RESEARCH

USE OF ACTIVE METHODS IN NURSING TECHNICAL EDUCATION

UTILIZAÇÃO DOS MÉTODOS ATIVOS NA EDUCAÇÃO TÉCNICA EM ENFERMAGEM

USO DE MÉTODOS ACTIVOS EN EDUCACIÓN TÉCNICA EN ENFERMERÍA

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ABSTRACT

Objective: to understand how the active learning methods have been developed in Nursing technical education. **Method:** a qualitative study, conducted by means of the thematic analysis technique. A total of 29 teachers from 10 Nursing technical courses in Midwest São Paulo were interviewed. **Results:** it was verified that the teachers describe some principles that guide the active learning methods; however, they predominantly use the traditional method with the implementation of some alternative practices that are close to the principles of the active methods; they encounter challenges related to the students' and teachers' resistance and lack of institutional structure, in addition to considering that their implementation is difficult and slow. When they use strategies that involve the students' proactivity, they are able to notice positive results. **Conclusion:** the teachers occasionally use some teaching practices based on the principles of the active learning methods, since the traditional teaching method is still strongly established as a habit among those involved in the process, requiring advances in institutional reorganization, as well as in teacher training and qualification

Keywords: Education, Nursing, Associate; Learning; Health Human Resource Training; Problem-Based Learning; Education.

RESUMO

Objetivo: compreender como os métodos ativos de aprendizagem vêm sendo desenvolvidos na formação técnica em Enfermagem. **Método:** estudo qualitativo, realizado por meio da técnica de análise temática. Foram entrevistados 29 docentes de 10 cursos técnicos de Enfermagem da região centro-oeste paulista. **Resultados:** constatou-se que os docentes descrevem alguns princípios que norteiam os métodos ativos de aprendizagem; porém, utilizam predominantemente o método tradicional com a implementação de algumas práticas alternativas que se aproximam dos princípios dos métodos ativos; encontram desafios relacionados à resistência dos estudantes e docentes, falta de estrutura institucional, além de considerar que sua implementação é difícil e lenta. Quando utilizam estratégias que envolvem a proatividade dos estudantes, conseguem observar resultados positivos. **Conclusão:** os docentes utilizam de forma pontual algumas práticas de ensino pautadas nos princípios dos métodos ativos de aprendizagem, pois o método tradicional de ensino ainda se encontra fortemente estabelecido como hábito entre os envolvidos no processo, sendo necessários avanços na reorganização institucional, na formação e capacitação docente.

Palavras-chave: Educação Técnica em Enfermagem; Aprendizagem; Capacitação de Recursos Humanos em Saúde; Aprendizagem Baseada em Problemas; Educação.

RESUMEN

Objetivo: comprender cómo se han desarrollado los métodos activos de aprendizaje en la formación técnica en Enfermería. **Método:** estudio cualitativo, realizado mediante la técnica de análisis temático. Se entrevistó a 29 profesores de 10 cursos técnicos de Enfermería en la región Medio Oeste de San Pablo. **Resultados:** se descubrió que los docentes describen algunos principios que orientan los métodos de activos de aprendizaje; sin embargo, utilizan predominantemente el método tradicional con la implementación de algunas prácticas alternativas que se aproximan a los principios de los métodos activos; enfrentan desafíos relacionados con la resistencia de estudiantes y profesores y con la ausencia de estructura institucional, además de considerar que su implementación es dificultosa y lenta. Cuando emplean estrategias que involucran la proactividad de los estudiantes, pueden observar resultados positivos. **Conclusión:** los docentes utilizan de manera puntual algunas prácticas de enseñanza basadas en los principios de los métodos activos de aprendizaje, ya que el método de enseñanza tradicional aún está fuertemente establecido como un hábito entre los involucrados en el proceso, requiriendo avances en la reorganización institucional, la formación y la capacitación de los docentes.

Palabras clave: Graduación en Auxiliar de Enfermería; Aprendizaje; Capacitación de Recursos Humanos en Salud; Aprendizaje Basado en Problemas; Educación.

