

**USE OF ACTIVE
METHODOLOGIES
IN THE NURSING
TEACHING PROCESS:
AN INTEGRATIVE
LITERATURE REVIEW**

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Abstract: Introduction: In the current paradigm, nursing education has been subject to new demands, given the evolution of technologies and new requirements of the labor market, such as the ability to reflect, respond, make critical decisions, and be creative. In order to develop these skills, active methodologies are becoming increasingly important and have been incorporated into nursing education models. Objective: To identify the most commonly used active methodologies in Nursing teaching process. Methodology: Integrative literature review article, with research in the Pubmed (Publisher Medline), SciELO (Scientific Electronic Library Online) and Science Direct databases, in October 2022, to answer the question: “What are the active methodologies used in Nursing teaching process?”. Results: A total of 15 articles were obtained for the present review for analysis and discussion, after implementing the inclusion and exclusion criteria. Given the articles analyzed, we sought to know which active methodologies are used in the teaching process of the nursing course. Conclusion: There are several active methodologies adopted in Nursing teaching, namely: interactive learning, active search, flipped classroom, learning with music and educational games, problem-based learning, PBL and telenursing, simulation using mannequins, Peyton’s Four Step methodology, peer collaboration, MILO and Mind Mapping. With this, the starting question “What are the active methodologies used in the teaching process in Nursing?” was answered.

Keywords: Active methodologies, Nursing, Teaching process, Students.

INTRODUCTION

With technological and scientific innovation, teaching has been the target of new demands, given the changes in the “human being’s way of thinking, acting and

learning” (Lázaro, Sato & Tezani, 2018, p.2). In Nursing, knowledge is also built through practical experiences, in which the student starts to play a leading role in the construction of their own knowledge based on their experiences, in addition to all the skills belonging to the technical-scientific domain (Pinto & Marin, 2020). Thus, according to the same author, students are expected to be able to build, plan, implement and evaluate health outcomes and interventions for the population, in addition to being able to solve problems that constantly challenge them during their daily clinical practice.

In order to respond to these needs, efforts have been made by educational institutions and teachers to incorporate new strategies that boost both the time, form and space of learning (Masetto, 2018) and that enable an “autonomous, critical -reflective and continuous”, they are known as active methodologies (Colares & Oliveira, 2020, p.375).

This way, active methodologies are “a set of teaching-learning strategies that aim at the protagonist student in the construction of their own knowledge”, there are several types, which allow the student to learn to learn, being responsible and participating in this process (Colares & Oliveira, 2020, p.376), promoting “critical and reflective education [...] in which the student seeks knowledge” (Berbel, 2011 cited by Dias & Jesus. 2021, p. 20).

The need to implement active learning methodologies requires involved teachers who encourage students’ responsibility and autonomy in their individual and collaborative learning process (Pascon et al., 2022). In turn, in Nursing teaching, active methodologies play a leading role in the training of critical nurses with the ability to reflect for decision-making and solving health problems of the population in general, since these methodologies allow students

to the discussion and argumentation of contextual contents (Ghezzi et al., 2021; Silva et al., 2015 cited by Dias & Jesus, 2021).

According to Pascon et al. (2022), the adoption of this type of methodologies becomes essential for teaching in Nursing, especially with regard to curricular units that include theoretical-practical components, encouraging students to actively participate in their entire learning process., thus going beyond the traditional teaching model, training “professionals who can reconstruct the acquired knowledge and not just reproduce it mechanically and uncritically” (Dias & Jesus, 2021, p.20), leading nurses to have a greater concern and consideration with humanized care.

In this sense, when verifying the relevance that active methodologies exert on nursing education, the general objective of this integrative literature review is defined as analyzing the most recent scientific evidence about active methodologies that are used in the teaching process in Nursing.

METHODOLOGY

This article is an integrative literature review, since it is a methodology that allows a generalized analysis, based on available scientific evidence, research already carried out, and to obtain conclusions about the current knowledge of the topic to be investigated (Bravin, Trettene, Andrade & Popim, 2018).

