

## The nurse training in research in the undergraduate education: teaching perceptions

*A formação do enfermeiro em pesquisa na graduação: percepções docentes*  
*La formación del enfermero en investigación en la graduación: percepciones docentes*

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### ABSTRACT

**Objective:** To analyze how the approach of the theme “scientific investigation” can contribute to the development of the scientific competence of the Nursing student. **Method:** A descriptive-exploratory, case-study, qualitative study was carried out with professors from a public university in the South of Brazil. Data were collected through a semi-structured individual interview and a group interview, called the conversation circle. **Results:** Data analysis consisted of three categories: “Research as a structuring theme and scientific principle in undergraduate student training in Nursing”; “Research as a structuring theme and scientific principle in undergraduate student training in Nursing”; “Sap research and educational principle in the integrated curriculum”. **Conclusion:** Research training can occur at all undergraduate academic moments, providing the student with the knowledge of scientific research as a formative content and as an investigative attitude, in order to enable the development of scientific competence in professional practice.

**Descriptors:** Research; Nursing Education; Higher Education; Teaching; Nursing Professors.

### RESUMO

**Objetivo:** Analisar como a abordagem do tema “investigação científica” pode contribuir para o desenvolvimento da competência científica do estudante de Enfermagem. **Método:** Estudo descritivo-exploratório, do tipo estudo de caso, com abordagem qualitativa, realizado com docentes de uma universidade pública do Sul do País. Os dados foram coletados por entrevista individual semiestruturada e por entrevista em grupos, denominada roda de conversa. **Resultados:** A análise dos dados constituiu três categorias: “A pesquisa como tema estruturante e princípio científico na formação do estudante”; “A pesquisa como seiva e princípio educativo no currículo integrado”; “A pesquisa como princípio científico e educativo nas atividades extracurriculares”. **Conclusão:** A formação em pesquisa pode ocorrer em todos os momentos acadêmicos da graduação, proporcionando ao estudante apreender a investigação científica como conteúdo formativo e como atitude investigativa, no intuito de possibilitar o desenvolvimento da competência científica no exercício profissional.

**Descritores:** Pesquisa; Educação em Enfermagem; Educação Superior; Ensino; Docentes de Enfermagem.

### RESUMEN

**Objetivo:** Analizar cómo el enfoque del tema “investigación científica” puede contribuir al desarrollo de la competencia científica del estudiante de Enfermería. **Método:** El estudio descriptivo-exploratorio, del tipo estudio de caso, con abordaje cualitativo, realizado con docentes de una universidad pública del sur del país. Los datos fueron recolectados por entrevista individual semiestruturada y por entrevista en grupos, denominada rueda de conversación. **Resultados:** El análisis de los datos constituyó tres categorías: “La investigación como tema estructurante y principio científico en la formación del estudiante”; “La investigación como savia y principio educativo en el currículo integrado”; “La investigación como principio científico y educativo en las actividades extracurriculares”. **Conclusión:** La formación en investigación puede ocurrir en todos los momentos

académicos de la graduación, proporcionando al estudiante aprehender la investigación científica como contenido formativo y como actitud investigativa, con el fin de posibilitar el desarrollo de la competencia científica en el ejercicio profesional.

**Descritores:** Investigación; Educación en Enfermería; Educación Universitaria; Educación; Docentes de Enfermería.

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## INTRODUCTION

In Brazil and in the world, there is a growing concern with the quality of higher education, which emerges because of the need to adapt socially to its prevailing costs and the demands of transforming an increasingly complex scenario in which universities must promote results in the face of community needs. This complex concern about the search for pertinent means of organizing academic teaching, with a change of standards<sup>(1)</sup>, is remarkable.

In order to adjust both policy and educational planning, the Regulations of Law 9,394, dated December 20, 1996, called the Law on Brazilian Education Guidelines and Bases (LDB), were instituted. In the case of Nursing, the principles of the National Curriculum Guidelines for undergraduate courses (*Diretrizes Curriculares Nacionais- DCN*), of November 7, 2001, are also observed. The Nursing Undergraduate Nursing DCN establish that future nurses should begin, the process of being a researcher, in order to construct critical and reflexive thinking, culminating in the Course Conclusion Paper (CCP), under the guidance of a professor<sup>(2)</sup>.

