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**RESEARCH | PESQUISA** 



# Theoretical-practical articulation in a curriculum of a Nursing course<sup>a</sup>

Articulação teórico-prática em um currículo de um curso de Enfermagem Articulación teórico-práctica en un currículo de un curso de Enfermería

#### ABSTRACT

**Objective:** To understand how the theoretical-practical articulation is effective in a curriculum of an undergraduate Nursing course. **Method:** This is a unique case study, with a qualitative approach, developed through document analysis and individual interviews with semi-structured script with 10 teachers and 14 students interviewed from February to May 2015. Data analysis was performed according to the assumptions of Critical Discourse Analysis. **Results:** The data revealed the existence of tensions and ambivalences among two forms of relationship between theory and practice. The first, related to theory-practice as an indissoluble unit and the second, to the view of theory and practice as dichotomous instances and the predominance of theory preceding practice. **Conclusions and implications for practice:** There are weaknesses in the implementation of theoretical and practical articulation in the curriculum of the Nursing course investigated, showing the supremacy of the cartesian paradigm in higher education in Nursing. Thus, it is urgent to institute strategies that enable the theoretical-practical inseparability in the curriculum.

Keywords: Nursing; Nursing Course; Curriculum; Teaching.

#### RESUMO

Objetivo: Compreender como a articulação teórico-prática se efetiva num currículo de um curso de graduação em Enfermagem. Método: Trata-se de um estudo de caso único, com abordagem qualitativa, desenvolvido por meio de análise documental e por entrevistas individuais com roteiro semiestruturado com dez docentes e 14 discentes entrevistados no período de fevereiro a maio de 2015. A análise dos dados foi realizada segundo os pressupostos da Análise Crítica do Discurso. **Resultados:** Os dados revelaram a existência de tensões e ambivalências entre duas formas de relação entre teoria e prática. A primeira, relacionada à teoria-prática como unidade indissolúvel e a segunda à visão da teoria e prática como instâncias dicotômicas e predomínio da teoria precedendo a prática. **Conclusões e implicações para a prática:** Há fragilidades na efetivação da articulação teórico-prática no currículo do curso de Enfermagem investigado, evidenciando a supremacia do paradigma cartesiano no ensino superior de Enfermagem. Dessa forma, torna-se premente instituir estratégias que viabilizem a indissociabilidade teórico-prática no currículo.

Palavras-chave: Enfermagem; Curso de Enfermagem; Currículo; Ensino.

#### RESUMEN

**Objetivo:** Comprender cómo la articulación teórico-práctica es efectiva en un plan de estudios de un curso de pregrado en Enfermería. **Método:** Este es un estudio de caso único, con enfoque cualitativo, desarrollado a través del análisis de documentos y entrevistas individuales con guiones semiestructurados con diez maestros y 14 estudiantes entrevistados de febrero a mayo de 2015. El análisis de datos fue realizado de acuerdo con los supuestos del análisis crítico del discurso. **Resultados:** Los datos revelaron la existencia de tensiones y ambivalencias entre dos formas de relación entre teoría y práctica. El primero, relacionado con la teoría-práctica como una unidad indisoluble y el segundo con la visión de la teoría y la práctica como instancias dicotómicas y el predominio de la teoría que precede a la práctica. **Conclusiones e implicaciones para la práctica:** Existen debilidades en la implementación de la articulación teórica y práctica en el currículo del curso de Enfermería investigado, lo que demuestra la supremacía del paradigma cartesiano en la educación superior en Enfermería. Por lo tanto, es urgente establecer estrategias que permitan la inseparabilidad teórica y práctica en el currículo.

Palabras clave: Enfermería; Educación en Enfermería; Curriculum; Enseñanza.

