

Estilos de aprendizaje para el desarrollo de competencias en estudiantes de la Licenciatura en Enfermería

*Learning styles for the development of competences in students of the Degree in
Nursing*

*Aprendizagem para o desenvolvimento de competências em estudantes do
Mestrado em Enfermagem*

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Resumen

La teoría del aprendizaje basada en la experiencia ha demostrado que en los procesos cognoscitivos influyen los estilos de aprendizaje, es decir, la forma preferida de un individuo de responder a las tareas de aprendizaje. **Objetivo:** Identificar los estilos de aprendizaje en estudiantes de la Licenciatura en Enfermería de una universidad pública. **Metodología:** Estudio descriptivo transversal, participaron 271 estudiantes del primero al octavo semestre. Se aplicó el cuestionario Estilos de aprendizaje de Honey-Alonso, que consta de 20 reactivos para cada uno de los cuatro estilos de aprendizaje (Activo, Reflexivo, Teórico y Pragmático), estableciéndose tres puntos de corte que orientan la direccionalidad: potencial, en desarrollo y déficit. En el análisis de la información se utilizó estadística descriptiva. Se obtuvo la autorización de las autoridades de la Facultad para realizar el estudio y se solicitó el consentimiento verbal de los estudiantes al momento de aplicar el instrumento. **Resultados:** La edad promedio es de 22.2 años, siendo el 84.2% del sexo femenino. Los mayores porcentajes de preferencia de estilo de aprendizaje se presentan en el activo, con una preferencia en desarrollo (51.7%) y potencial (26.9%), al igual que en el estilo teórico (56.8% y 22.5% respectivamente), siendo el estilo reflexivo el que menor porcentaje obtuvo como preferencia potencial (3.0%) seguido del pragmático (4.8%). El estilo activo en los alumnos de primero a cuarto semestre tiene una preferencia potencial media y alta del 26.9% en tanto que para el teórico su porcentaje es del 23.5%, pero muy bajo para los estilos reflexivo (2.5%) y pragmático (1.7%). Sin embargo, es este último estilo el que tiene mayor porcentaje de preferencia en desarrollo. En relación con los estilos de aprendizaje preferentes reportados por los alumnos de quinto a octavo semestre, los resultados muestran un comportamiento prácticamente similar para los estilos activo (27%) y teórico (21.7%); hay un mínimo incremento porcentual para los estilos reflexivo (3.3%) y pragmático (7.2%). **Conclusión.** En general, los estilos preferenciales de los estudiantes son el teórico y el activo, siendo el reflexivo y el pragmático los menos desarrollados, por lo que es indispensable generar estrategias docentes que coadyuven a su potenciación, como parte fundamental en el desarrollo de competencias.

Palabras clave: Estilos de aprendizaje, estudiantes, competencias profesionales, enfermería.

Abstract

According to experience-based learning theory, an individual's cognitive processes influence the individual's learning style, or the way a person responds to educational tasks. Objective: To determine the learning styles of undergraduate nursing students at a public university. Method: A descriptive cross-sectional study in which 271 first to eighth semester students participated. The Honey-Alonso Learning Styles Questionnaire was used, which consists of 20 questions for each of the four learning styles (active, reflective, theoretical, and pragmatic). Three cut-points were established to analyze the type of each learning style: potential, developing, and lacking. Descriptive statistics were used to analyze the data. The study was authorized by the faculty, and the students' verbal consent was obtained when the study was performed. Results: The average age of the participants was 22.2 years, and 84.2% were female. The active and theoretical styles were ranked the highest, in terms of percentage. The active style had a developing percentage of 51.7% and a potential percentage of 26.9%; the theoretical style had 56.8% and 22.5%, respectively. The reflective style had the lowest potential percentage (3.0%), followed by the pragmatic style (4.8%). Among the first to fourth semester students, the active style had a medium to high potential percentage of 26.9%, while the theoretical style had a potential percentage of 23.5%. Reflective (2.5%) and pragmatic (1.7%) had very low percentages in this category; however, the latter had the highest developing percentage. The fifth to eighth semester students showed similar percentages for active (27%) and theoretical (21.7%) learning styles; the reflective (3.3%) and pragmatic (7.2%) learning styles were slightly higher. Conclusion. In general, the students showed an inclination for the theoretical and active learning styles, and the reflective and pragmatic styles were less developed. It is thus essential to develop teaching strategies that complement these learning styles as a fundamental part of skill development.