INTRODUCTION

The promulgation of the current Brazilian Federal Constitution provided guidance to the health system, including new ways of understanding the health and disease process, as well as health care, which culminated in the creation of the Unified Health System (*Sistema Único de Saúde*, SUS). From this historical framework, it was proposed that health actions should be developed based on a broader view of health, which contemplates its multiple determinants and involves an emphasis on health promotion under the logic of surveillance.[1]

This guidance presupposes the search for comprehensiveness of actions, which implies taking the focus of health care away from the disease and towards the biological aspect, the specialty and high complexity. It therefore demonstrates paradigmatic changes in the ways of thinking and acting in health, and demands a joint effort from the institutions devoted to the training of health professionals, as well as from the health services. In this context, mid-level Nursing professionals deservingly stand out since, in addition to representing a large workforce, they are allocated to the front line of care, being responsible for direct contact with the users and, therefore, with a major responsibility in the quality of care provided.

The training of Nursing technicians has been undergoing transformations driven by the National Curricular Guidelines for professional mid-level technical education, which proposes, among other aspects, indivisibility between education and social practice, considering the historicity of knowledge, contextualization and the use of methods favorable to the integration between theory and the experience of the professional practice.[2]

Such principles are in line with the assumptions of the socioconstructivist or interactionist pedagogy of education, which has Lev Seminovich Vygotsky and Jean Piaget as its main theorists. This approach gained prominence in the early 19th century, when the classical school began to be criticized for its excessive authoritarianism, preventing learners from discovering themselves as individuals. In this context, Piaget stood out for basing his principles on a psychological approach, establishing that teaching must be centered on the students, that is, on their personality, which requires new achievements and methods. It was in this way that the movement called new school or active school was initiated, with the ideas of activity and interest, freedom and autonomy, respect for individuality, collectivity and integration.[3]

Vygotsky adds the definitions that human characteristics are the result of man and society relations, for when man transforms the environment to meet his basic needs, he transforms himself. Therefore, learning takes place through social interactions and is determined by a historical-cultural process. It intensely values integration of the cognitive and affective aspects, based on the understanding that desires, emotions, motivations, and interests are necessary in thinking.[4]

From this theoretical-conceptual base, there were contributions from several scholars who walked in the construction of a model different from traditional teaching, which has increasingly proved to be inadequate to the social demands of a post-modern world essentially marked by uncertainty, unpredictability and instability. Among them are John Dewey (who discusses learning through experience), David Ausubel (with the theory of meaningful learning), and Paulo Freire (who developed the pedagogy of autonomy).[5]

It is under the light of the guiding assumptions of these pedagogical strands that the active learning methods emerge. Through them, it is sought to prepare autonomous professionals who are qualified to exercise their profession, in such a way that, when they enter the world of work, they are able to reflect on the reality encountered and seek alternatives for the transformation of practices, based on ethical and scientific precepts. In their development, the students are placed as the center of the process and begin to assume an active posture; and the teachers take on the role of mediators, with the task of stimulating the students' critical capacity and autonomy.[6]

However, even with a theoretical framework that contributes to directing the training of health professionals, regarding the technical Nursing course, it has been found that the curricular matrices are essentially organized with an emphasis on technical procedures and on the biomedical model, evidencing the contradiction between what is recommended and what actually happens in the training of these professionals.[7]

A literature review study on the training of mid-level Nursing professionals (analysis of articles published between 2000 and 2017), conducted in the Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (*Literatura Latino-Americana em Ciências da Saúde*, LILACS) and the Nursing Database (*Banco de Dados em Enfermagem*, BDEnf), found a reduced number of scientific productions in relation to the theme, especially in the last decade.

This reveals the need for research studies that, in addition to contributing evidence and enabling reflection on the theme, can give visibility to the relevance of this professional category in the SUS.[8] Therefore, advances in this research area are necessary.

Given the above, the starting point of this study are the following questions: What is the teachers' understanding about the active learning methodologies? How are they being used? What are the advances and challenges in using them? The objective proposed is to understand how the active learning methods have been developed in Nursing technical education.