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# INTRODUCTION

In Brazil, higher education in Nursing has been urged, over the past few years, to supplant the traditional teaching model anchored in the fragmented and one-dimensional vision of reality and knowledge and in the biologic perspective of the health-disease process.<sup>1</sup> In this context, the reformulation of Pedagogical Course Projects (PCP) and curricula has been promoted by the National Curriculum Guidelines (NCG) for Nursing Courses, instituted through Resolution no. 3/2001, of the National Education Council (NEC) and Higher Education Chamber (HEC).<sup>2</sup>

The NCGs for Nursing courses represent, then, a milestone towards changes in the training of nurses.<sup>3</sup> The text of the NCGs for Nursing courses defends that this training should take place according to the needs of the Unified Health System (UHS) and the health problems of contemporary society.<sup>4</sup> Therefore, it is necessary to adopt an innovative education, which considers the principle of integral training and interdisciplinarity and which ensures the articulation of teaching-service and theory-practice,<sup>5,6</sup> in the different contexts of nurses' professional practice; in an action-reflection-action movement; as a day-to-day strategy for teaching and learning in nursing. In this perspective, such practice emerges as problematizing of the knowledge construction process of the future nurse.<sup>7</sup>

Despite the advances in the training of nurses since the establishment of the NCG for Nursing courses, important challenges still need to be faced to achieve the desired training. Among them, in this study, it stands out the concretization of the proposition of the theory-practice articulation as an indissoluble unit.<sup>8,9</sup>

Studies show that such a proposition still does not occur as it should, being often overtaken by simplistic understandings that either value theory, or value practice.<sup>10,11</sup> In terms of the curriculum, this means adopting a curriculum design in which there is an alternation between disciplines or theoretical activities and disciplines or practical activities. Thus, it is assumed that students are able, by themselves, to integrate theory and practice.<sup>12</sup> As a consequence, it is not uncommon to see dissatisfaction on the part of students and alumni, who report divergences between what is taught during classes and what is experienced in daily practice.<sup>10,11,13</sup>

In this sense, the understanding of how the articulation between theory and practice is carried out in a curriculum of a nursing course in Minas Gerais after 17 years of NCG for Nursing courses, emerges as a priority, when considering the current moment experienced by Undergraduate Nursing Courses, with new NCG to be approved by the Ministry of Education. Faced with these considerations, it is worth asking: how does the articulation between theory and practice occur in a curriculum of a nursing course at a university in Minas Gerais?

With the objective of understanding how the theoretical-practical articulation is performed in a curriculum of a nursing course, this research assumes a necessary and relevant character, insofar as it intends to contribute to the reflection on the nurses' training process, regarding theoretical-practical articulation, as a form of support for the reorientation of doing and knowing, in the challenging path of implementing change in nursing education in the contemporary world.

# METHOD

#### **Ethical aspects**

The present investigation met all ethical and legal requirements for research involving human beings in Brazil. The project was registered at "Plataforma Brasil", submitted to the Research Ethics Committee of the Federal University in which the study took place, being approved under the CAAE Protocol 34540614.3.0000.5149 and Opinion no. 938.681.

#### Type of study

The work consists of a case study, of the unique type, with a qualitative approach. The case study is a suitable method for research that seeks to understand complex and contemporary social phenomena, in order to get to know them in depth, considering the real contexts in which they occur.<sup>14</sup>

#### Study scenario

The present study focuses on the curriculum of the Undergraduate Nursing Course at a Public University in Minas Gerais, which, like all other educational institutions, has undergone a process of change since the regulation of the NCG for Nursing courses.

#### Data collection and organization

Data were collected through documentary analysis of the PCP and other related documents, such as the curricular matrices available on the website of the researched institution and through interviews with a semi-structured script composed of questions about how the theory-practice articulation was carried out in the current curriculum of the teaching institution.

The research participants were ten teachers and fourteen students, who met the following inclusion criteria: a) effective teacher since 2009, when the current curriculum was implemented; b) students regularly enrolled in the last period of the course, which is equivalent to the tenth period of the first semester of 2015, when the data collection started. The option of interviewing students in the tenth period was due to the understanding that they could have a broader view of the curriculum, since they are finishing the training course.

In order to obtain a more uniform participation of teachers, the participation of one teacher per area of activity was defined. To this end, each of the institution's three departments: Basic Nursing, Applied Nursing and Maternal-Child Nursing and Public Health provided a report containing the number of professors and the respective area of activity, namely: public health, public health/basic care, epidemiology, nursing fundamentals, women's and newborn's health, children's and adolescent's health, adult and elderly health, mental health, nursing education and nursing administration. Subsequently, the drawing of the ten teachers took place. Contact with professors to participate in the research occurred via electronic mail address, available on the institution's website and provided by the departments. The contact consisted of an invitation to participate in the research, with the presentation of the researchers, as well as the object of study and its objectives. After acceptance, the interviews were scheduled according to the availability of date and time of each teacher, held in their respective rooms, from February to May 2015 and had an average duration of 26 minutes and a total of four hours and twenty-five minutes.