First, after a more comprehensive research on the subject under study, the starting question was defined as “What are the active methodologies used in the teaching process in Nursing?”.

During the month of October 2022, bibliographic searches were carried out in the electronic databases Pubmed (Publisher Medline), SciELO (Scientific Electronic Library Online) and Science Direct, using the

descriptors: Active methodologies, Nursing, Teaching process, Students and the boolean AND operator.

Inclusion criteria were articles published in the last five years, from 2018 to 2022, with full text available online and free of charge, peer-reviewed, in Portuguese, English and Spanish. In turn, the exclusion criteria were articles outside the previously defined period, master’s dissertations, doctoral theses and non-scientific articles.

After obtaining, initially, 221 articles, these were filtered from the exploratory reading of the titles, abstracts and, later, the full text. Finally, the analysis and interpretation of the 15 selected articles began. This process is evidenced in Figure 1, showing the PRISMA article selection flowchart (Page et al., 2020).

RESULTS

Considering the 15 articles analyzed, all (100%) address issues related to the teaching-learning process of the Nursing student and take into account their experiences, experiences and emotions.

Of these 15, 7 articles (46.67%) reveal the use of active methodologies in the context of simulated practice and 3 (20%) refer to the use of active methods and strategies in the context of clinical practice. In 5 (33.33%) of the selected articles, the importance of using communication in active learning methodologies is highlighted. The development of critical-reflexive thinking about practice based on active methodologies is evidenced in 14 articles (93.33%) Finally, 3 (20%) of the articles emphasize the use of active methodologies in a remote format of distance learning.

The selected articles are summarized, in alphabetical order by title, in Table 1.

Identification of studies through databases

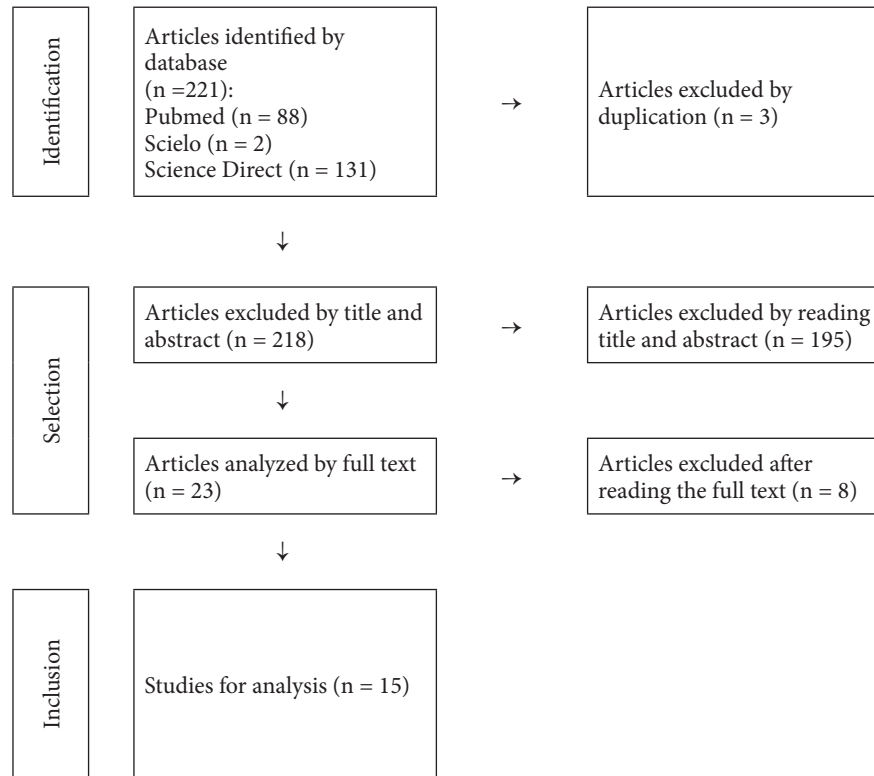


Figure 1. Flowchart for selecting articles according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (adapted from Page et al., 2020).