METHOD

This is a study with a qualitative approach, carried out in an educational institution in the state of São Paulo, which offers free professional education in 268 decentralized units through partnerships with the Education Secretariat. The Nursing technical course is offered by 58 units located in the 12 administrative regions of the state of *São Paulo*.[9]

For data collection, a regional unit from Midwest *São Paulo* was chosen, which is similar to the others and offered easy access to the main researcher due to geographical proximity. The aforementioned region has 11 school units that offer the Nursing technical course. At the time of data collection, these units had 104 teachers distributed in the four modules that make up the course, where modules one and two have only theoretical components, and modules two and four have practical components.

Teachers who work on the theoretical components developed in the first and third modules of the course were included in the study, considering that, by taking on the theoretical activities, they need more resources for effective reflection on the professional practice. In addition to that, they should have at least one year of active experience. Those who were distanced from their activities during the data collection period were excluded, as well as those who did not answer after three contact attempts. Each component has from three to eight teachers, where the 11 units have a total of 58 teachers in this activity.[9]

To contact the teachers, the course coordinator was asked to provide a list with their names and e-mail addresses. The invitations were made sequentially according to the list provided, where after each interview, the invitation to the next teacher was forwarded. The interviews were conducted in person, via *skype* or video call, according to the interviewees' preferences. Data collection was conducted with many difficulties, especially in relation to the teachers' availability and willingness to participate. Even so, it was possible to interview 29 teachers, and the interviews were closed when data saturation was observed.[10] Only one interview per teacher was conducted.

Semi-structured interviews were conducted in the period from November 2019 to March 2020, using a script containing characterization data of the participants and questions referring to their understanding about active learning methods, how their development occurs in the daily life of the teaching and learning process, and what the advances and challenges of this practice are. The main researcher, trained in the activity, conducted all of the interviews, which lasted a mean of 30 minutes.

The data were analyzed using the thematic analysis technique, which is characterized by flexibility and for being essentially independent of a specific theory or epistemology, and can be applied with a variety of theoretical and epistemological approaches. This approach corresponds to a process of coding the information obtained without assigning previously existing categories, that is, it assumes that the themes emerge as the research subjects participate in the study.[11] The phases of its development are described below:

- Phase 1: familiarization with the data, data transcription, reading and re-reading leading to the initial ideas.
- Phase 2: elaboration of initial codes when the interesting characteristics of the dataset are systematically identified.
- Phase 3: grouping of the codes into potential themes, when a search by themes is conducted.
- Phase 4: review of the themes, when it is verified how they relate to the coded extracts and to the dataset.
- Phase 5: designation of the themes by means of a new analysis, aiming at refining the specificities of each.
- Phase 6: production of the report, taking into account the themes elaborated and their relationships with the research questions and with the literature.[11]

Respecting the participants' confidentiality and comfort, the answers were recorded, fully transcribed and identified with the letter "E" for Interviewee ("*Entrevistado*" in Portuguese), followed by the numerical order in which the interviews were conducted. At the interview, the research objectives and methodology were presented, as well as the Free and Informed Consent Form (FICF).

For the interviews that were not conducted in person, the FICF was emailed. Once signed, it was returned (via email) to the person responsible for the research, and the interview was initiated immediately after that. The research was approved by the Committee of Ethics in Research with Human Beings of the proposing institution.

RESULTS

Most of the teachers interviewed were female (89.6%), aged between 30 and 49 years old (62.1%), and with a training time from 11 to 20 years (51.7%). Almost all of them have some specialization (96.5%), 21 (72.4%) have a bachelor's degree, six (20.7%) have a master's degree and six are MSc students. From the interview data, five thematic categories were obtained, namely: knowledge of the principles of the active learning methods; predominance of the use of traditional teaching methods; implementation of active learning methods; challenges of using the active learning methods; and achievement of satisfactory results with the application of active strategies.

Knowledge about the principles of the active learning methods

This category reveals that the participants recognize aspects that characterize the principles of the active learning methods, such as: the student's protagonism and active participation; the teacher as a mediator of the process; the way to encourage the student to be more critical; and the integration between theory and practice, which makes learning meaningful, as observed in the following statements.