In Nursing, scientific research can be characterized as a process of knowledge production and reproduction that aims to improve the population's well-being and scientific and technological evolution<sup>(3)</sup>. However, there is still a gap between what is investigated and what is used in daily work. Without functionality, the content is restricted, consequently there is no progress, which leads to the stabilization of knowledge<sup>(4)</sup>.

To break with this situation, it is necessary to apprehend and use scientific research, as an intellectual activity, by encouraging the student and the future nurse to develop, through investigative reasoning, the habit of searching for answers to care scientifically and resolutely, in face of the needs of individuals, families and communities, acting as a multiplier of scientific knowledge<sup>(5-6)</sup>.

In order for this to happen, it is necessary to understand the teaching of undergraduate research in order to train qualified nurses and strengthen Nursing as a science under construction, consolidating the profession<sup>(7)</sup>. Therefore, the undergraduate course period is an important moment to take the research activity to new levels, promoting the development of skills and abilities that enable the future nurse to reflect critically on the practice of their profession<sup>(8)</sup>.

In order to effectively understand the process of teaching undergraduate research, it was decided to study a course that develops the "integrated curriculum" since the year 2000. In this proposal, the disciplinary contents are integrated and the curricular matrix is articulated, given in 18 (eighteen) interdisciplinary modules, distributed in four series. The teaching and learning process occurs through the questioning and use of active methodologies. The course also adopts 12 thematic units of teaching, called cross-curricular themes or "saps", as dynamics of the pedagogical actions, present in all the curricular

modules of the course. The aims are to improve knowledge by articulating it with the academic achievements<sup>(8-10)</sup>.

The course's educational project, when defining the competencies and abilities in relation to the profile of the conclusion, specifies the scientific competence as qualifying and that transforms the reality that involves the health area, having as objectives: to develop researches and/or other forms of production of scientific knowledge<sup>(8-10)</sup>.

In view of the above, it is of relevance that the teaching of scientific research occurs from undergraduate course, aiming at training of competent nurses in their work process. The study is justified when addressing how teaching-learning strategies articulated with research in an integrated curriculum can encourage their dissemination and/or their use in other higher education institutions that do not yet do so.

## OBJECTIVE

To analyze, from the perspective of university professors, how the approach of the theme "scientific investigation" can contribute to the development of the scientific competence of the student of Nursing.

## METHOD

### Ethical aspects

This research is part of a study entitled "Integrated Curriculum of a Nursing Course: transversal themes and professional training", which aims to analyze the implementation of transversal themes in the pedagogical practice of the integrated curriculum of the *Universidade Estadual de Londrina* (UEL). The research complied with all ethical precepts in accordance with Resolution 466/12 of the National Health Council (*Conselho Nacional de Saúde- CNS*), and was submitted and approved by the Research Ethics Committee Involving Humans (CEP-UEL).

### Type of study

This is a descriptive-exploratory research, of the case study type, with a qualitative approach. The case study was used because the pedagogical proposal studied has the differential of cross-cutting themes, which are themes that should permeate the whole academic period, among which are the research<sup>(8)</sup>.

### Methodological procedures

#### Study setting

The study was conducted in a nursing undergraduate course at a public university in the south of the country that uses the full-time, annual serial regimen of 4,152 hours. Currently the course offers sixty places for student admission, fifty for college entrance exams and ten for the Unified Selection System

(*Sistema de Seleção Unificada- SISU*), provided through the National High School Assessment (*Exame Nacional do Ensino Médio- ENEM*). The Nursing course was started on February 18, 1972, and in 2000 implemented the integrated curriculum, through active methodologies and questioning.

### Data source

The data source was the 19 professors of the Departments of Nursing and Public Health of the research institution. The selection of professors was intentional, whose inclusion criteria included being effective teaching of the Nursing course for more than five years; work in the vocational area; be a supervisor of the course completion and scientific initiation; being a coordinator of extracurricular activities (extension, teaching or research project); be a coordinator; and be a research group participant.

### Collection and organization of data

The data collection took place through individual and collective interview with the professors, called "conversation round". The conversation round technique was used, in order to discuss a specific theme in groups and to resemble the focal group in the collection stages, differentiating itself by a smaller number of participants<sup>(11)</sup>.

