

100 Years After the First Nursing School in Ecuador



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Abstract

In 2017 it was 100 years since the creation of the first school for the training of professional nurses in Ecuador, that same year this school presented a proposal for curricular redesign, which was approved and is in force and being applied. To identify differences and similarities between the program applied for training in 1917 and the current program, a comparative analysis of the academic and regulatory aspects of both programs was carried out. For the construction of the findings, official documents from the historical archive of the school and the country were reviewed, and to support the comparative descriptive analysis, literature available in regional and international databases was reviewed, obtaining 9 articles published in Spanish and 4 in Spanish. English language. The subordination of the profession to the medical profession, the lack of content teaching for the development of critical thinking and reflective attitudes, and the application of traditional methodologies for degree evaluation are the elements that have been perpetuated until today. The attempts to structure a study plan away from the biomedical model, the study of the scientific method, and the application of new technologies for teaching and learning show the 100 years of evolution of this training program.

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1 Introduction

In Ecuador, from colonial times (1492-1820) until the first decades of the 20th century, the care of the sick oversaw religious orders that ran hospitals and nursing homes and oversaw training new nurses. The personnel to be trained were newly ordained nuns or destitute women who had been welcomed in these hospitals in exchange for collaborating with the cleaning of the sick and the cleaning of the services (Estevez et al., 2018).

By 1910 Ecuador had achieved greater economic development – a product of the agro-export boom of the time – which is why the government's gaze was directed towards the preservation of sanitary conditions and the health of people who were considered the main element of commercial exchange: workforce. To meet this need, the State guaranteed the construction of hospitals near the ports that, at that time, were recognized as the areas of greatest commercial exchange (Estrella, 2014; Paredes, 1964).

The creation of these new hospitals exposed the need to have personnel trained to care for the sick, a requirement that would be exposed in the conclusions of the First Medical Congress held in Ecuador in 1915, which highlighted the need to have professional nurses to assist doctors in caring for the sick (García Drouet et al., 1915). At that time in the country, there were only schools for training in medicine, dentistry, obstetrics, and pharmacy.

The following year, 1916, Isidro Ayora Cueva, a doctor specializing in Germany, at that time director of the Quito Maternity Hospital and dean of the Faculty of Medicine of the Central University of Ecuador (UCE), accepted the demand of the medical union, presented to the General Council of Public Instruction – the body that governed higher education at the time – the project to create a school for nurses attached to the Faculty of Medicine of the UCE, a project that was approved by Agreement No. 8 of February 28, 1917 (Egas, 1917; Ramírez Molina, 2018).

The first classes of this nursing school oversaw Dr. Ayora himself who -inspired by the work of European nurses- established a program of practical theoretical education in which the student had to complete a three-month preliminary preparation at the Hospital Eugenio Espejo and three annual training courses for, after a "general theoretical exam" to receive the title of Nurse (Clark 2012; Egas 1917).

Since those first classes, more than 100 years of history have passed in nursing education in Ecuador, curricular transformations have been taking place as the health, social and political context has determined it (Skiba et al., 2008; Njie-Carr et al., 2017). The last curricular transformation of the applied nursing programs in Ecuador was carried out in 2016, the year in which all the careers presented a curricular redesign proposal to the Higher Education Council (CES), proposals that were approved between 2016 and 2017. The approved projects include the curricular redesign of the nursing career at UCE, created in 1942 to replace the Isidro Ayora school of nurses (Hayden, 2010; Sherwood & Drenkard, 2007).

2 Materials and Methods

The redesigned document collects the main characteristics of the current model applied by the UCE for the training of nursing professionals, from this document, the present investigation, aims to identify differences and similarities between the first program applied for the training of nurses in 1917 and the current program approved by the CES in 2017. The findings were drawn up from minutes and official historical documents, as well as the evaluation reports of the training programs applied to nursing in Ecuador, and to support this comparative descriptive analysis, literature available in the Scielo, Medline, and Google Scholar databases was reviewed, obtaining 9 articles published in Spanish and 4 in English.

3 Results and Discussions

El primer modelo de formación aplicado para la enseñanza de la enfermería en Ecuador (1917)

The first Ecuadorian school for the training of nurses in Ecuador was created in Quito in 1917 as attached to the Faculty of Medicine of the UCE. The training program (Table 1) was structured by a test course and two annual courses in which the subjects of the study would be divided into 12 topics –possibly monthly– that would be received “in an elementary way” during the first course and would be repeated at depth in the second year (Egas, 1917).