Keywords: Learning styles, students, professional skills, nursing.

Resumo

A teoria da aprendizagem experiencial mostrou que os processos cognitivos influenciam os estilos de aprendizagem, ou seja, o modo preferido para que um indivíduo responda às tarefas de aprendizagem. Objetivo: Identificar os estilos de aprendizagem em estudantes da Licenciatura em Enfermagem de uma universidade pública. Metodologia: estudo descritivo transversal, 271 alunos participaram do primeiro ao oitavo semestre. Foi aplicado o questionário de estilos de aprendizagem do Honey-Alonso, que consiste em 20 itens para cada um dos quatro estilos de aprendizagem (Ativo, Reflexivo, Teórico e Pragmático), estabelecendo três pontos de corte que orientam a direcionalidade: potencial, em desenvolvimento e déficit. Na análise das informações, foram utilizadas estatísticas descritivas. A autorização foi obtida junto das autoridades da Faculdade para realizar o estudo e o consentimento verbal dos alunos foi solicitado no momento da aplicação do instrumento. Resultados: a idade média é de 22,2 anos, sendo 84,2% feminino. As maiores porcentagens de preferência para o estilo de aprendizagem são apresentadas no ativo, com preferência em desenvolvimento (51,7%) e potencial (26,9%), como no estilo teórico (56,8% e 22,5%, respectivamente), sendo o estilo Reflexivo, a porcentagem mais baixa obtida como preferência potencial (3,0%) seguida da pragmática (4,8%). O estilo ativo nos alunos do primeiro ao quarto semestre tem uma preferência de potencial médio e alto de 26,9%, enquanto que para o teórico sua porcentagem é de 23,5%, mas muito baixa para os estilos reflexivo (2,5%) e pragmático (1,7%). No entanto, é este último estilo que tem a maior porcentagem de preferência em desenvolvimento. Em relação aos estilos de aprendizagem preferidos relatados pelos alunos do quinto ao oitavo semestre, os resultados mostram um comportamento praticamente similar para os estilos ativos (27%) e teóricos (21,7%); existe um aumento percentual mínimo para os estilos reflexivo (3,3%) e pragmáticos (7,2%). Conclusão Em geral, os estilos preferenciais dos alunos são teóricos e ativos, sendo o reflexivo e o pragmático menos desenvolvidos, por isso é essencial gerar estratégias de ensino que contribuam para a capacitação, como parte fundamental no desenvolvimento de competências.

Palavras-chave: estilos de aprendizagem, estudantes, habilidades profissionais, enfermagem.

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Introduction

The different innovations and reforms that are currently being carried out in education are centered on the Competency-Based Approach (EBC), which has an impact on the management of the curriculum, on the quality policy of education, on teaching and in the different evaluation processes. This approach is widespread in the global sphere and that is why it must be studied and put into practice with critical and proactive reflection, rigor and creativity.

The competencies approach is contributing to transform teaching and learning processes, as it articulates theory with practice, contextualizes training, guides the organization of contents, promotes comprehensive education (unifies "knowing knowing" with "knowing") make "and" know how to be ") and establishes permanent and rigorous evaluation mechanisms, based on performance in problematic situations of the context.

If we resort to the epistemological origin of the term competence, we find that it comes from the Latin *competere* that means what corresponds or competes with the subject, what is within its scope of responsibility, and precisely in education, what matters is to encourage the student to become competent , that is, that learning is their responsibility and therefore, assume their training process as something that is their own.

In Mexico, for some years, it has been established as an educational policy to build training designs based on the Competency Model, which is a process with a certain degree of complexity, since the competences in principle, identify fields of knowledge and practices education of remarkable internal complexity. That is, designing a competence requires knowing the field of action to which it refers, then knowing how to disaggregate it in its basic components and reconstructing it as an integrated training process.

Competencies are processes through which people perform activities or solve problems of daily life and the professional-suitability context, through the articulation of three types of knowledge: "know how to do", "know know" and "know be ", with a critical conscience and the assumption of responsibility for the actions carried out.