Data collection took place from December 2015 to February 2016. Three semi-structured interviews were conducted with the coordinators of the modules, in which the cross-cutting theme of scientific research is worked as teaching content of the module. There were also three talk wheels with participation of five to six professors in each group, totaling 16 participants. For the conversation rounds, the professors were grouped in order to represent the different areas of vocational training, avoiding that there were two professors from the same area in each moment.

The conversations rounds took place outside the university, with the presence of the participants of the research and conduction of the discussion by the researcher, in addition to the support of two observers who took notes to help the transcriptions of the data. Both the individual interviews and the conversation rounds were recorded and filmed and subsequently transcribed. The interview time ranged from 40 to 60 minutes; already with the wheels, of 60 to 90 minutes, totaling 7 hours of duration in all. The triggering question of the discussions was: How and when the development of research teaching in Nursing course occurs?

### Work steps

In order to carry out the interviews and conversation rounds, the judges proceeded to the analysis of the questions that incited the discussion of the topic. After the approval of the questions by the judges, the professors were invited to participate in the interview and the conversation round, through personal contact, e-mail and telephone. Subsequent to the invitation of the professors, the semi-structured interviews with the coordinating professors of the interdisciplinary modules were carried out. Then, the rounds were held with the other selected professors.

### Data analysis

The recordings from the conversation round and the interviews were transcribed in full and, afterwards, submitted to content analysis. In the analysis, we tried to list themes that

referenced the teaching of the research, constructing a sequence of contents during the examination of the testimonies. Then the themes were grouped into categories and discussed according to the perspective of Pedro Demo, in the light of the work *Educar pela pesquisa; e Pesquisa como princípio científico e educativo*, which aim to bring research as a method of teaching, occurring at all times of individuals' daily lives. The conceptual contributions of Pedro Demo were chosen as theoretical reference because of the conceptions presented by this author that aims at reconstructive education based on learning through research. The statements of the professors were denominated by the letter D, followed by numeral (D1, D2, D3 ...).

## RESULTS

Nineteen professors, with a work time varying from five to thirty-four years in the Departments of Nursing and Public Health, participated in the study, working in the areas of child health, adult health, Nursing fundamentals, Infectology, Mental Health, Collective Health, Women's Health, Management in Health and Perioperative Nursing. Participants were between the ages of 33 and 60; 16 of them were females and three males. Of the total, 18 direct CCP, 17 guide scientific initiation and 16 coordinate research project.

The analysis of the transcripts of the conversation rounds and the interviews allowed the delineation of the following categories: "Research as a structuring theme and scientific principle in undergraduate student training in Nursing"; "Sap research and educational principle in the integrated curriculum"; "Research as a scientific and educational principle in extracurricular activities".

### Research as a structuring theme and scientific principle in undergraduate student training in Nursing

In this category, participants identified which modules develop research as an investigative method in the integrated curriculum, which are the modules called Interdisciplinary Practices and Interaction Teaching, Service and Community I (PIN I) and Interdisciplinary Practices and Interaction Teaching, Service and Community II (PIN II), present in the first and second series respectively. Thus:

*There are modules that work with the research, as is the case of PIN I and PIN II, which begin to look for these purposes. (D1)*

*In PIN I, when I work, I say to the student "look, we're going to have to do an intervention", in thesis they are doing a qualitative study, even though this is not structured while a research, they are doing, for example, an interview. (D3)*

*In PIN I, systematized scientific research is not the focus. There is focus on other concepts, so let's work. But he later targets the account of experience in a scientific event, so it already catches their attention. You can write a work that has to be structured in a certain way, we have to write because then it goes in the curriculum, so they see it as a production, a research. (D4)*

*I realize that the research, right at the beginning of undergraduate course, has a lot to do with PINs, especially PIN II, which has data collection and data presentation. (D5)*

The PIN I and PIN II modules develop the teaching of investigative activities, in an interdisciplinary way, among students of the Nursing, Pharmacy and Medicine courses. Undergraduates are sent to the field, with the objective of developing research teaching, through the methodological process of the problem, with space for discussion of aspects related to research and epidemiology. The module covers three moments: "the first one demonstrates the health indicators, the second and third are related to the research, from their approach (qualitative and quantitative), types of epidemiological design research and stages of the research project." At the end of the module, the student must finish the research and analyze the data collected and present them in a scientific event<sup>(12)</sup>.