Table 1
Curriculum applied for professional training in nursing in 1917

No.	Course content
I	<ul style="list-style-type: none"> • Notions of the anatomy of the human body • General information about diseases and their symptoms
II	<ul style="list-style-type: none"> • Contagion, wounds, asepsis, antisepsis • Warmth, pulse, breathing • Excretions, urine, bowel movements, etc.
III	<ul style="list-style-type: none"> • Conditions that must be filled by the rooms of the sick • Ventilation, light, water supply, toilets, installation of the sick room, etc.
IV	<ul style="list-style-type: none"> • Care of the sick • Grooming of the patient, clothes, bed arrangement, etc. • Baths, wet dressings, friction
V	<ul style="list-style-type: none"> • Feeding the patient • Preparation of drinks and diets
VI	<ul style="list-style-type: none"> a) Observation of the patient and report to the Doctors – Compliance with medical prescriptions <ul style="list-style-type: none"> a. Anamnesis. Status. Main symptoms. Temperature, pulse, breathing curves b. Medicines, how to use them INTERNAL (infusions, tinctures, extracts, seals, pills, pills EXTERNAL (dressings, plasters, collodion, ointments, hypodermic injections, sprays, etc.) c. Stomach washes, enemas, catheterization, suction cups
VII	<ul style="list-style-type: none"> Assistance during the examination and healing of a sick person especially injured and operated <ul style="list-style-type: none"> a) Emergency dressing in fractures, etc. b) Preparation of the nurse to be operated on c) Preparation of instruments and dressing material for operations. d) Massage
VIII	<ul style="list-style-type: none"> • First aid in accidental cases, poisoning or other emergencies <ul style="list-style-type: none"> a) Apparent death. Artificial respiration b) Haemostasis – Emergency dressings c) Poisoning and antidotes
IX	<ul style="list-style-type: none"> • Communicable disease assistance <ul style="list-style-type: none"> a. Disinfection and disinfectants b. How to prevent contagion c. Vaccines
X	<ul style="list-style-type: none"> • Signs of actual death. conditioning of the corpse
XI	<ul style="list-style-type: none"> • Conduct with the patient, his relatives, with the doctor, priests, authorities, etc. professional secrecy
XII	<ul style="list-style-type: none"> • Assistance in childbirth • Infant care

The test course consisted of a two-month preparatory course held at the Eugenio Espejo Hospital in Quito under the supervision and teaching of internal clinical and surgical professors from the UCE School of Medicine. To pass this course, and access the two annual school courses, a "favorable report" from the teachers was needed regarding the aptitudes demonstrated by the student during the training (Egas, 1917). In the annual course, the student had to go daily to the different hospital services to receive theoretical and practical teaching from the professors of internal, surgical, and obstetric medicine from the UCE medical school and a "registered nurse". The practical component covered the largest number of hours, the theoretical classes were reduced to 3 per week (Egas, 1917).

The regulations to comply with during the training process emphasized the entry and exit requirements to the program and were governed following the provisions of the second and seventh articles of the school creation agreement. To enter the program, applicants had to know how to read and write, have received at least primary education, and be over 18 years of age. The only graduation requirement to obtain the Nursing degree was to have passed the two theoretical-practical exams received at the end of each annual training course (Egas, 1917).

Even though this school was created attached to a faculty of the UCE, there were problems when registering the grades and titles of the students who passed the training course, which is why during the first four years the total number of students registered did not exceed 15, the majority being religious women seeking to formalize their knowledge (Clark, 2012). In this school and under this curriculum, more than 100 nurses between religious and secular were prepared until 1943, the year in which its closure was decreed to create in its place the National School of Nursing, today known as the Nursing Career of the UCE (Decree Presidential, 1942; Resolution approving the curricular redesign project for the nursing career at the Central University of Ecuador, 2016; Benítez de Núñez, 1992).

El modelo actual de formación aprobado para la enseñanza de enfermería en la primera escuela de enfermería de Ecuador (2017)

The UCE School of Nursing was created in 1942 as attached to the Faculty of Medical Sciences and is the academic unit that has graduated the largest number of nursing professionals in the country. (DEYA 2018) In 2017 the Evaluation Council, Accreditation and Quality Assurance of Higher Education (CEAACES) awarded this program the highest score in quality of the learning environment of the 20 programs evaluated (Evaluation of the Learning Environment of the Nursing Career. Central University of Ecuador, 2018).