Then they're not mere spectators, they have autonomy in their learning, they participate actively, not in a class where the students just receive information, they participate in the process, they build (E3).

It's when the students participate in the construction of their knowledge, the teachers will be a guide, they're not trustworthy knowledge providers (E23).

It came to make the students more critical, a different way of thinking, of searching content, meaningful learning (E9).

For the students to learn with the practice, mainly in our area, which is Nursing (E7).
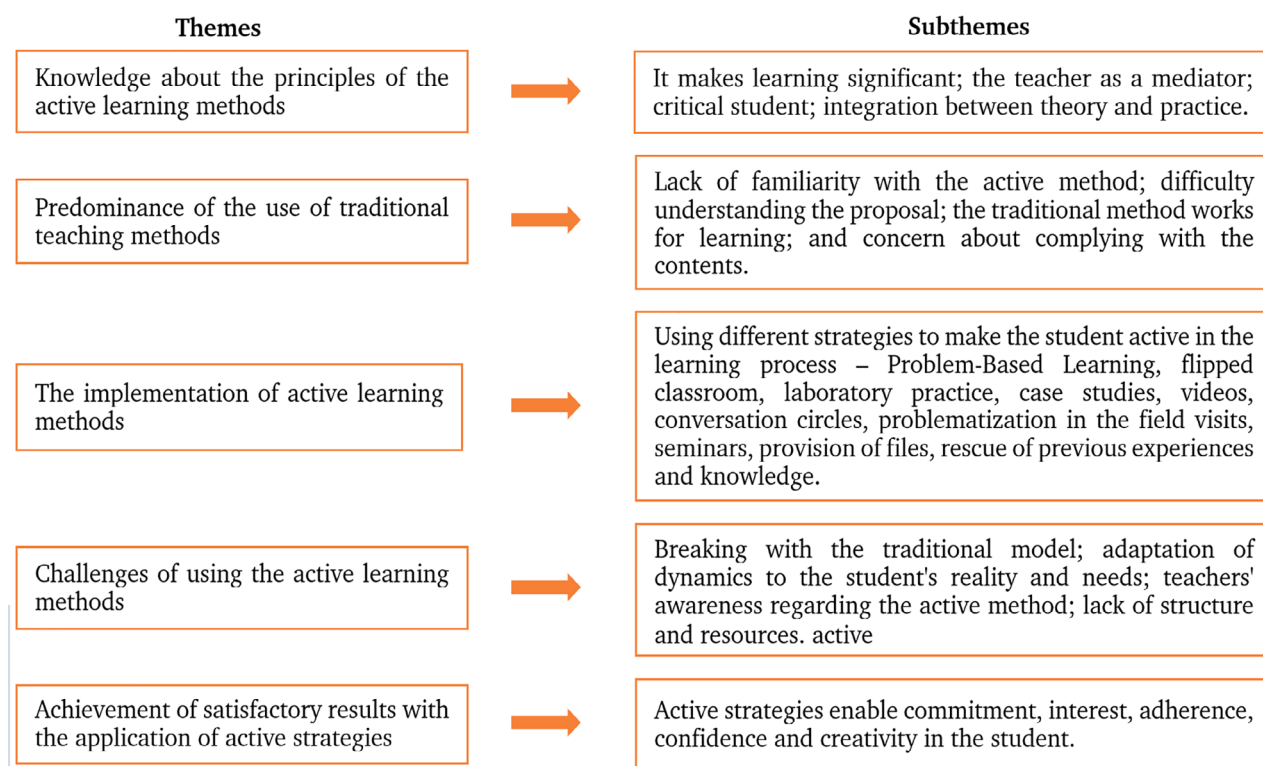
Themes	Subthemes
Knowledge about the principles of the active learning methods	It makes learning significant; the teacher as a mediator; critical student; integration between theory and practice.
Predominance of the use of traditional teaching methods	Lack of familiarity with the active method; difficulty understanding the proposal; the traditional method works for learning; and concern about complying with the contents.
The implementation of active learning methods	Using different strategies to make the student active in the learning process – Problem-Based Learning, flipped classroom, laboratory practice, case studies, videos, conversation circles, problematization in the field visits, seminars, provision of files, rescue of previous experiences and knowledge.
Challenges of using the active learning methods	Breaking with the traditional model; adaptation of dynamics to the student's reality and needs; teachers' awareness regarding the active method; lack of structure and resources. active
Achievement of satisfactory results with the application of active strategies	Active strategies enable commitment, interest, adherence, confidence and creativity in the student.