Professors also reported that the Course Conclusion Paper I (CCP I) module in the third grade and the Course Conclusion Paper II (CCPII) in the fourth grade promotes the teaching of research as the central theme of the module the investigative process.

*In a formal way it [the subject of scientific investigation] comes with CCP 1 and CCP 2. (D2)*

*In the curricular structure I mean, later, in the fourth or third year, during the CCP. (D4)*

*[...] then the CCP in the third and fourth year. (D1)*

In module CCP I, each student must develop a pre-research project individually and under the guidance of a faculty member, and submit it to the Research Ethics Committee. The CCP II module is the moment of elaboration of the research, with the delivery of a final course paper, evaluated by a specific bank with subsequent presentation of the results in a scientific event<sup>(12)</sup>.

In this category, it was possible to identify by professors' testimonies that the educational process of teaching the research occurs in four sequential moments, one per series, thus allowing the student a continuous and qualified training throughout the course.

### **Sap research and educational principle in the integrated curriculum**

This category addresses the different modules that work with research as a cross-cutting theme, as well as the different ways of using research as teaching in undergraduate studies. The expressions of the professors interviewed allowed apprehending the teaching of the research as a transversal theme, or sap, in the course of the integrated curriculum. The research as 'sap' was identified by the professors as an educational principle, which is, as a teaching methodology, permeating all the modules of the course. Thus, they reported:

*I think this literature approach is in all modules. (D6)*

*So, so our modules, somehow, are doing a lot to help them get started on this research path. (D7)*

*The academic is acquiring these skills in several modules. (D2)*

Professors reported their activities in the modules, demonstrating research as an educational principle, that is, as a means of learning:

*If you think that research can be a case study, an experience report, then it is exposed to it in more than one moment. Now, in a material center, the students used a quality assessment instrument to evaluate a reality, compared with the previous reality, made a report, did a critical analysis, reached new indexes, reached new conclusions and presented this to the service. In fact, it was a simplified search process. (D8)*

*I can also remember, in our child health module, in epidemiological profile in relation to the child, then the student, he has to research the reality of the most common Brazilian, local, and local diseases and compare with the BHU where it is inserted, then it is still a researcher's reasoning. He seeks, from one end to the other, to analyze his: is it the same? Is it different? What are the programs? (D9)*

These activities give undergraduates successive approaches to research, as a means of learning in their training, as reinforced in this saying:

*What I see is that when the student approaches more than once and this really has meaning, it arouses interest, so all the modules collaborate and contribute to the learning of the research. (D3)*

*The active methodology alone provides this, because when you go to get the knowledge, inevitably you are already doing research. You go to the library, go to the internet and start asking yourself, "Can Bodão's blog be my research element?" It cannot, so it has to be an INCRA website, from the Ministry of Health ... From from there, you already start. I think this literature approach is in all modules. (D6)*

### **Research as a scientific and educational principle in extra-curricular activities**

In this category, the participants identified the extracurricular activities that occur outside the curricular curriculum of the course and include participation in teaching, research and extension projects as fundamental in this teaching process, adding the development of initial research training in undergraduate courses. In this regard, professors reported that the development of research teaching also occurs in the insertion of undergraduates in scientific initiation activities.

*The learning of the research comes even from the projects of scientific initiation. (D9)*

*So, I think it materializes with the scientific initiation, to call the person for scientific initiation, which is where we get to enjoy more with some students. (D4)*

Scientific initiation was still identified as the link between academic and research, as demonstrated in the following speech:

*So, scientific initiation, it explicitly builds this link between the student and the research. I think that scientific initiation, within the first few years, she can support the undergraduate education. (D11)*

Professors reported that, in addition to scientific initiation, other extracurricular activities, such as extension and teaching projects, also contribute to undergraduate research training.