For the participation of the students, the teaching section was asked for a report containing the number of students enrolled in the tenth period of the first semester of 2015 and their respective contacts. The report indicated that twenty-six students were enrolled in that period. The interviews started with a drawing. The selected students were contacted by telephone and by e-mail. In a similar way to the teachers, the students were invited to participate in the research, respecting the individual availability of day and time. The interviews were conducted in the free areas of the institution, from February to April 2015, and had an average duration of 10 minutes, totaling two hours and eighteen minutes. The definition of the number of participating students followed the principle of empirical saturation.<sup>15</sup>

The interviews were recorded, after the participants' consent to the Free and Informed Consent Form, and later transcribed. To maintain ethics and the commitment to guarantee anonymity, teachers were named "Te", using the sequence Te1 to Te10, and students "St", following the sequence from St1 to St14.

#### Data analysis

The data were submitted to the Critical Discourse Analysis (CDA) proposed by Fairclough.<sup>16</sup> This author defends the dialectical relationship between discourse and social structure, that is, if, on the one hand, the discourse is shaped and restricted by the social structure, on the other it is socially constitutive, present in all dimensions of the social structure. For CDA, discourse is a way in which people can act on the world and especially on others, as well as a mode of representation. Thus, it is essential that the analysis of the text encompasses aspects that can be invested ideologically, such as the meanings of words, assumptions and metaphors.

Therefore, the interviews were transcribed with as much detail as possible, considering the participants' statements at the time of the interviews. Then, an exhaustive reading of the transcribed speeches was carried out with comprehensive analysis and identification of semantically similar speeches that could be related to each other and, thus, give rise to empirical categories. The empirical categories were analyzed critically, in order to capture the senses and meanings of the speeches produced by the participants, through an individualized analysis of each excerpt. Finally, we sought a dialogue between the empirical categories and data from the institution's Pedagogical Course Project.

The analysis of data about the effectiveness of the theoretical-practical articulation enabled the construction of a

single empirical category, entitled: Tensions and ambivalences between theoretical-practical unity and theory and practice.

# RESULTS

# Tensions and ambivalences between theoretical-practical unity and theory and practice

The speeches revealed the existence of two forms of relationship between theory and practice. The first concerns theory-practice as a simultaneous and indissoluble unit, and the second relates to the view of theory and practice as dichotomous instances.

It was noticed that some teachers present speeches closer to the first relationship, thus revealing a pedagogical practice that does not disentangle the theory of practice, which allows valuing the experiences lived by students, as can be seen in the excerpts below:

[...] It is natural that when I am in the teaching process, I have an intentionality. It is no accident that I do. So there is an intentionality, I am clear that when I am bringing knowledge, I am articulating it for practice. [...] The question is to look for situations that require this articulation, for example, situations that are real, situations that are experienced. (Te2)

[...] This articulation between theory and practice I try to integrate in the following way: always trying to teach theoretical knowledge as much as possible already in the practice scenario [...] Many of the knowledge that were not possible to be taught inside the classroom, we try to strengthen in the practice scenario, with real situations experienced by students. (Te1)

[...] I try to make discussions with students from the experiences and situations they experience in practice. So, they bring the problems and I ask them to theorize on it and we debate. There are some teaching strategies that we adopt, for example, discussion groups [...] The portfolio is another strategy that we use a lot [...] The portfolios are monthly, reports of service situations, situations of professional practice, concrete situations that they experienced [...] (Te10).

It was observed that Te2 expresses a reflexive pedagogical action, in which thought and action go together. In this way, the teacher's actions are not done by chance, there is an intention that aims to make the teaching-learning process meaningful for the student, therefore, the teacher does not do without their experience. The other professors also claim that they ensure the articulation between theory and practice, by taking concrete situations as substrates for theoretical discussions. It can be seen that Te1 uses the term "always" to show that, in his/her pedagogical practice, this articulation is not neglected.