STUDY (E)	TITLE	AUTHOR/YEAR	GOAL	TYPE OF STUDY	RESULTS
E1	Active methodologies for graduation in nursing: focus on the health care of older adults	Souza E. F. D., Silva A. G., & Silva A. I. L. F., (2018)	To describe the experience of using active methodologies in simulation for the students' learning process.	Experience report	The use of simulation as an active methodology allows the student to anticipate reality in the context of clinical practice.
E2	Aprendizagem baseada em projetos no ensino remoto para estudantes ingressantes da graduação em enfermagem	Pascon, D. M., Vaz, D. R., Peres, H. H. C., & Leonello, V. M. (2022)	To report the experience of using the Project-Based Learning methodology in emergency distance learning with nursing students.	Experience report	The methodology adopted and the use of digital technologies allowed the achievement of the proposed objectives, increasing the students' motivation and autonomy throughout the distance learning process, and the development of skills for the elaboration of projects in education for training in Nursing.
E3	Clinical simulation to teach nursing care for wounded patients	Silva, J. L. G., & Oliveira-Kumakura A. R. S., (2018)	To describe the experience of building and applying clinical simulation scenarios.	Experience report	With the application of role play, it was possible to evaluate and discuss the treatment of the wound, which is important for the teaching-learning process of the student.
E4	COVID-19 Pandemic Impact on Nursing Student Education: Telenursing With Virtual Clinical Experiences	Hargreaves, L., Zickgraf, P., Paniagua, N., Evans, T. L., & Radesi, L. (2021)	Share best practice ideas for clinical instructors to educate when clinical care they are not available.	Qualitative study	Five clinical instructors follow the pre-brief, case presentation and debrief process while students develop critical thinking, communication skills and use of the nursing assessment process, diagnosis, results, planning, interventions and evaluation.
E5	Effects of Smartphone-Based Mobile Learning in Nursing Education: A Systematic Review and Meta-analysis	Kim, J. H., & Park, H. (2019)	To assess the effects of smartphone learning on nurses and nursing students.	Systematic review	Smartphone learning had a positive influence on the knowledge, skills, confidence and attitude of nursing students, and could be an alternative method for better learning in nursing education.

E6	Estratégias de metodologias ativas de aprendizagem na formação do enfermeiro: revisão integrativa da literatura	Ghezzi, J. F. S. A., Higa, E. F. R., Lemes, M. A., & Marin, M. J. S. (2021)	To analyze the scientific evidence about the use and contributions of active learning methodologies in nursing education.	Integrative literature review	The strategies that stood out the most were simulation, problem-based learning and the flipped classroom, active search, theory and practice integration, and group work.
E7	Implementation of active learning methods by nurse educators in undergraduate nursing students' programs – a group interview	Pivac, S., Skela-Savic, B., Jovic, D., Avdic, M., & Kalender-Smajlovic, S. (2021)	To obtain data from nursing advisors on the use and effects of implementing active learning methods in the study process of Nursing students after theoretical training.	Qualitative study	The use of various active learning methodologies in simulation environments improves the performance of Nursing students in terms of critical thinking and communication skills.
E8	Metodologias ativas na formação crítica de mestres em enfermagem	Sobral, Viana, Lívio, Santos, Costa & Rozendo, (2020)	To report the experience in the use of active methodologies in the training of masters in nursing.	Descriptive study of the experience report type	Using the methodologies daisy (game) and musical parody, it was noticed a greater attention on the part of the target audience, as well as a greater participation for the construction of knowledge.
E9	Mock panels as an active teaching methodology in the education of nursing doctors	Morais, I. F., Cassiano, N. A., Medeiros, S. M., Menezes, R. M. P., Dantas, R. A. N., Dantas, D. V., & Feijão, A. R., (2018)	To investigate the experience of the use of simulation benches as an active methodology in teaching in postgraduate nursing.	Experience report type study	The simulation benches help in nursing training, so that the student resorts to their critical thinking and autonomy.
E10	Model for Improvements in Learning Outcomes (MILO): Development of a conceptual model grounded in caritative caring aimed to facilitate undergraduate nursing students learning during clinical practice (part 1)	Koldestam, M., Brostrom, A., Peterssons, C., & Knutsson, S. (2021)	To describe the development of a conceptual model of care aimed at facilitating the learning of undergraduate nursing students during clinical practice.	Exploratory study	The Model for Improvements in Learning Outcomes (MILO) relates didactic learning with important concepts for Nursing through the use of tools such as reflection, structure and orientation of the Nursing student in clinical practice.