They are concepts that refer to capacities, that is, to actions that produce specific results or achievements in situations in which some specific skill or ability is required to achieve said achievements. Competencies are applied, as relevant terms, to conditions in which problems to be solved or results to be produced are defined (Ribes, 1990, page 239).

It is the adaptive, cognitive-behavioral capacity that allows responding to the demands of the environment with a certain level of adequacy, in this sense, what society points out as pertinent is what the subject is expected to do and, in order to achieve it, it has to do a simultaneous display of knowledge, feelings, thoughts, abilities (Frade, 2008).

Faced with the accelerated advance of knowledge that is generated and the ways of transmission of today's society mediated by new information and communication technologies, with the consequent demands that are presented to new generations, the competency model is presented as an alternative for the construction of student performance, based on the development of the adaptive, cognitive and behavioral capacities that will allow them to face the challenges of the time that they will have to live.

In higher education, the essential feature of this educational model is to promote autonomous learning that enables comprehensive education while facilitating the labor insertion of students, the foregoing means turning what is knowledge and professional action into a comprehensive educational process, that translates into a total articulation between the knowledge: Conceptual (Knowing how to know), the procedural (Knowing how to do) and the attitudinal axiological (Knowing how to coexist and knowing how to be) (Delors 1997; Garza, 2012).

Education in the area of health is not subtracted from these events, which also translate into compliance with quality indicators of national accrediting bodies, which validate their educational programs. Hence the search for better tools for educational practice to impact the academic performance of students.

In the formal contexts of teaching and learning for more than two decades, we worked under the assumption that the students carried out the same cognitive processes of knowledge acquisition and elaboration, and in opposition to this position, the existence of differences was demonstrated Individuals in the procedures and basic cognitive mechanisms involved in learning, that is, in

knowing subjects manifest different tendencies to develop, or choose certain ways of learning and using information, which were called learning styles (Camacho, Chiappe, López, 2011). These orientations depend on the environment or context and can be changing, hence it is affirmed that a person's learning style can be malleable (Laguzzi, Bernardi, Araujo, Ventura, Vigliano, 2013).

These natural abilities of learning, are determined by the way in which the subjects are formed throughout their life, and therefore constitute a particular way of appropriating the environment. Hence the importance of recognizing students' own learning style in order to improve or strengthen those in which they have low preference, and identify the cognitive strategies to be used, basis and principle to develop their ability to learn to learn. and, from that, to be able to solve problems of daily life and of the work context, with a critical conscience and assumption of responsibility (Arellano, 2014), in other words, to be competent professionals.

In the same way, the academic environment has discussed the importance of understanding the different teaching strategies that can be used to promote learning styles, the factors on which their development depends and the ways in which they are presented in each individual, this in order to design optimal teaching and learning processes (Antúnez, Ramírez, Rodríguez, Soler, 2013).

There are multiple definitions about the concept of learning styles. (Castro & Guzmán de Castro, 2006) indicate that they are the preferences that students have to think and relate to others in different environments. Alonso, Gallego and Honey (2002) define them as the cognitive, affective and physiological traits that serve as relatively stable indicators of how students perceive, interact and respond to their learning environments (Rodríguez, 2012). On the other hand, Sternberg affirms that each cognitive style, through which the individual organizes and processes information inside them, shapes their learning styles, where intelligence and personality are articulated (Herrera and Mohamed, 2010).

Despite the coexistence of multiple theoretical models of learning styles in the university environment, two lines of research currently predominate: the European model of Alonso García, Gallego and Honey and the Anglo-Saxon model of Felder and Silverman. The prevalence of these approaches is due to the fact that they are oriented towards the investigation of the psychological and cognitive aspects of learning as a whole (Gutiérrez, 2006).

The approach promoted by Alonso García, Gallego and Honey (1999) of the National University of Distance Education-UNED (Spain) resumed the classification proposed in 1986 by Honey and Mumford, based on four learning styles: active, reflective, pragmatic and Theoretical, adapting and validating, based on this classification, the Honey and Alonso Learning Styles Questionnaire (CHAEA) for university students.