Professor Te6, using the metaphor "flag in hand", suggests believing fully in the articulation of theory and practice:

Well, I defend that with the flag in hand. Both in the Fundamentals and First Aid disciplines, we are always articulating theory and practice. Even if giving an injection, the student has to know what he/she is doing, what is the problem that the patient has, what are the side effects. It may be referring the patient to the bath; we already talk about the physical exam that will be performed. This for me is very usual, it is very clear. (Te6)

In his/her speech, Te6 always demonstrates that this articulation occurs. It is perceived that, for the teacher, it is important that the student understands the scientific rationality that guides all the nurse's practice. Thus, it is important to know what is done, when it's done and why it's done.

From these speeches, it is identified that the search for the effectiveness of the theoretical-practical relationship as an inseparable unit permeates the pedagogical action of the teachers, who contextualize the everyday situations that occurred in the practice scenarios, intertwining them with theoretical discussions.

Other teachers, in turn, present speeches in which the *applicationist* view can be identified, in which theory precedes practice:

[...] Speaking of my teaching practice in terms of the principle of articulation between theory and practice, I think it is very easy. It is an embedded practice. Our discipline has a practical workload that is three times the theoretical, so it facilitates this articulation between theory and practice. We are from theory and we are from practice, so I see that this is an advance in our curriculum. So, everything we see in theory, which is well summarized, we take to practice. I see that this matter of theory and practice is well advanced and well consolidated in the curriculum. In my performance, this is very usual (Te3)

[...] In my teaching practice in the Administration area, I understand that this articulation occurs. We have a practical workload that contextualizes what was discussed in the classroom, in the best possible way. But I think it should be a little more, there is a lack of a greater agreement, a closer approximation between teachers and the practice scenarios. The discipline has a practical workload of 30 hours, if you take the workload that we actually have there, and I have questioned this several times, it does not add up to 30 hours. The workload is not fulfilled the way it should [...] it is arranged a way for the student to stay less in the field, if you ask me why, I don't know (Te5).

It is noticed that the practice is the instance of application of theoretical knowledge, therefore an understanding that knowledge is first acquired to be applied later. This statement can be seen in Te3's speech when he/she says: "[...] Everything we see in theory, which is very summarized, we take to practice". In the speech of teacher Te5, the fact that there is a decrease in the

practical workload, which, for reasons not revealed, implies less time immersing the student in the field of practice, stands out.

Next, the speeches of the students are added to the speeches of the teachers, in the reaffirmation of the *applicationist* view:

[...]The integration between theoretical and practical content exists in most disciplines, so we always have a theoretical content then we go to the field to put it into practice, so, for example, in Child Health we go to the health center to do childcare consultations, Women's Health the same thing, we have the opportunity to do Pap smears, to attend to women and to do prenatal care. So, I think that there is no problem with that, most subjects we have this integration of content with practice (St2).

There is, in general yes. The internship fields are very rich, and always focused on what they've presented, we saw it a lot, the teacher spoke there in theory and the practice came and confirmed what had been said, so they are being faithful to what is basically the practice like that, so it's very good [...] (St3).

Yes, this one I think so, mainly due to the way it is also organized in the Internship, sometimes we have content and then we go to practice [...] We stay a lot in theory and little practice, I don't feel prepared, I don't think I'm a nurse, understand? And I'm training now, I don't feel prepared for several things [...] (St12).

More or less [...] because [...] we had all theoretical discipline, mainly Clinical Nursing in the sixth period, we had all theory in the classroom and went to the field, only we didn't have time to study because the discipline is very short, then came that much of pathology, then came that much knowledge that we had just seen in Fundamentals, that not everyone had the opportunity, for example, I performed only had two punctures until today, I am having difficulty mainly in this part of the practice, I lack experience. [...] It turns out that they throw us that much theory, then it comes the time for practice they want us to do that without us knowing, there is no time to study [...] (St5).

