contrast to our study, where the Reflexive style is determinant in all the classes and in both genders. Another study¹⁹ identifies the Nursing students’ learning styles in a 2010-2014 cohort conducted in Guerrero, Mexico. It compared the learning styles at admission and at graduation and the results determined that the Reflexive style maintained its preference in the students at both moments.

Considering previous studies including ours, they are in line with the results obtained, thus determining the Reflexive style as the one most preferred by the Nursing students. However, there exist research studies that do not coincide with these results, for example: a study conducted with 217 Nursing students from the first to the eighth semester in the Autonomous University of Querétaro, Mexico,¹⁷ applied the HALSQ questionnaire and the results obtained grant higher preference to the Theoretical and Pragmatic styles, the least preferred being the Reflexive, which did not present any change along the training process. The authors’ arguments are interesting, when referring that this result is related to the strategies used by the professors, which, according to the students’ answers in a focus group, were referred to as offering limited guidance or promotion to their learning style.

The aforementioned makes us think that learning is more effective when employing the strategies which are adequate to the students’ learning styles, hence the importance of being able to identify them in order to attain the integrative education needed to train professionals who better face the working world.

CONCLUSION

There is concern in the universities about knowing how the learning process occurs in the students, as a measure to improve the quality of education. Especially in the current times when the students live in a globalized world, with a marked development of Information and Communication Technologies (ICTs), which creates the need to acquire the exact abilities and competences to develop and adapt to these new and rapidly changing scientific and/or technological advances.

In this study, and coinciding with other research studies for health area students, the Reflexive style stands out as the most predominant; however, the great majority of our students present a moderate preference for the Reflexive and Theoretical learning styles, indicating they have more

than one style; this is consonance with a number of other authors who state that the students can present all the styles but that the level of development in each of them is what signals the difference.

The relation of the Reflexive style with being a student in the health area is given by the fact that they are experimental undergraduate courses, where the students need to observe more and analyze the situations before making any decision when caring for the patients, which requires them to be careful, cautious, and discreet: all these characteristics are necessary especially in undergraduate nurses who are learning to develop care management with a leadership vein which will allow them to perform in any scenario of the working world.

The learning strategies currently used in the Nursing undergraduate course of the University of Magallanes have contributed to the results of this study because the students from first to fifth year conduct clinical simulations, problem-based learning, and case studies, strategies which allow them to develop the competences they need for an integral professional training.

Knowing the learning styles diagnosis from the start to the end of the undergraduate course allows evidencing that the students learn in different ways. For this reason it is necessary that the training professors set themselves out to know the students' learning styles to implement new teaching and motivating strategies that allow improving the students' learning process and keep on providing them tools which ease learning acquisition to become professionals with an integral training.

REFERENCES

1. Martínez NR, González MLC, Gil DJG. Preferencias en estilos de aprendizaje de los alumnos que cursan los estudios de Bachillerato en la región de Murcia. *Rev Tendencia Pedagógicas* [Internet]. 2017 [cited 2019 May 14];30:105-16. Available from: <https://revistas.uam.es/tendenciaspedagogicas/article/view/8124>
2. Alonso C, Gallego D, Honey P. Estilos individuales de aprendizaje: implicaciones en la conducta vocacional. *Manual de asesoramiento y orientación vocacional*. Madrid (ES): Síntesis; 1994.
3. Murphy S, Hartigan I, Walshe N, Flynn AV, O'Brien S. Merging problem-based learning and simulation as an innovative pedagogy in nurse education. *Clin Simul Nurs* [Internet]. 2011 [cited 2019 May 14];7(4):141-8. Available from: <https://doi.org/10.1016/j.ecns.2010.01.003>
4. González F, Saéz K, Ramírez L. Perfiles de estilos de aprendizaje y rendimiento primer año enfermería. *Cienc Enferm* [internet]. 2016 [cited 2019 May 14]; 22(1):87-99. Available from: <http://doi.org/10.4067/s0717-95532016000100008>
5. Unesco. Declaración Mundial Sobre la Educación Superior en el siglo XXI: Visión y Acción [Internet]. 1998 [cited 2019 May 13]. Available from: http://www.unesco.org/education/educprog/wche/declaration_spa.htm.
6. Jürgens K. Evaluación de la motivación, estilos y estrategias de aprendizaje en estudiantes de la Facultad de Ciencias de la Universidad Austral de Chile [thesis]. Extremadura (ES): Universidad de Extremadura, Departamento de Ciencias de la Educación; 2016.
7. Sprock AS. Conceptualización de los modelos de estilos de aprendizaje. *J Learning Styles* [Internet]. 2019 [cited 2019 May 13];11(21):35-109. Available from: <http://revistaestilosdeaprendizaje.com/article/view/1088/1809>
8. Ospina MAP, Salazar LID, Meneses JSC. Modelos de estilos de aprendizaje: una actualización para su revisión y análisis. *Rev Colomb Educ* [Internet]. 2013 [cited 2019 May 5];64:70-105. Available from: <http://www.scielo.org.co/pdf/rcde/n64/n64a04.pdf>
9. Graza MDRR, Salazar MFS, Villarreal JJ, Olage RIE. Análisis de los estilos de aprendizaje en estudiantes universitarios del área de la salud. *J Learning Styles* [Internet]. 2016 [cited 2019 May 13];9(7):54-74. Available from: <http://learningstyles.uvu.edu/index.php/jls/article/view/281/205>