For the development of the research, we focus on the analysis of the four types of learning styles according to the way of organizing and working: active, reflective, theoretical and pragmatic style (Aragón & Jiménez 2009). However, it is important to clarify as expressed by Alonso (1992), there are no pure styles in people, but profiles of learning styles, thus, students with active, reflective, theoretical and pragmatic predominants possess several of the characteristics main ones that are described below:

Active. His learning is based on direct experience, so he is always open to experimentation, group work, challenges and is characterized by his involvement in the action; Those who have a preference for this style, stand out for being animators, discoverers, improvisers, creatives, leaders. The active style is characteristic of people who are fully involved and without prejudice in new situations. They are open-minded, not skeptical, and they grow up facing the challenges of new experiences boring with long-term activities. They are spontaneous, creative innovators, eager to learn and solve problems.

The question to which the students respond with a predominantly active style is 'How?' Hence, the favorable situations for them are when there are activities that present a challenge to them. Do short activities or immediate results. When there is emotion, drama, crisis. Unfavorable, have a passive role, analyze or interpret works alone.

Reflexive. Style based on observation from different perspectives, consider all alternatives; They are weighted, conscientious, analytical, detailed, forward looking, questioning, investigators.

The reflective style is characteristic of people who like to consider the experiences observed from different perspectives. Collect data, analyzing them carefully before reaching a conclusion. They are prudent and consider all possible alternatives before making a move. They listen to others and do not act until they take ownership of the situation.

The question to which respondents respond in learning students with a predominant reflective style is 'why?' Hence the favorable situations for them are when they can offer observations and analyze

the situation. When can they think before acting? Unfavorable, when they are forced to be the center of attention. When you hurry from one activity to another.

When they have to act without planning

Theoretical: based on abstract conceptualization, in the formation of conclusions and integrates the facts into coherent theories; Those who prefer this style are methodical, objective, critical, structured, disciplined, systematic, synthetic, perfectionist, creators of procedures.

In the theoretical style, one tends to be a perfectionist, adapting and integrating observations into logical and complex theories. This collective is deep in its system of thought seeking rationality and objectivity. They look for rationality and objectivity, fleeing from the subjective and the ambiguous.

The question to which students respond with a predominant theoretical style is 'What?' Hence, the favorable situations for them are when they work from models, theories, systems and concepts that represent a challenge. When they have the opportunity to ask or inquire. Unfavorable, activities that imply ambiguity. In situations that emphasize emotions and feelings. When they have to act without theoretical foundation.

Pragmatic: based on active experimentation and search for practical applications; it is characterized by eclecticism; those who develop this style are experimenters, practical, direct, realistic, effective; they enjoy carrying out what they have learned, planning actions, organizing, situating themselves in the present, solving problems.

In the pragmatic style, the practical application of ideas is sought. They are people who like to act quickly and safely with those ideas and projects that attract them, taking advantage of the first opportunity to experiment. The question to which students respond with a predominantly pragmatic style is 'What would happen?' Hence the favorable situations for them are when they can relate theory and practice, see others do something. Unfavorable, when what is learned is not related to their immediate needs, to those activities that have no apparent purpose, when what they do is not related to reality.

Therefore, it is clear that a good structuring of learning styles in university students can facilitate access to a high volume of information, acquire knowledge and be guided in them with a real personal sense and creative ability to solve the problems. problems posed by society (Aguilar, 2010).

Thus, the objective of this study was to identify the learning styles of the students of the Nursing Degree of a public university, as a fundamental premise and platform for the development of knowledge and, therefore, the management of professional competences.

Methodology

A quantitative, descriptive, cross-sectional study was designed that included the total of students enrolled from the first to the eighth semester (271), the "Learning Styles" instrument of Honey-Alonso was applied (CHAEA, 2009, which consists of 80 items that correspond to each of the four learning styles (20 for each style), the maximum and minimum ranges guide the directionality for the enhancement and / or development of each of the styles in the subjects (Table 1), their evaluation results from the summation of the scores in each of them and represents their dominance and / or weakness of preference in the subject.

Tabla 1. Estilos de aprendizaje, según su preferencia.

Estilo	Preferencia		
	Baja	Media	Alta
Activo	8	9-13	14
Reflexivo	13	14-18	19
Teórico	9	10-14	15
Pragmático	9	10-16	17

Fuente: Elaborado con base en CHAEA, Alonso & Honey, 2009.