Currently, this school is part of the Faculty of Medical Sciences of the UCE whose main member is the Dean, a function that most of the time has been exercised by a medical professional (Wildman & Hewison, 2009; Mackey & Bassendowski, 2017). The Dean chairs the Faculty Council, which is the body that, among other powers, approves and evaluates the academic programming of the schools that make up the faculty, approves and evaluates the distribution of teaching work and the hours assigned to carry out these activities, additionally it is the body that proposes to the central university authorities the names of possible career directors (Statutes of the Central University of Ecuador, 2019).

The program lasts for nine academic periods – four and a half years – in which the student must complete 8,720 hours of training. (Table 2) The 46 subjects or subjects that make up the study plan respond to five training fields established in a general way for all undergraduate training programs in Ecuador. These fields are theory, professional praxis, the epistemology of research, integration of contexts, knowledge, and cultures, and communication and language (Project for the curricular redesign of the Nursing Career of the Central University of Ecuador, 2016).

Practical training occupies 53% (4,656) of the total hours of the program, these hours in turn are divided into 1,536 for the application and experimentation of learning in simulation laboratories or clinical practice hospital services, and 3,120 for practical training pre-professionals that are developed during a calendar year in public health institutions through inter-institutional agreements between the State and the University (Montenery et al., 2013; Gerolamo & Roemer, 2011). The theoretical component occupies 25% (2176) of the total hours of the program. The program also details the hours of autonomous preparation of the student (1728), and 160 hours of participation in community outreach programs (Malla curricular de Enfermería - UCE, 2017; Project for the curricular redesign of the Nursing Career of the Central University of Ecuador, 2016).

Table 2
Distribution of training hours according to the training field of the 2017 program

	Theoretical	Application and experimentation of learning	Self-employment	Pre-professional internships	Link with the community	Total
Hours	2176	1536	1728	3120	160	8720
%	(25.0)	(17.6)	(19.8)	(35.8)	(1.8)	(100)

The subjects developed in each training period respond to an analysis of the contextual socio-sanitary problems of the region and the follow-up study of the graduate carried out by the career. Each academic period has a duration of 800 hours except the last two which correspond to the mandatory hours of pre-professional practices (Bonilla Merizalde, 2016; Nursing Curriculum - UCE, 2017).

The first seven academic periods have a duration of 800 hours distributed in 16 weeks of learning, in which the content of each subject is developed by academic units established at the discretion of each teacher. The last two periods have a duration of 1560 hours each because students enter the so-called rotating internship program, which consists of carrying out professional practices in state health institutions, in exchange for a scholarship stipend for basic expenses and health insurance of the student (Nursing Curricular Mesh - UCE, 2017; Resolution approving the curricular redesign project of the nursing career of the Central University of Ecuador, 2016; Technical standard for rotating boarding schools in health facilities, 2019). The nuclei of knowledge on which the conceptual systems to be developed in each subject of study are built are:

- Basic human theoretical nucleus "seeks the development of communicative skills that provide the student with the bases of a professional training with the capacity for dialogue and work with other disciplines in the solution of health problems that require an interdisciplinary approach".
- The core of theory and professional praxis: "develops the understanding of the process of social determination, the analysis of the health situation of the Ecuadorian population and the intervention of nursing as a profession in the health area in its role as a caregiver of life and health".
- The core of management in care and health services develops "the theories and principles related to the disciplines of administration, economics, politics, and legislation" as "necessary for the development of the practice of nursing care and leadership in the management of nursing services"
- The core of research in nursing: "contributes to comprehensive training with the emphasis on research".
- The nucleus of communication and languages: "seeks the development of communicative skills that provide the student with the bases of a professional training with the capacity for dialogue and work with other disciplines in the solution of health problems within an interdisciplinary field".

The teaching of care has been divided by life cycles, by conditioning pathologies such as trauma or critical illness, terminal illnesses, and different abilities. Additionally, in the document of the curricular redesign of this training program the following is mentioned about the graduation profile:

"The nursing professional of the Central University of Ecuador is trained to provide comprehensive care to people throughout their life cycle, to the family and the community who are in a situation of health and/or disease with human quality, respect for dignity, interculturality, and the environment, through the application of scientific knowledge, technical and ethical with critical thinking and leadership capacity" (Project of a curricular redesign of the Nursing Career of the Central University of Ecuador, 2016).

In the curriculum, it is evident that only in one or two subjects – of the first 2 academic periods – content is developed that aims as a learning result the development of critical thinking and reflective attitudes in students.