10. Hoffmann A Freiberg, Liporace MF. Estilos de aprendizaje en estudiantes universitarios ingresantes y avanzados de Buenos Aires. *Liberabit* [Internet]. 2015 [cited 2019 May 13]; 21(1):71-9. Available from: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1729-48272015000100007&lng=es&nrm=iso
11. Parra KM, García J, Navarro N. Estilos de aprendizaje en los estudiantes de primer año de las carreras de Fonoaudiología y Kinesiología. *Rev Educ Cienc Salud* [Internet]. 2017 [cited 2019 May 13];14(2):122-9. Available from: <http://www.udec.cl/ofem/recs/anteriores/vol1422017/artinv14217e.htm>
12. García-Cué JI, Jiménez-Velázquez MA, Quintanar CS, Saldana TM. Estilos de aprendizaje y otras perspectivas pedagógicas del siglo XXI. México (MX): Colpos; 2013.
13. Martin, M. Aportaciones pedagógicas de las TIC a los estilos de aprendizaje. *Tendencias Pedagógicas* [Internet]. 2017 [cited 2019 May 13];30:91-104. Available from: <https://doi.org/10.15366/tp2017.30.005>
14. Lima MM, Reibnitz KS, Kloh D, Silva KL, Ferraz F. The pedagogical relationship in practical-reflexive education: characteristic elements of teaching integrality in nurse education. *Texto Contexto Enferm* [Internet]. 2018 [cited 2019 May 13];27(2):e1810016. Available from: <https://doi.org/10.1590/0104-070720180001810016>
15. Bernardino AO, Coriolano-Marinus MWL, Santos AHS, Linhares FMP, Cavalcanti AMTS, Lima LS. Motivation of nursing students and their influence in the teaching-learning process. *Texto Contexto Enferm* [Internet]. 2018 [cited 2019 May 13];27(1):e1900016. Available from: <http://doi.org/10.1590/0104-070720180001900016>.
16. Villalba, A. Estilos de aprendizaje en alumnos universitarios de profesorado en biología y licenciatura en biodiversidad. *J Learning Styles* [Internet]. 2015 [cited 2019 May 13];8(16):79-100. Available from: <http://revistaestilosdeaprendizaje.com/article/view/1018/1727>
17. González B, Hernandez M, Castrejon V. Estilos de Aprendizaje para el desarrollo de competencias en estudiantes de la Licenciatura en Enfermería. *Rev Iberoam Invest Desar Educ* [Internet]. 2017 [cited 2019 May 13];8(15). Available from: <http://dx.doi.org/10.23913/ride.v8i16.345>
18. Jaime ERA, Márquez CIH, Dominguez MT. Estilos de aprendizaje en alumnos de la Licenciatura en Enfermería. *Enferm Doc* [Internet]. 2016 [cited 2019 May 13];105:22-7. Available from: http://www.revistaenfermeriadocente.es/index.php/endo/article/view/107/pdf_341
19. Roman L, Diaz L, Leyva E. Modificación de los estilos de aprendizaje durante la formación profesional, en estudiantes de Enfermería. *J Learning Styles* [Internet]. 2016 [cited 2019 May 13];8(16):25-48. Available from: <http://learningstyles.uvu.edu/index.php/jls/article/view/238/192>

NOTES

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CONTRIBUTION OF AUTHORITY

Study design: Mancilla PNB, Backes VMS.

Data collect: Mancilla PNB.

Data analysis and interpretation: Mancilla PNB, Backes VMS.

Discussion of the results: Mancilla PNB, Backes VMS.

Writing and / or critical review of content: Mancilla PNB, Backes VMS, Canever BP.

Review and final approval of the final version: Mancilla PNB, Backes VMS, Canever BP.

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CORRESPONDING AUTHOR

Bruna Pedroso Canever

brunacanever@gmail.com