E11	Nursing students' attitudes toward mobile learning: An integrative review	Chen, Yang, Wang, Xiao, Xu, Shen, Qin, Wang, Li, Chen, Leng, Pu & Sun	To explore whether nursing students' attitudes towards the use of learning through technological devices are positive or negative and identify the factors that influence them through a literature review.	Integrative review	Most nursing students have positive attitudes and willingness to learn through technological devices, but the actual usage rate remains low.
E12	Preceptors' and nursing students' experiences of using peer learning in primary healthcare settings: a qualitative study	Jassim, T., Carlson, E., & Bengtsson, M. (2022)	To understand the perception of students and mentors about the educational model of peer education.	Qualitative study	Counselors and students understand peer learning as a beneficial educational model for learning in primary health care. They considered that the model leads to the development of professional identity and nursing skills.
E13	Students' perceptions and experiences in a health promotion course using interactive learning	Al-Natour, A. A., AlNatour, A., Ali, R. A., Alzoubi, F., Almomani, M. H., & Albashtawy, M. (2021)	To describe students' experiences and perceptions using an interactive learning approach.	Descriptive qualitative study	Interactive learning helped students to engage in the physical and cognitive learning process. Several advantages were mentioned by students in relation to the use of interactive learning, including improving understanding, sharing ideas and opinions, promoting self-esteem and self-confidence, and improving interpersonal communication.
E14	The role of manikins in nursing students' learning: A systematic review and thematic metasynthesis	Handeland, J., Prinz, A., Ekra, E., & Fossum, M. (2021)	To summarize and synthesize results of primary qualitative research on the experiences of nursing students in educational activities with mannequins.	Systematic review and thematic metasynthesis study	Three types of experiences of the students with the mannequins were identified: the perception of the mannequin as a person, the performance as a nurse and their experience in teamwork.
E15	The teaching approach on communicative skills in different teaching methodologies	Oliveira K. R. E., Trovo M. M., Risso A. C. M. C. R., & Braga, E. M. (2018)	To understand the facilities and difficulties in communication, in the form of experiencing different teaching-learning methodologies.	Qualitative research study	The use of active methodologies influences the development of communicative skills.

Table 1. Distribution of articles according to title and authors, year, objective, method and results.

DISCUSSION

According to the article analyzed by Ghezzi et al. (2021), active learning methodologies have increasingly gained prominence, given their objective of placing the student at the center of the teaching and learning process, through the experience of real situations, understanding significant knowledge. According to the same author, the active participation of the student in his/her learning process promotes his/her comprehension and memory capacity, since the brain acts in a more dynamic way.

Pascon et al (2022) argues that the use of active methodologies implies that teachers involved, starting from pedagogical mediation, stimulate the protagonism and autonomy of students in the individual, collaborative and, in turn, collective learning process. Sobral et al., (2022) complement the aforementioned idea by stressing that the student does not perceive learning as “a vertical relationship between teacher and student” in which there is an obligation to learn in a certain way, “providing a link between teaching and learning”. learn” (p.8).