*You can have an extension project and also develop research training, having a teaching project as well, as we have. For me, it is possible that both things develop. (D1)*

*I think teaching and extension projects also contribute to research; I have a project that we complement with teaching, where it goes to the laboratory and to practice, and the learning is significant. (D12)*

For the participants, the extracurricular activities strengthen the teaching of the research, due to the activities that the academicians execute that can be from the reports required by the project until the production of the data, as demonstrated in the following statements:

*The extension student must have a research paper. He has to develop a project within the extension, the scholarship holder. He is required to collect and submit the extension data. (D13)*

*Extension greatly encourages, what is done in extension becomes data, charge a production, even a presentation in that production, and I think this is very important for the learning of the research. (D14)*

Another extracurricular activity identified by professors as an aggregator of research teaching was the participation of undergraduates in research groups, due to the different levels of training their interaction, as shown below:

*In my research group there are undergraduates, masters, and when we insert the academic, and he gains knowledge through it ... the research forms, produces, and integrates different areas that add up, with result end that generates knowledge. (D12)*

*[...] And then, through a research group, we strengthen both the lines of research and the insertion of students in the research. (D4)*

*[...] when the undergraduate student participates and attends a research group, the student creates a whirlwind of new ideas in his or her head. (D15)*

## DISCUSSION

The first category brings to light the modules that develop research as an investigative method in the integrated curriculum. This result resonates with the important fact that the process of teaching undergraduate research is regulated by the Nursing DCN, giving the academic leave the position of taxable person for the production and reconstruction of their own knowledge, developing a critical thinking of the reality. Providing academic to carry out the research empower them to produce mechanisms and procedures that favor their autonomy, creativity and innovation<sup>(13)</sup>.

In this process, the curriculum proposal and the professor have an essential role, it provides the student with discovery and creation, consistent with theory, method, practice and empiricism<sup>(13)</sup>. In addition, the professor must be the "socializer of knowledge", stimulating in the academic the understanding of the research<sup>(13)</sup>. It is observed that these premises are sought and practiced by the professors of the reality under study.

It is important not to lose sight of the fact that, in order to provide an understanding of the research for the student, professors must construct their own pedagogical project (class project), create their own scientific texts, elaborate their didactic material and innovate their didactic practice. In addition to possessing personal baggage, the professor should also be able to compare the various ways of planning a theme, formulating a characteristic environment of creative dialogue<sup>(13)</sup>.

In the curricular proposal studied, the research acquires an intense meaning during the teaching-learning process, and its attainment is the driving force behind one of the transversal themes outlined in the format of this pedagogical proposal, called "saps", with the meaning of "what that crosses the curricular disciplines", enriching the academic activities<sup>(8)</sup>. In this perspective, the pedagogical curriculum must overcome the content to be executed, but should promote experiences and experiences for the students throughout the academic period, based on the institutional objectives of the training<sup>(14)</sup>.

For this to occur, the research differential lies in the questioning, which involves theory and practice, formal and political quality, innovation and ethics, providing critical and creative knowledge<sup>(15)</sup>. The research needs to have the scientific and educational commitment, if this does not occur, it becomes a typically formal expression, leaving only the methodological domain<sup>(15)</sup>.

The expressions cited by the participants in the second category demonstrate that, although the module does not have the purpose of teaching to research explicitly, its activities are linked to research as an educational principle, that is, the activities carried out in the classroom are research actions that promote the teaching of content through research. These activities value the use of active and problematizing methodologies within the integrated curriculum and enable undergraduates to be active in building their knowledge.

Learning through research consists in understanding that instead of being a "curricular didactic package", the classroom becomes a space for creativity, constructing solutions to new problems<sup>(15)</sup>. When education in the school is centered in a class that only transfers content, it makes the academic object of teaching and instruction, taking away the condition of the constructing subject of their knowledge<sup>(15)</sup>.

Educational spaces such as classrooms, health practice settings, laboratories and communities should be the places where the process of student emancipation takes place, which consists in the historical development of conquest as a rational and productive protagonist of its knowledge<sup>(13)</sup>. To emancipate oneself is also to possess the critical conscience and discover oneself as a social being, with its historical condition, understanding that part is granted and part is formed<sup>(13-15)</sup>. In order for this to happen, the academic must be induced to read and elaborate his own, by manipulating and formulating scientific works, becoming gradually able to create<sup>(13)</sup>. This premise was observed in the professors' reports of the reality under study, exemplified by the curricular activities in the modules.