The students believe in the effectiveness of the articulation between theory and practice, which emerges as relevant to the extent that it makes it possible to perform procedures and techniques specific to the performing of nurses, such as childcare, prenatal, gynecological consultations, among others. The primacy of theory is noticeable. The following excerpt from St3's speech: "The teacher spoke there in theory and the practice came and confirmed what had been said, so they are being faithful to what is basically the practice" is exemplary to confirm that the practice gains relevance to the extent in which it is faithful to the parameters of the theory.

The documentary analysis of the 2015 curricular matrix shows that, in general, the planning of the disciplines maintains

the logic of theory preceding practice. Such finding is evident in the disciplines: Psychiatric Nursing, Pedagogical Training, Epidemiology, Health System Management, Health and Nursing Management, Nursing Care Systematization, Nursing Care Fundamentals, Nursing in Primary Care and Care Management in Health and in Nursing. In the disciplines, Public Health, Clinical and Surgical Nursing, Women's Health and Child and Adolescent Nursing, it is noted that the theoretical and practical contents are interspersed during the semester, but even so, they do not occur together, what is verified is the alternation, during the semester, between periods of theoretical activities and practical activities.

Another aspect that deserves to be highlighted in St12's speech refers to the short time of practice in relation to theory, which does not favor greater preparation for the exercising of the profession. In this context, other students reaffirm this and add that the pace is accelerated:

Look, I feel that yes, I don't feel that I had difficulties in this union between the theoretical and the practice, I think that the practice sometimes gets a little hurried, we miss the opportunity to get more practice in the field, so much that we get to last periods, we feel that we know nothing [...]. Some themes that have been worked on for years and years within the disciplines ranging from Fundamentals, Hypertension and Diabetes, are they important? Yeah. But it ends up having too much attention for them, and they could be given within the practice, and then increase our practice, so I think it is in this sense, and then we are taken by that rush, to be able to do procedure, do procedure [...] (Te6).

Between theoretical and practical content... [...] I think that the college offers little practice for the student, it has a lot of theory, but it has little practice of things, inside the college, without it being already with the patient and such, for example, the Semiology we have, there is very little time to train this [...] So, I think that in the curriculum it could be better worked on practice, of inserting more practice and inserting some disciplines that are fundamental and we do not have, for example, First Aid. Our First Aid is very weak, sometimes we need First Aid in a hospital in something, we do not... Nobody feels able to do anything thing with the First Aid offered in college, and it is not a mandatory discipline, it is an optional one [...] (Te11).

The lack of harmony in the distribution of theoretical and practical workload shows that a lot of time is wasted theorizing about contents that could be worked on in the practice scenario. Attention is drawn to the fact that St11 highlights the poor teaching of First Aid, since the discipline trains "nobody", that is, it does not provide students with the skills and competencies to act safely in the presence of situations that require provision of first aid. In addition, the student criticizes the fact that the discipline is optional.

The demand for a more balanced distribution between theoretical and practical knowledge is strengthened in the following speeches:

> Regarding the curriculum, if it has allowed the integration between theoretical and practical content, I believe that the subjects often offer this, but I believe that the practical content is often very small, so we are unable to develop very well what is given in theory. So, I believe that the curriculum lacks a lot in terms of practical content. [...] Sometimes there are two weeks of practice, and we have the whole semester, or even the discipline is reduced into just two months and in that we have to do both the practice and the theory, so I think that could improve a little on this issue. [...] Maybe start a little before this matter of us understanding what the nurse does in the profession, not leaving it there until the end, until then we are very lost during graduation (St10).

> This matter of integrating theoretical and practical content I think allows [...] although the curriculum has increased to five years, I was in the first class of five years, [...] I think it is still too little to pass so much ... There are some disciplines that are very extensive, the theoretical goes very fast, then the practice does too, there are times when we leave the practice without being able to do some things, some procedures really fall short [...] (St9).

It is important to emphasize that St10 criticizes the way a certain discipline is planned in the semester; it should be better arranged to guarantee a greater dilution of the contents. Another criticism refers to the late insertion of the practice, as it is only at the end of the course that it becomes possible to discover the identity of the profession.