According to the thirteenth study by Al-Natour et al. (2021) emphasizes the use of interactive learning as an active methodology in the learning process, which allows effective interactions, providing a learning environment in which students are encouraged to be creative and use critical thinking. This way, active learning promotes in the student - interactivity, understanding, motivation to learn, attention and interest in the topics addressed - increasing their ability to solve problems and critical thinking (Meguid & Collins, 2017 cited by Al-Natour et al, 2021).

This methodology allows researchers, and later teachers, to understand interactive teaching and the students' own thoughts and perceptions, using not only the stimulation

of students for participation and social interaction, but also expository methods, namely, PowerPoint, Youtube, e-books and movies found on the internet (Al-Natour et al., 2021).

The same authors add that interactive teaching is an excellent opportunity for students to communicate in groups, through reasoned discussions and reflections on relevant topics, which end up promoting awareness of their beliefs, perceptions and attitudes (Al-Natour et al. al., 2021). The study by Mincey and Gross mentioned in the article by Al-Natour et al. (2021) addresses the opportunity that students have to agree or disagree, showing different points of view on certain themes, leading to the joint construction of knowledge.

Regarding the construction of new knowledge, the article by Ghezzi et al. (2021) also adds the active search as a method that places the student as an active agent of their own knowledge, resulting in meaningful learning; the integration of theory with practice, which provides students with self-confidence, empathy, security and creativity, preparing them better for their professional future, and also the method of group work that promotes the ability to communicate and assessment with regard to its limitations and needs.

The same article also exposes the inverted classroom method that encourages the student to research and study the content to be taught, implying their preparation, resulting in a greater use and satisfaction of learning, in a better preparation for the practice. clinic, in more confidence and better communication skills.

Furthermore, in study eight, two methodologies are addressed: the use of music that enables fun and pleasurable learning, promoting “creativity, development of autonomy and critical awareness in the

construction of one's own knowledge" (p. 8); and the educational game, in which, based on the theoretical concepts to be learned, opens space for "debate, exchange of opinions and experiences", with students building their field of knowledge through a joint dynamic (p. 8).

The theoretical approach also mentions, as an active methodology, problem-based learning that, starting from a problem-situation, leads the student to mobilize their previous knowledge, to raise questions and, consequently, to develop clinical reasoning and autonomy, resulting in more meaningful learning (Ghezzi et al., 2021).

It is important to point out that, with the pandemic period, caused by COVID-19, there was a need to adapt the teaching methodologies previously used in person, to a new planned and developed structure, of an emerging character, in remote format, which encouraged many teachers to make a retrospective of them, namely, the active methodologies in an attempt to guarantee, equally, the development of the teaching-learning process of the students (Pascon et al., 2022).

In this context, the article by Pascon et al. (2022) highlights the project-based learning methodology – Project Based Learning (PBL) – which allows students to confront real-life situations, issues, problems and contexts, guaranteeing them meaning by defining the way to approach and act cooperatively looking for the solution. This methodology not only allows the acquisition and development of skills to work in a group/team, but also "stimulates autonomy, proactivity, commitment", respect for the opinion of others and creativity (Pascon et al., 2022, p. 6). According to this study, the phases of this methodology are: "anchor, driving question, investigation and research; creation and development and presentation of results" (p.2).

Even during the pandemic, the telenursing methodology was widely used in order to ensure virtual clinical learning, revealing the effectiveness of the adequate demonstration of caring for the person, skills, leadership and communication skills in the student (Hargreaves et al., 2021).

In relation to the article mentioned above, learning through mobile devices emerges as a methodology that has been increasingly used, being defined as "the study that takes place anytime and anywhere with the help of mobile devices" (Chen et al., 2021, p. 478), consisting of mobile devices (mobile phones, computers and others), applications and internet service. In the study by Chen et al. (2021), the perception that nursing students have of this methodology was identified, and the majority approved it, identifying as advantages: convenience, for easily connecting to the internet and obtaining necessary information, and for allowing direct and fast among colleagues/faculty; usefulness, as it enables the "stimulation of thought, increased self-confidence, increased knowledge and reduced levels of stress and anxiety related to the study"; and ease of use, given that the current generation is a generation that grew up using these devices (p.480).