Figure 1 - Distribution and synthesis of the respective categories. *Marília*, SP, Brazil, 2020

Predominance of the use of the traditional teaching methods

Although there is knowledge about the principles of the active learning methods, the interviewees state that they predominantly use traditional teaching methods. It is observed that traditional teaching is rooted in the teachers' imaginary when they assert that the students are not inserted in or used to active learning methods. In addition to that, they find difficulties for the students to understand and work on the new proposal. The study participants also understand that the traditional method is adequate and that it has been working in the students' learning processes. In addition, there is concern about complying with all the contents proposed for the academic discipline.

We're not inserted in and used to the methods, they [the students] *have certain difficulty finding themselves within the methodology, until they manage to understand what it is and work with it, this part is the most difficult* (E29).

Because my classes are on the Anatomy, Physiology part, so I use a lot of oral exams, which I think works well (E1).

Then, escape to the traditional is not always an option, because you have a content to be worked on (E5).

I'm an old teacher, I can't stand that they make noise while I'm talking, I don't want them to touch the cell phone, because I want them to focus their attention on what I'm talking about, because I prepare for the class... there are even teachers who say that it seems like there is no one in the classroom because of the silence (E27).

The implementation of active learning methods

Alongside the traditional method, the teachers introduce alternative learning methods and practices to make the students more active and participatory in the learning process, among which the following stand out: the use of Problem-Based Learning (PBL); flipped classroom; laboratory practice; case studies; use of videos; conversation circles; problematization after visits to the practice field; seminars; provision of text files; and rescue of experiences and previous knowledge, as observed in the following statements.

I try to mix the classes a little, so I bring a PBL, an integrated panel, a flipped classroom... (E5)

I do a lot of lab practice, then I do case studies, we share stories about patients in the ER [Emergency Room], *in the medical clinic, in the health center...* (E16)

I talk, play a video and we sit in a circle to see what each one has learned, I ask each of them to bring what they already know about their practice, their life, many work as assistants, caregivers... (E17)

I prepare seminars and lectures, I provide digital files to them via WhatsApp or e-mail, if it's easier I also take the printed version... (E23)

I work a little bit with the reflective portfolio, I bring situations and problems, ask questions and make them reflect upon those questions in their daily practice (E28).

Challenges of using the active learning methods

For the teachers interviewed, the use of active methods is associated with important challenges, the main one being the difficulty in breaking with the habit of the traditional method, in which the contents are presented on the blackboard, which leaves the student in a comfortable situation. The teacher's difficulty in adapting the dynamics to the students' reality and needs can be observed, which is complemented by the assertion that they seem to be distant from what is happening. There is also a need to sensitize the teachers about the use of active methods, which requires time and a favorable structural organization, which is lacking.

They find it very difficult when you depart from the traditional, the blackboard, because they're not used to doing the research, they want the traditional (E10).

The students are very dispersed, very uninterested, I find the methodology difficult, because sometimes they seem so distant from what is happening, but I find it really difficult (E17).

In the evening period the students come a little tired from work and can't get a preview of the content to be worked on in the classes (E20).

So I see that the biggest challenge is how to sensitize the teachers to have this adherence to the differentiated method (E23).

It's a little more work because we need to prepare, plan everything to bring it to the students (E2).

I think it's the course structure! As I see it, the course structure makes it a little difficult to use this active methodology (E28).

Achievement of satisfactory results with the application of active strategies

Despite the difficulties encountered, the teachers report that, when they manage to insert activities that are close to the principles of the active learning methods, as they demand active participation and protagonism from the students, they like, are committed to, show interest and join the activities, requesting more activities with the same characteristics, because they can see the product of their actions. Increased confidence, creativity and critical attitude are also skills that teachers observe among the students in these conditions.