# DISCUSSION

From the analysis of the speeches, it is observed that, for some teachers, the effectiveness of the theoretical-practical articulation is based on the understanding that it is an indissoluble unit, which houses the idea of a simultaneous movement, in which the practice is not just the application of theory, but its starting and ending point.<sup>8</sup> In this way, the pedagogical action of these teachers meets the curricular proposal of the course, which not only recommends this indissolubility, but also advises it to be essential to overcome the positivist and rationalist focus which maintains theory and practice as dichotomous poles.<sup>17</sup>

It is reiterated that, in the indissoluble unity view, theory does not command practice and does not guide it in the sense of making it dependent on ideas, just as it does not dissolve in practice, nullifying itself. Practice, on the other hand, does not mean the application of theory or a given and immutable activity, so, conceiving the theoretical-practical relationship as an indissoluble unit, implies recognizing that immanent to any practice there is always a theorization, however obscure and indefinite it may be, from this point of view, it makes no sense to think about theory followed by practice, just as it makes no sense to think about practice without theory.<sup>12</sup> In this perspective, theory and practice are mutually produced, marking the impossibility of separation and hierarchization.<sup>18</sup>

However, in the speeches of the other teachers and in the speeches of the students, there is a predominance of the thought that the knowledge precedes the doing, that is, knowledge is available in the world to be acquired and later applied to a given reality.<sup>19</sup> In this perspective, the practice spaces are reduced to mere recipients of fragmented content studied in the classroom. In addition, these spaces are perceived as instances that have little to offer with regard to the articulation of new learning and to the production and socialization of knowledge.<sup>20</sup> Thus, the practice itself does not invent, does not create and does not introduce new situations, it only proves the theory, not being seen as its challenging source.<sup>8</sup>

It is important to note that other studies that sought to analyze the process of training nurses, found similar results with regard to curriculum limitations to overcome the theory and practice dichotomy, with this dichotomy being one of the greatest challenges of health education.<sup>21,22</sup>

Veiga-Netto,<sup>12</sup> contributes to this discussion by stating that it is necessary to fight arguments that contribute to the polarization between theory and practice, because, for the author, to deny theorization and to bet everything on practice indicates a short-sighted and crude epistemological spontaneism. On the other hand, relying only on theory is nothing more than pedantry and academic isolation. Thus, the option for one of these extremes must be combated, as it only leads to stagnation and the impossibility of any educational action worthy of this name.

It is essential, then, that the theoretical-practical articulation takes place in a dialectical relationship so that the order in which theory and practice appear does not matter so much, but rather the nature of its elements and their combination.<sup>23,24</sup> For that, it is necessary to overcome the belief that knowledge is built in a progressive and linear way, and it is necessary to understand that, in most cases, knowledge is built in disorder and chaos.<sup>25</sup>

In this perspective, the theoretical-practical articulation can be thought from the principle of organizational recursion or the recursive ring of Morin.<sup>26</sup> Such a principle is opposed to the linear idea of cause/effect, of product/producer, of structure/superstructure, since everything what is produced always turns on what produces it in a self-constituting, self-organizing and self-producing cyclical process. In this light, individuals produce the society that produces individuals, that is, individuals are, at the same time, products and producers. Similarly, theory and practice are part of a circuit in which one produces and is produced by the other reciprocally.

Another aspect that deserves discussion concerns the uneven distribution between theoretical and practical workloads. In their speeches, the students express their dissatisfaction with the reduced time in the fields of practice. There is an overvaluation of theory at the expense of practice, present in most university courses and frequent complaints from students, which reveals the inadequate use of time during the course and the lack of reflection on theoretical concepts at the time of practice.<sup>27</sup>

In this sense, it is worth mentioning that the dissociation between theory and practice has been recurrent, especially in the fields that have a more direct impact on social practice, that is, in the so-called applied areas.<sup>8</sup> Nursing as a social practice, whose final product is care related to the person, at different times in the health/disease process,<sup>28</sup> when guided by this dissociation, it takes place uncritically, therefore, with little impact to bring about changes in social reality.<sup>11</sup> In Nursing education, the theoretical-practical articulation becomes particularly important when it also aims at interdisciplinary teaching, as the absence of this articulation has been pointed out as a limiting factor for the full application of interdisciplinarity.<sup>29,30</sup>

Thus, it is essential that the effectiveness of the theoretical-practical articulation as an indissoluble unit occurs in all curricular components, since this is the alternative for linking thinking and acting, uniqueness, inventiveness and the unrepeatability of the nurse's care practice.<sup>28</sup>