In the context of practical teaching, simulation stands out among the most used strategies, which, by allowing a closer approach to professional practice, leads to the development of "clinical reasoning, communication, self-confidence, autonomy, critical and reflective learning, creativity, interdisciplinary training and articulation of cognitive, psychomotor and affective attributes" (Ghezzi et al., 2021, p.7) of the student and is still associated with efficacy and better clinical results (Silva & Oliveira-Kumakura, 2018; Morais et al., 2020; Ghezzi et al., 2020; Ghezzi et al. al., 2021).

In this sense, Oliveira et al. (2018) and Sousa et al. (2017) add that simulated practice gives students the opportunity, on the one hand, to develop their skills, highlighting the holistic assessment of the person, as well as allowing the teacher to identify their difficulties early.

Given the importance of simulated practice, Francis and O'Brien (2019, cited by Pivac et al., 2021) add that it can be improved through the use of mannequins allowing, prior to real contact with the person, the error without causing damage., contributing to greater student self-confidence and security (Hashim et al., 2016 & Smrekar et al., 2017, cited by Pivac et al., 2021).

Pivac et al. (2021) thus expose Peyton's Four-Step Approach learning methodology, which they refer to as highly effective in the learning process of nursing interventions, including steps, demonstration, deconstruction, understanding and intervention, allowing for active student involvement and the development of greater competence in terms of critical thinking. The repetition of the intervention, as a result, has positive effects in terms of strengthening knowledge, which results in students in a reduction of errors during the provision of health care to the person in the context of clinical practice, thus ensuring a higher quality of nursing care (Pivac et al., 2021).

One of the most used tools in simulated practice are mannequins, most of which are currently quite sophisticated, which offer a multitude of features that contribute to the idea of realism, according to the fourteenth study. Studies presented by these authors indicate that learning based on this methodology benefits the acquisition of knowledge of nursing students, the development of psychomotor skills, relational skills, critical thinking, problem solving skills, clinical judgment and increased feelings of self-

confidence, through of playing a facilitating role in the development of professional identity (Handeland et al., 2021). During the use of manikins in laboratory practice, Dean et al. (2015, cited by Handeland et al., 2021) also mention that when observing the performance of colleagues, each student individually ends up being able to reflect on their own actions and learn through observation.

Thus, both in a theoretical and a practical approach, Kernan et al. (2017 cited by Pivac et al., 2021) present Mind Mapping as an active methodology that encourages students to obtain relevant information and, once again, develop critical thinking, as it offers benefits such as learning through synthesis, as well as as the clarification of doubts and the best organization of ideas. During this process, there is a visualization and review of the theoretical/practical contents presented, enabling the student to understand their thinking process (Buran & Filyukov, 2015, cited by Pivac et al., 2021).

Several authors emphasize the importance of using active methodologies not only in theoretical and simulated practice, but also in real contexts of clinical practice, given the various benefits mentioned above (Sobral et al., 2020; Jassim et al., 2020).

Boud (2001, cited by Jassim et al., 2022) and Topping (1996, cited by Jassim et al., 2022) present an educational model, which uses as a methodology the learning carried out through collaboration between peers, and which is characterized as the interaction between people who belong to the same social group, who, not being professional tutors, have the ability to allow peer learning, while at the same time being able to learn for themselves, through the teaching they do to the other.

According to the study by Jassim et al. (2022), through this methodology, learning together, each student is able to develop

knowledge both at an individual level and at a shared level. For this interaction between the parts to be efficient, each student has the need to carry out a process of reflection, whose clinical reasoning results from critical thinking developed together with the communicational part. According to the same authors, students also reveal a greater sense of security in having a colleague available, in addition to being able to manage stressful situations either collectively or individually, not being a barrier to their work. development.