For the analysis of the data, descriptive statistics were used. The study adhered to the provisions of the General Health Law for research on human beings, with the consent of the students prior to the application of the instrument.

Results

Participating in the study were 271 students of the Bachelor of Nursing enrolled between the first and eighth semesters, an average age of 22.2 years (DE + 3,308), 84.2% of the students are female.

In relation to the preference of learning style (Table 2), the highest percentages are presented in the active style, with a preference in development (51.7%) and potential (26.9%), as in the theoretical style (56.8% and 22.5% respectively), the reflective style being that which obtained the lowest percentage in potential preference (3%), followed by the pragmatic one (4.8%). It should be noted that in the pragmatic style a high percentage has a preference in development (80%), which indicates an important area of opportunity to help in their development.

Tabla 2. Estilos de aprendizaje según preferencia.

Estilo	Preferencia						Total
	Baja		Media		Alta		
	f	%	f	%	f	%	
Activo	58	21.4	140	51.7	73	26.9	100%
Reflexivo	122	45.0	141	52.0	8	3.0	100%
Teórico	56	20.7	154	56.8	61	22.5	100%
Pragmático	40	14.8	218	80.4	13	4.8	100%

Fuente: Cuestionario CHAEA (Alonso & Honey, 2009) n=271

On the other hand, and considering that the study is cross-sectional, a comparison was made between the preferences of the learning styles according to the semester studied (Table 3). In the active style students from first to fourth semester have a developing preference of 48.7 and potential of 26.9%, with similar percentages for the theoretical style (58% and 23.5% respectively) but with little potential development in reflective styles (2.5 %) and pragmatic (1.7%). However, it is this latter style that presents the highest percentage of preference in development, with 85.7%.

In relation to the preferred learning styles reported by students from the fifth to the eighth semester, the results show a practically similar behavior in developing and potential preferences both in the active style (53.9 and 27%) and in the theoretical one (55.9% and 21.7%); On the other hand, there is a minimum potential percentage increase for the reflective (3.3%) and pragmatic (7.2%) styles compared to the first to fourth semester students.

Tabla 3. Estilos de aprendizaje en estudiantes de enfermería según semestre y preferencia.

Nivel	Déficit		Desarrollo		Potencial	
	1ro. a 4to.	5to. a 8vo.	1ro. a 4to.	5to. a 8vo.	1ro. a 4to.	5to. a 8vo.
Activo	24.4%	19.1%	48.7%	53.9%	26.9%	27%
Teórico	18.5%	22.4%	58%	55.9%	23.5%	21.7%
Reflexivo	42%	47.4%	55.5%	49.3%	2.5%	3.3%
Pragmático	12.6%	16.4%	85.7%	76.3%	1.7%	7.2%

Fuente: Cuestionario CHAEA, Alonso & Honey, 2009

Faced with this situation, the greatest percentage difference is observed in the potential preference for pragmatic style among 1st graders. to 4th. semester (31.6%) vs. students from 5th to 8th grade semester (68.4%) followed by the active style (41.8% vs. 58.2% respectively), however, an important area of opportunity to consider is the low percentage of potential preference for theoretical (23.5% vs. 21.7%) and reflective styles (2.5% vs. 3.3%), fundamental in the processes of critical thinking formation.

Discussion

According to the research by Camacho, Chiappe and López (2011), the process that favors learning styles as a consequence of the interaction of university students belonging to the health area is developed from an experiential learning perspective. The purpose of this study was to identify learning styles and their correlation with academic performance and analyze students' perception of satisfaction and difficulty in relation to a designed learning strategy. Their results show that the high academic performance is higher in the reflective and theoretical styles, while in the other styles the scores obtained in the academic performance were inferior to the low academic performance. Hence the importance that, based on the results obtained in our study, didactic strategies that favor these learning styles be established.

Similarly, in a study conducted by Saldaña (2010), the Puebla School of Medicine described active, reflective, theoretical and pragmatic learning styles; the Honey-Alonso Questionnaire for Learning Styles was used and, contrary to our results, it was found that the predominant learning style was reflective (44%).