In this context, to face the Cartesian thinking that still permeates contemporary nursing,<sup>31</sup> the relevance of inserting complex thinking in the curricula of nursing courses is defended. The theory of complex thinking, defended by Morin,<sup>26</sup> aspires to the articulation between disciplinary fields that are dismembered by disjunctive thinking, which isolates what separates and hides everything that connects, interacts and interferes. The complex or *complexus* designates what is woven together, integrating, as much as possible, the simplifying, reductionist and one-dimensional ways of thinking and understanding reality. Such thinking is in line with the understanding of the human being as a complex action, which requires an interdisciplinary work, willing to reconnect knowledge in the face of various health problems and life conditions of human beings.<sup>32</sup>

Thus, it is understood that complex thinking brings another epistemological rationality to the educational field, especially for that which is inherent to the training of nurses, as such training involves multiple dimensions of human life - intellectual, affective, social, aesthetic, cultural, and political and multiple knowledge from various areas.<sup>33</sup>

Therefore, considering that health education is a fundamental vector in the production of knowledge and actions, which are modeling of forms of existence,<sup>19</sup> it is up to it to ensure integrated education for future nurses. Therefore, this teaching should bring, throughout the entire training process, the world of teaching and the world of work, as recommended by the NCG for Nursing courses.<sup>4</sup> This is because it is not possible, through specific activities in the curriculum, to promote in the student the desired critical and reflective capacity to act with ethical and social commitment in the health-disease process of individuals and of the community.<sup>21</sup>

Only an integrated education is able to develop in students the skills and abilities necessary to work in the UHS, which is a complex system, as it covers different levels of care, has diverse sources of financing, professionals from different backgrounds and specialties, structural and technological resources disparity, in addition to the variety of users using this system.  $^{\rm 34}$ 

# FINAL CONSIDERATIONS AND IMPLICATIONS FOR PRACTICE

In this study, the results presented point out that there are fragilities in the effectiveness of the theoretical-practical articulation in the curriculum of the Nursing course here investigated, showing the difficulties of the HEIs in achieving the effectiveness of the NCG's proposals for Nursing courses.

The fragilities identified are related to the planning of the disciplines, which maintain the logic of the theory preceding the practice to the detriment of a planning that contemplates the theory-practice junction happening synchronously, without the primacy of one over the other, and also, with the lack of harmony in the distribution of theoretical and practical workloads, with reduced student time in the fields of practice.

These fragilities indicate that the nurses' training process still follows the *modus operandi* of fragmented teaching. Nevertheless, the achievement of theoretical-practical articulation is a necessity and needs to be pursued, since the disjunction between thinking and doing corroborates for the maintenance of care practices deprived of criticality and scientificity, which thus limits the capacity for reflective acting.

Although the results presented here are limited in their temporality, it is considered that changes in the nurse's training process do not depend exclusively on new curricular designs, but, above all, on the involvement and commitment of each teacher in achieving these changes. Thus, the dichotomies still in force in nursing education will only be superseded if there is a constant search for complex thinking, capable of contextualizing and interconnecting the parts as a whole and vice versa.

The limitations of the present study reside in the fact that it is a unique case study that sought to deepen the effectiveness of the theoretical-practical articulation, which represents one of the many dimensions that make up the curriculum, in addition to considering, as participants, students from only one class and one teacher from each area. Another limitation of the study is the fact that the average time of the interviews was relatively short, which reduced the volume of material to be analyzed. In this sense, there is a need for new research that can point out the gaps in the process of training nurses, because only then, it will be possible to build effective proposals in improving nursing education and, therefore, in improving quality assistance provided by professionals in this area.

# **AUTHORS' CONTRIBUTIONS**

Conception and design of the research stages. Data analysis and interpretation of results. Writing and critical review of the manuscript. Approval of the final version of the article. Responsibility for all aspects of the content and the integrity of the published article. Vânia Aparecida da Costa Oliveira. Conception of the research and outline of the research stages. Critical review of the manuscript. Approval of the final version of the article. Responsibility for all aspects of the content and the integrity of the published article. Maria Flávia Gazzinelli.

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