The university environment should be a place to educate by research, allowing the student an active, dynamic behavior, with engaging interaction, understandable communication, favoring the motivation and appreciation of the academic experience<sup>(15)</sup>.

In this way, it should encourage the student to search for materials, such as books, sources, data and scientific information, stimulating initiative and overcoming the ready resource<sup>(15)</sup>.

With the search for the material, the academic should make interpretations of his own, understanding the text and, later, initiating the process of own elaboration, replacing the knowledge originated from the common sense to give space to the reconstructive questioning<sup>(15)</sup>.

A study carried out with undergraduate professors with the objective of identifying the relationship between teaching and research showed that research, when linked to the pedagogical process, becomes an innovative strategy for educational quality, since it unifies the practice with theory<sup>(16)</sup>.

In order for the proposal to educate through research to be effective and performed in Brazilian Nursing schools, the professor needs to overcome his or her traditional school training, which no longer corresponds to the expectation of transformation and innovation of knowledge<sup>(15)</sup>. For this, the professor must be constantly engaged in training courses, participating in socializing spaces of knowledge that consolidate the competence of the professor, such as congresses, events, seminars, among others<sup>(15)</sup>.

In the third category, the participants expressed the importance of the extracurricular activities, as well as the scientific initiation that the undergraduate student performs the stages of the scientific method, starting from the delineation of the topic of interest, with the consent of the professor; Subsequently, it prepares a pre-project and submits it to the Research Ethics Committee Involving Humans - except in cases where the professor already has some project in progress<sup>(17)</sup>. After the approval of the Committee, the researcher initiates the research, first by the bibliographical search and theoretical basis, and soon thereafter launches itself in field research or data collection<sup>(17)</sup>. In the sequence, it analyzes the collected data, elaborates a work in relation to the results and it divulges them in events of scientific character<sup>(17)</sup>.

Scientific initiation can be understood as a practical learning of the exercise of research, under the guidance of a specialized professional, who must be a researcher, usually a professor of the course, in order to give undergraduates an opportunity to learn the scientific principles and be encouraged by their interest in becoming a future researcher<sup>(18)</sup>. Research learning also occurs through the student's insertion into research groups, providing interaction and learning with other students, graduations at master's and doctoral levels.

In addition, scientific initiation appears, in the university context, as a mechanism for introducing undergraduates into the scientific environment, favoring the production of qualified human resources<sup>(15-18)</sup>. In Nursing, it has the particular characteristic of, still in the undergraduate, to encourage the undergraduate student to approach the social reality, providing the production of research, contributing to its professional construction and to the development of science and society<sup>(15-18)</sup>.

It is important that scientific initiation research carried out at universities extend their results to society, transforming the institution into an environment accessible to the community, favoring the attendance to the social demands detected, through the return of the knowledge produced there<sup>(15-18)</sup>.

Scientific initiation, like university extension, appears to present to society the usefulness of teaching and research. The

process of teaching and learning of research should not be restricted to extension, but should permeate the entire university course<sup>(15)</sup>. Thus, with the other extension activities, scientific initiation and research must be understood by the university, by professors and undergraduates as a connection with the pedagogical proposal, and not as something isolated, that is, they must be present throughout the undergraduate student process, at all levels and at all stages<sup>(6-15)</sup>.

Scientific initiation, within the pedagogical proposal of the course, should occur as a complement to the process of development of research teaching that is expected to occur throughout the undergraduate student journey. Restricting the teaching of research to extracurricular activities delimits the scientific development of undergraduates. In addition, university extension is the educational, cultural and scientific method that associates the educational process with research in an inseparable way and encourages the transforming link between university and society<sup>(19)</sup>.

University extension projects should be formulated in such a way as to enable individuals who are thirsty for questioning to qualify themselves to act and intervene in manifest situations due to cultural, social and environmental diversities, and not only with technical methods<sup>(20)</sup>.

Furthermore, the extension projects contribute to the students putting into practice the theoretical contents discussed in the classroom, in order to develop their skills, knowledge and investigative attitudes<sup>(13-15,21)</sup>.