They're interested, they interact more, they do the activities, so they like it, but after they understand it, it takes time because of the whole context (E28).

It is clear that there is less dropout, more commitment, more interest, you arouse more attention and curiosity, there is more willingness to learn on the part of the student when the methodology is put into practice (E23).

The advances that I see in my students is that they're more critical...in relation to appreciation of the profession... Then I see that the active method ends up developing creativity (E3).

I notice that they learn more... that knowledge flows and they are confident when they have to talk about it (E22).

DISCUSSION

By analyzing the interviewees' statements, it is observed that they coherently indicate some of the principles that guide the active learning methods. These principles have been put on the agenda in the discussions related to the teaching and learning process for many years, as observed in the texts by Jean Piaget and Vygotsky in the first half of the 20th century, going through different perspectives by other scholars, without losing their essence.[5,6]

To follow this logic, the importance of autonomy and the protagonism of those involved in the process must be considered, which is related to distributed leadership and emphasis on human relations and ethical principles to promote the feeling of belonging.[12] The teachers take responsibility for developing transformative strategies and the students are placed as subjects of the process in a context of actions consistent with the students' problems and proposals, in order to encourage knowledge and awareness of the complexity of the challenges imposed by reality. In this way, there is room for the students to have experiences that value creativity, autonomy and a sense of belonging.[13]

However, in the way they act and interact in the classroom, it is observed that the teachers essentially employ the traditional method, going against the idea of having a conceptual understanding and of the purpose of the active methods in the training of the Nursing technician to work in the SUS. They use the traditional method because they believe that it is more effective, because of the need to comply with the content, because they feel that there is lack of preparation in the students, and because they see that the organizational structure is not favorable to the use of different methods. They also express valuation of the content, as well as its transmission, as absolute truths, centered on the teacher's knowledge and power, which requires inertia and passivity in a space that should be permeated by reflections and associations with the students' daily lives. This teaching model promotes distancing of the student from social reality, which mainly occurs for disregarding the relationship and complementarity between theory and practice, between basic and professional content, as well as interdisciplinarity as a way to understand the complexity existing in the real world.[14]

In a study carried out with pedagogical projects from technical courses in public and private institutions, it was found that teaching is essentially based on practices of procedures centered on the biomedical model and on the cognitive aspect. This teaching format certainly does not allow understanding extended care and does not encourage a positioning toward changing the social reality, which involves the capacity for reflection/criticism regarding the complexity of the work environment, as well as the development of relational skills, since teamwork is a need in the current health system.[7]

However, although the advantages in the use of active methods are evidenced in different realities, in a literature review on the use of problem-based learning in undergraduate courses from different countries, important challenges are found in this use, such as lack of adequate preparation of the teaching environment, as well as of teachers and students, to incorporate the principles of active learning and the interference of the cultural aspects.[15]

Similar results were found in a study conducted in elementary school classrooms in Greece, 10 years after the implementation of an integrated curricular reform, in which critical thinking and citizenship education were analyzed. It was verified that the teachers also tend to implement traditional practices, meeting the parents' expectations and the standards required in the university entrance examination, at the expense of training for democratic citizenship.[16]

Therefore, the incorporation of the active learning principles involves paradigm shifts, which requires time, teacher training and openness in the professors to the incorporation of new perspectives on the teaching and learning process, in addition to institutional investment in this direction. The aforementioned requires transformations in the school, in the curriculum and in the teachers' posture, as well as conceptual clarity.[17]

In the process of implementing new educational practices, it is necessary to take into account that the possibilities for change are present in all schools; however, as a matter of habit, it is common to perpetuate the same way of teaching.[18] The habit deserves to be analyzed, since it comprises those behaviors performed frequently and automatically, without the need to think and obtain information to judge, decide and act. Therefore, they are stable and difficult-to-overcome behaviors which essentially involve motivation.[19]

In the creative school approach, it is acknowledged that the change process requires criticism, goals and theoretical bases that address how to move from one situation to another.[19] Thus, based on the interviewees' reports, it can be inferred that the path to change has been taken, since they are able to have the necessary critical attitude regarding the gap in the use of the traditional method. However, it is possible that the goals are not well established, which requires adequate planning, involving the entire institutional structure and, especially, recognition of the reality of the target group served by the school.