Table 3
Applied curriculum for professional nursing training in 2017

Period	Subject or course	Hours
I	Morphofunción	320
	Biochemistry	80
	Theoretical bases of Nursing and Public Health	200
	Scientific method	40
	Epidemiology	40
	Personal development	40
	Health education and communication	80
II	Microbiology and parasitology	120
	Food and nutrition	80
	Semiology	120
	Ethics	40
	Basic Nursing	320
	Epistemology of care	40
	Sociology	40
III	Informatics applied to nurse	40
	Professional development	40
	Psychology	120
	Basic pharmacology	80
	Clinical and community nursing for the comprehensive care of the adult and the elderly	240
	Mental Health and Psychiatry Nursing	120
	Nursing in geronto-geriatrics	40
IV	Biostatistics	40
	Anthropology of health	80
	Clinical pharmacology I	80
	Administration	80
	Environmental Health	40
	Bioethics	80
	Surgical nursing for the comprehensive care of the adult and the elderly	440
V	Community Service Internships I	40
	Research methodology	40
	Administration of nursing services	80
	Clinical pharmacology II	40
	Nursing for the integral care of women	520
	Community Service Internships II	40
	Health and integrative therapies	80
VI	Entrepreneurship	40
	Nursing for the comprehensive care of children and adolescents	520
	Practice in Community Services III	80
	Project design	80
	Qualitative research	80
	Evidence-based nursing	40
	VII	Legislation in health and nursing
Palliative medicine		80
Nursing for the comprehensive care of the patient of greater complexity in emergencies		200
		120
Nursing for the care of people with disabilities		200
Nursing for the comprehensive care of the most complex patient in intensive care		160
Palliative Care Nursing		
VIII	Integrated pre-professional internship – Rotating Internship	1360
	Degree work	200
IX	Práctica preprofesional integrada – Internado Rotativo	1360
	Degree work	200
Total number of program hours		8720

The theoretical classes are received in the classrooms of the nursing career located in the building next to the Eugenio Espejo Hospital that until 1970 housed the boarding school system for students the National School of Nurses. The practical classes are carried out in the simulation and virtual reality clinic of the Faculty of Medical Sciences that has modern and sufficient equipment for guided learning and in the scenarios of clinical practice – public or private health institutions – of the first, second, and third level of care ([Project of a curricular redesign of the Nursing Career of the Central University of Ecuador, 2016](#)).

The regulations for admission to the nursing career of the UCE include two minimum academic requirements: to have a bachelor's degree or its equivalent and to have complied with the requirements and norms of the national system of leveling and admission of the country, an organization that regulates the student entry to the higher education system ([Project of a curricular redesign of the Nursing Career of the Central University of Ecuador, 2016](#)). To access this career – considered of public interest – applicants must take an exam that measures the capacities of attention, perception, memory, understanding, and problem solving developed throughout their lives ([Senescyt, 2021](#)).

The approval of the subjects is carried out through the evaluation of learning results in the modality that the teacher deems appropriate, the grade to be obtained must be equal to or greater than 70% in each academic semester, additionally must comply with a minimum of 60% of attendance at the total hours destined for the development of the subject (Statutes of the Central University of Ecuador, 2019).

The total approval of the program is made up of two grades, the first corresponding to the average of grades obtained in the 46 subjects that make up the program, and the second corresponds to the grade obtained in the degree process. For the formation of a single final grade of graduation, 60% of the average grades of the first component and 40% of the grade of degree work (Statutes of the Central University of Ecuador, 2019) are taken.

As part of the degree process, the student has two options or modalities, either he chooses to take a theoretical and practical exam where all the content received during the program is evaluated, or he executes a research project type monograph on a problem or situation of clinical practice and/or other aspects related to the object of study of the profession, care ([Project of a curricular redesign of the Nursing Career of the Central University of Ecuador, 2016](#)).

Concerning the academic requirements of graduation is included, the academic record of approval of 100% of the total hours of curriculum, certificate of sufficiency in a foreign language, certificate in office automation and physical education, and the report of completion and approval of the modality of degree chosen by the student ([Project of a curricular redesign of the Nursing Career of the Central University of Ecuador, 2016](#)). The student who has passed the 9 periods of studies and the chosen degree modality, as well as other graduation requirements, is entitled to the title of Bachelor of Nursing.

What remains

The first aspect that is evident is that the school of nursing has not been able to link directly with the UCE as an autonomous dependency of this but maintains the status of subordinate to a Faculty of Medical Sciences and therefore to the medical profession. For several authors, this state of subordination – historically sustained – underpins the socio-cultural construction that nursing in a profession lacking autonomy, little reflective, dependent on medical action, and feeds the vicious circle of power relations that have been built around the health professions ([Dussault, 2020](#); [Federico et al., 2021](#); [Marrero González, 2020](#)).