Extension projects promote the community's relationship with the university, favoring learning and the exchange of knowledge, providing the student with an understanding of society, as well as meeting health needs<sup>(22)</sup>.

In addition to these extracurricular activities, the research group was also listed as a facilitator of this process, where it is called as a meeting point and research exercise, whose work is established around research lines<sup>(23)</sup>.

From this perspective, the research group as well as the research, it becomes important as work together, in order to overcome the "fragmented vision, and distorted knowledge of reality." When the undergraduate student performs teamwork, he acquires the common perspective of reality, that is, he understands how other individuals in society interpret a certain theme, and this interferes with his knowledge, increasing his learning<sup>(13)</sup>.

A study carried out with research-oriented professors identified the research group as a space for growth relations resulting from the interaction and exchange of knowledge between the student and the supervisor, and with the different levels of training, for example, graduate students<sup>(3)</sup>. This process of interaction encourages the undergraduate student to seek learning, as well as to delineate their research line from the undergraduate period<sup>(18,23)</sup>.

In view of this, the extracurricular activity meets the nurses' training process, being an auxiliary mechanism in the pedagogical proposal of the course, in the Teaching Institution and in the training of scientific competence.

Therefore, pedagogical and organizational factors, through the interface with the research, contribute to the development of the scientific competence of the student of Nursing. The innovation is in the organization of the curricular matrix in interdisciplinary modules, planned in thematic units of education to obtain

substantial performances for the training of the desired nursing professional. It is in the teaching and learning process through the questioning, and the use of active methodologies. It is in the cross-cutting themes as a driving force for pedagogical actions, present in all the curricular modules of the course. There is the possibility of extracurricular spaces that privilege research. It is in the posture of the professor open to the new, to the other and the necessary training for those who care and research to better care.

### Study limitations

It is considered as limitation of this study the perception of the object of the study solely by the professors' eyes. It is necessary to develop studies that seek training in undergraduate research in the student perspective, in order to highlight the teaching and learning methods and their importance in the insertion of the future nurse in the research environment by the undergraduate student look.

### Contributions to the sector of Nursing

Understand and announce the means of teaching and learning undergraduate research in Nursing that can favor institutions and higher education, and Nursing courses, by highlighting new mechanisms of the teaching-learning process, as well as analyzing student training for this thematic, promoting critical and reflexive nurses in their work process and that relate their professional practice with the scientific, thus provoking evidence-based assistance.

### FINAL CONSIDERATIONS

In the experience analyzed, professors perceive that the theme "scientific research" has been achieved in the training of students through the integrated curriculum, privileging scientific research as a structuring theme, transversal theme and also in extracurricular activities. They consider that the role of the professor becomes the differential in the reach of scientific competence,

having as principle the professor-student relationship, built by the common interest in the research theme.

The extracurricular activities were evidenced by the professors as fundamental in the formative process of research. However, these cannot be the only ones responsible for the construction of the investigative process, being desirable the union between the curricular and extracurricular actions to provide the training in research. Thus, undergraduates will understand that the educational process occurs through the relationship between these activities, throughout their formative course.

The method used by the Education Institution researched can be a reference for the other Nursing courses in Brazil, for the ability to organize and structure the contents comprehensively, relating them to reality and providing the undergraduate student with several approaches to the research theme, in several moments of the itinerary in the undergraduate course.

It is important to emphasize that research as an educational process, that is, the use of research as a form of teaching various contents, also becomes a differential of this pedagogical proposal. In this way, to educate by the research, it allows to the nurse in developing autonomy of construction of the knowledge, allowing that is understood by the student as much the investigation process as the contents necessary for its professional action.

The results allow us to infer, from the professors' perception, that it is possible for research training to take place throughout the university cycle, in a dynamic and procedural way, contributing to the undergraduate student association of theory and practice, with the type of training that privileges the teaching of research in an isolated, fragmented moment, outside the social and health context.

Therefore, the movement of more Nursing undergraduate courses around the development of scientific competence, as a reality in the country, can leverage student training, contributing to the student, as a future nurse, to relate the research to their daily professional practice for qualified health care, as well as providing the scientific base for those who long for the undergraduate student-scientific path.

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