According to Koldestam et al. (2021), the MILO methodology – Model for Improvements in Outcomes – supports the active methodologies already evidenced in the context of clinical practice, identifying important factors regarding student learning during this period. MILO is composed of eight fundamental concepts that define it, four of which involve intrapersonal aspects and the remaining four encompass contextual aspects, with the aim of unifying different concepts into one, allowing for ease in the student's learning process during clinical practice (Koldestam et al., 2021).

The same article also adds that intrapersonal concepts involve characteristics and abilities of the student himself that are considered essential for his learning, namely, quality and safety, which covers person-centered care, teamwork, search for improvement of evidence-based knowledge and development of quality of care and safe care, the critical approach, which includes the development of cognitive thinking and self-awareness, the reflective approach explored based on an open questioning based on tolerance, imagination and creative thinking of both nurses advisor and student (Ekebergh, 2018; Horton-Deutsch & Sherwood, 2017) and nursing, which aims to involve co-productive care, emphasizing good communication

and relationship with the person, who must be included and active in their own care centered on them same (Sherwood & Zomorodi, 2014).

The contextual concepts, on the other hand, aim to influence and enhance an environment that facilitates the student's learning process, including the following concepts, peer learning, mentioned above; a good learning environment that can promote the student's ability to develop competence and knowledge; guiding teachers, who make it possible to organize all those involved in the learning process (Islamoska, 2014) and the concept of student centrality, insofar as their self-learning is enhanced.

Finally, MILO argues that learning depends on the combination of these eight concepts, in a meaningful and structured way that culminates in a better understanding of care and learning as parallel processes, constituting a learning model that pays attention to care in which the its essence is to unify and hermeneutically move from the part to the whole (Koldestam et al., 2021).

In addition, technology is increasingly used through mobile devices in nursing education as a complementary tool for students to build their clinical practice (Guo et al., 2016 cited by Kim & Park, 2019). The use of the mobile device allows students to easily meet their diverse information needs quickly in the clinical context; checking details before performing a certain task, reducing the psychological burden and the occurrence of medical errors (Phillippi &, Wyatt, 2011 cited by Kim & Park, 2019). For example, in the context of medication verification, client safety will increase as well as nurses' self-confidence in their performance, allowing them to make the best decisions (Kim, 2014 cited by Kim & Park, 2019).

FINAL CONSIDERATIONS

Currently, there has been a greater demand regarding the learning process on the part of Nursing students, with dissatisfaction with the traditional method, leading to a study at “own pace, without restrictions of time and space” (Chen et al, 2021, p. 478). Allied to this, the evolution of the Nursing discipline requires the adaptation of teaching itself, leading to a more modern and active learning.

In view of the analysis of all selected articles, it is concluded that active methodologies make the student co-responsible for their learning, promoting motivation and interest that consequently lead them to provide quality care, allowing students to evaluate their learning., promote a reflective attitude and the development of critical thinking, valuing experiences and experiences, generating greater security and greater ability to solve problems.

All these strategies contribute to the development of the student’s critical and reflective thinking in relation to their learning, as well as favoring their ability to make decisions. In addition, the teachers emphasize that the use of these

methodologies is positive, as they contribute to the development of communication skills, enabling the student to verbally express their experiences and real observations.

It is concluded that there are several active methodologies adopted in Nursing teaching, both in the theoretical scope, namely, interactive learning, active search, the inverted classroom, learning with music and educational games, problem-based, PBL and telenursing as in the context of simulated practice, which includes simulation using mannequins and Peyton’s Four Steps methodology, and in the context of clinical practice, as is the case of the methodology of collaboration between peers, the MILO. *Mind Mapping* is also an active methodology that can always be used whatever the context. With this, it was found that the starting question defined for this integrative review “What are the active methodologies used in the teaching process in Nursing?” has been answered. It is suggested, however, more research that allows comparing the various active methodologies in favor of what will be most beneficial for the teaching-learning process in Nursing.

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