In a scenario of predominant use of the traditional method, the teachers seek to implement different ways to value the students' proactivity and protagonism, which indicates that they seek ways to break, even if partially, with the traditional model, highlighting the need to advance in discussions on the theme, especially in relation to the institutional direction and pedagogical training of teachers.[18]

Thus, as in this study, when the knowledge of teachers from a public higher education institution about the teaching-learning process was analyzed, it was found that, although they favor the use of the traditional method, they incorporate alternative practices with a view to turning students into subjects of learning and teachers into mediators. Among them, they highlight the use of seminars, case studies, portfolios, and the elaboration of products related to the contents taught in class.[20]

In relation to the challenges identified by the teachers interviewed, it can be observed that, on the one hand, the students prefer to stay in the comfortable space where the habit is maintained, because they are often tired, not very motivated or open to new learning. On the other hand, it is noticed that the teachers also find it difficult to implement changes that are in line with the reality experienced by the students, maintaining the routine so well established by the traditional teaching method. Thus, they emphasize that developing active methods is not an easy task and that it requires time.

Faced with this, it is necessary to point out that it is in diversity that the active methods become even more necessary, as well as the problematization method, thought up by Paulo Freire when he proposed that teaching should start from the learners' reality and leverage what they already know about it, resorting to a liberating, dialogical, reflexive, transformational and critical perspective. Thus, the starting point is understanding that an education with progressive and humanizing principles is not merely a matter of a technique, for the student's personality must be part of it.[13]

It is impossible to ignore that the transition to or the implementation of an active method requires structural investments and adequate qualification of teachers and students, since most of them work in small groups and the information sources need be easily accessible.[21]

The teachers interviewed assert that, by using alternative practices that allow more protagonism in the students, they were able to observe satisfactory results in relation to involvement, commitment, interest, creativity, critical attitude and confidence, and that these results are essential for training focused on the needs of the SUS.

The development of critical attitude is considered the main objective of the teaching and learning process and, therefore, it must be defined as a goal to be followed by the training institutions. Critical thinking, which is closely related to creativity and to problem-solving skills, is a highly relevant characteristic in the training of the Nursing technician, who is given the important task of direct contact with the users, which is considered the final product involving the entire structure and organization of the health services.[22]

CONCLUSION

The results of this study reveal that the Nursing technical education course teachers are able to identify some principles of the active learning methods. However, they predominantly use the traditional teaching method and seek to implement some alternative practices that enable more interactivity, protagonism and critical attitude in the students, which indicates the need for more understanding of the conceptual fundamentals and of the relevance of the active methods in the training of the Nursing technician.

In this path, therefore, challenges are encountered related both to the difficulty adapting the method to the students' reality, and to the lack of institutional structure and teachers' awareness regarding the use of differentiated methods. In addition to that, they consider that their implementation is difficult and slow. However, they acknowledge that, when they employ teaching practices that involve proactivity and protagonism, the students show commitment and interest and join the activity, and it is possible to notice an increase in confidence, creativity and critical capacity about reality.

It is revealed that, although the principles of the active learning methods have been discussed for almost a century and are considered important to define a new logic to exercise the care process – especially when considering the need to focus on the integrality of care with an emphasis on health promotion, bonding, and accountability - its use walks between important barriers. It then becomes necessary to maintain continuous advances in institutional reorganization, with investments in teacher training and qualification, since the traditional teaching model is strongly established as a habit among those involved in the process.

A limitation of this study is the fact that it was carried out in an institution which, although it has units all over the state of *São Paulo*, is public in nature and, therefore, may present different characteristics from other schools, mainly those belonging to the private sector. The results and reflections may subsidize a new way of looking at the training of these professionals, including, essentially, qualification of teachers and structural reorganization of the training institutions. In addition to that, broader-scope studies are necessary with a view to expanding understanding on the theme.

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