Ordoñez, Rosety-Rodríguez & Rosety-Plaza (2003) conducted a study of 150 first, second and third year nursing students whose average age was 21 years, concluding that the predominant style was the reflective one, followed by the pragmatic, theoretical and active. López & Ballesteros (2003) came to such a conclusion carrying out the study to 189 students of the nursing degree, where the predominant style was also the reflective followed by the theorist, not finding differences with respect to sex.

In this sense, it is important to emphasize that it is precisely the reflective style that has the least preference in the students of our study and no change is perceived in its development throughout the training process, so it is suggested, in agreement Matamoros (2013), the development of research projects, the planning of individual and group work sequences, as well as the use of audiovisual material; organize meetings and debates; manage the method of reflection and discussion through the elaboration of conceptual maps, use materials with questions that arouse interest, are based on real phenomena and provoke their curiosity.

Subject to the fact that this information is the subject of another exposition, we can infer that this is due to the teaching strategies used by the professors themselves, who, in the majority of nursing

students who participated in our study, are perceived as poorly oriented or promoters of learning styles, as they say: "Do not pigeonhole only in presenting us the information in slides", like "That the professors expose all the topics" and "it would also serve the conclusions very much at the end of the class not individually, but in a group to see if we understand the subject well or in which part we fail or what was missing "(Excerpts from the participation of active students in the focus group).

Alonso C, Gallego D & Honey (2002) they affirm that students learn more effectively when they are taught with their predominant learning styles, hence the identification of students' learning styles and their interrelations provide conceptual and applied tools to promote appropriate didactic designs in relation to preferences predominantly of students.

Finally, it is important to note that among the limitations of this research, were the time available to students, since they differ in schedules and practices of the different semesters. With respect to the second stage of the research, a qualitative study on the perception that students have about teaching practices, difficulties have been found in terms of opening to dialogue through group interviews with students.

For future research and once the analysis of the qualitative part of the study has been completed, it is recommended that a comparative descriptive analysis be made between those factors that intervene in the absence of didactic strategies that favor learning styles.

Conclusions

As it was well observed, the learning style that is in constant development in the students of the bachelor in nursing of the UAQ, is the pragmatic one, apparently due to the nature of the doing and doing of nursing, nevertheless, it is necessary to reinforce Both the theoretical learning style and the reflective one due to the fact that day by day it is necessary to make decisions in the daily actions as health personnel, as well as to analyze and solve problems, for a good professional act.

In this work, the main differences between the learning styles in the students of the nursing degree are established by the contents throughout the career, as well as by the diverse activities that the professors use when involving only some of the styles of learning, without succeeding in promoting the development and empowerment of all styles.

From this perspective, the achievement of greater scope and better results in academic training would be fundamentally given by the possibility of diversifying the methods and techniques used in the classroom space. In short, this resource would reduce possible mismatches between learning styles and teaching styles. It is considered that to the extent that teachers can work from individual preferences, the capacities and performance of students will be enhanced.

In the same way, the academic load of students and independent activities may be generating conditions of neglect in some tasks (mostly those that are not to your liking), as well as the deficiency in the planning and organization of their activities, with the consequent loss of interest and adoption of routines that do not favor learning.

It is suggested training in the pedagogical and didactic aspect to teachers, which promotes the planning, development and evaluation of innovative, playful didactic activities; the incorporation of group techniques, as well as practical sessions for the teaching of various topics of a theoretical nature, this from situated learning, where various situations that arise in professional life are addressed. Use understandable information with clearer language that allows students to reason, be logical and carry a sequence in their actions. Specifically, generate reflection from the group and individual conclusions and express them to know if the topic was understood or to detect possible weaknesses.

Finally, adopt different teaching strategies to teach, in which a little of each style is involved, and the student's perception of the learning process and development of skills is favored and therefore achieve a satisfaction in the overall professional development of the student .

According to the above, the differences of learning styles found in the students mark distinctions in the form and learning rhythms of each one of them. Therefore, it is justified to understand that cognitive processes are varied, likewise, the application of pedagogical and didactic strategies within educational institutions must be shaped to the focus of the students' learning style, thus facilitating processes, and leading to a greater impact on the quality of information and learning.

The current didactic approaches suggest that the student is not enough to accumulate knowledge, in addition, he must know how to take advantage of them and use them throughout his life,

deepening them and updating them. They try to promote their abilities so that they learn to adapt to a world in permanent change.

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