Additionally, the curriculum presented for the curricular redesign does not account for the teaching of sufficient content for the development of critical thinking and reflective attitude in students, which constitute the basis for autonomous professional practice. One of the main criteria for nursing practice to reach the level of the profession is the degree of autonomy with which its members perform their functions in the labor field, with independence, self-determination, and self-regulation ([Gómez Bustamante, 2012](#)).

Another aspect that remains is the application of an end-of-degree exam as a method of the comprehensive evaluation of the knowledge acquired throughout the program, a practice that over time has been maintained as a requirement to receive the title of nurse or nurse practitioner. According to several authors, this evaluation method – traditionally used in higher education systems – is a tool that aims to measure the quality of the teaching received during the training program, but is not able to measure the quality of what the

student has learned. Thus, the final undergraduate exam evaluates whether the student learned a certain subject but does not evaluate how he will use and apply this knowledge learned in his professional practice.

Training programs should offer assessment methodologies that provide their students with sufficient opportunity and preparation to be able to autonomously meet their future learning needs and to be able to make a critical judgment about the work of others and their own.

The challenge then for this nursing training program is to carry out an in-depth analysis of the application of this evaluation methodology and rethink it with criticality and creativity, taking as a basis for its transformation the new trends and technologies in evaluative practice. Achieving this goal would change with the paradigm of using the result of the evaluation as justification to make concrete decisions about apprentices: *pass or fail, graduate or do not graduate*.

What changed

The organization of the subjects that make up the curriculum shows that this training program tries to make more flexible the healing model traditionally used for the training of doctors and nurses since the twentieth century, pointing towards teaching focused on care as the main object of study of the profession and with a socio-humanistic approach.

There is talk of an attempt since, although the contents related to the object of study of the profession – human care – mention its study in an integral way and by life cycles, there are still chairs that organize the learning of nursing by medical specialties and in this sense, the teaching of care is developed from a more curative than preventive approach. Another aspect that supports this statement is that the teaching of nursing care from a preventive approach is only mentioned in the chairs of comprehensive care of children and women, while the teaching of care to young adults and the elderly is done from their condition as a patient, as the chair is called.

Thus, it is evident that the program for the training of nursing professionals of the UCE is trying but still fails to get rid of the biomedical model of the Flexnerian principles that have been replicated in the training programs of doctors and nurses over the years, a model that prioritizes the study of diseases and divides them by medical specialties, subtracting their interest towards prevention and health promotion (Lobo et al., 2018; Pereira Reyes, 2019).

The incorporation of the study of the scientific method in the training of nursing professionals is one of the most important advances that this training program has had, the incorporation of research practices throughout the process is evidenced in the development of contents that range from the basic knowledge of the method to the teaching of evidence-based nursing (EBE).

An integrative review on the pedagogical aspects in nursing training mentions that the teaching of EBE is a strategy that contributes to improving the skills of students in the use of the scientific method in problem-solving, seeking greater critical thinking, but that there is still little knowledge about a timely and effective application of this strategy during professional practice (Deacon, 2013; Motlik et al., 2007).

Research is a fundamental structural element to achieve excellence in the practice of caring, therefore, this curricular innovation that the program has had in recent years will ensure that graduated professionals can carry out relevant research aimed at transforming and innovating the daily practice of human care (Castro & Simian, 2018).

Finally, the study and use of new technologies in both theory and practice place this program on the path to curricular innovation that other nursing programs in the region are already following. The clinical simulation rooms, and the simulation equipment that this training program has ensured the articulated development of simultaneous theoretical-practical training, completely away from the instrumental technical teaching applied in 1917.

Virtual simulation is a learning experience in which students are guided by an instructor or facilitator in performing simulated clinical procedures to acquire knowledge, and develop skills and attitudes (Leal Costa et al., 2019). Two great advantages of having simulation scenarios are their immediate availability in cases where access to real scenarios is difficult or not possible, and the possibility of acquiring previous skills and competencies for the development of a safe and efficient real practice (Mendoza-Maldonado & Barría-Pailaquilén, 2018).

4 Conclusion

Even though 100 years have passed since the implementation of the first program applied for the training of nursing professionals, and the contents of the curriculum have been expanded and restructured, there are elements of form and substance that remain immovable in the curricula. In the same way, some elements disappeared over time and that accounts for the advances that the training program has had over the years.

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