REVIEW ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

TEACHING-LEARNING STRATEGIES FOR CLINICAL NURSING TRAINING: AN INTEGRATIVE REVIEW

ESTRATEGIAS DE ENSEÑANZA-APRENDIZAJE PARA LA FORMACIÓN CLÍNICA DE ENFERMERÍA: UNA REVISIÓN INTEGRADORA

ESTRATÉGIAS DE ENSINO-APRENDIZAGEM PARA FORMAÇÃO CLÍNICA EM ENFERMAGEM: UMA REVISÃO INTEGRATIVA

Julia Valeria de Oliveira Vargas Bitencourt[1]
Priscila Biffi[2]
Débora Cristina Morais Migliorança[3]
Juliana Baldissera Dors[4]
Kimberly Lana Franzmann[5]
Eleine Maestri[6]
Jeferson Santos Araujo[7]
Agatha Carina Leite Galvan[8]

[1]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0002-3806-2288.

[2]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0001-5476- 5840.

[3]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0003-1090-2318.

[4]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000- 0003-4862-2258.

[5]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0003-4012-2240.

[6]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0002-0409- 5102.

[7]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000- 0003-3311-8446.

[8]Universidade Federal da Fronteira Sul, Chapecó, SC, Brasil. ORCID: 0000-0003-3533-8194.

Corresponding author
Priscila Biffi
Rodovia SC 484 Km 02, Fronteira Sul, CEP 89815899, Chapecó, SC, Brazil.
Telefone: +55(49) 2049-2600.
E-mail: priscilabiffi99@gmail.com

Submission: 27-09-2022
Approval: 22-03-2023

ABSTRACT
Objective: To identify in scientific publications which teaching-learning strategies are discussed to promote the clinical training of nursing undergraduates. **Method:** This is an Integrative Literature Review (INR) based on the methodological approach proposed by Whittemore and Knafl, following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline. It was developed in five stages: 1) elaboration of the research question (identification of the problem); 2) search for primary studies; 3) evaluation of studies by inclusion and exclusion criteria; 4) analysis of data from primary studies; and 5) presentation of the review. Data collection took place from April to September 2021. **Results:** Of the 487 articles initially selected, 13 original articles were included, which met the established criteria. The articles suggest that problem-solving teaching-learning strategies and the tutor's role in the use of these strategies enhance the development of skills for clinical training. **Final Considerations:** It is concluded that the strategies used for clinical training need to be based on problematization, which requires tutors who are open to changes and advances in the way of teaching and educational institutions that stimulate the continuous process of teacher training. This gives rise to clinical expertise as an inducing model for the professionalization of nursing, which strengthens it and demonstrates the space that the profession has been achieving throughout its performance and social insertion in the field of health.
Keywords: Clinical Reasoning; Teaching; Nursing; Learning.

RESUMEN
Objetivo: Identificar en publicaciones científicas qué estrategias de enseñanza-aprendizaje son discutidas para promover la formación clínica de los estudiantes de enfermería. **Método:** Se trata de una Revisión Integrativa de Literatura (ILR) basada en el enfoque metodológico propuesto por Whittemore y Knafl, siguiendo los lineamientos de la guía Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Se desarrolló en cinco etapas: 1) elaboración de la pregunta de investigación (identificación del problema); 2) búsqueda de estudios primarios; 3) evaluación de estudios por criterios de inclusión y exclusión; 4) análisis de datos de estudios primarios; y 5) presentación de la revisión. La recolección de datos se realizó de abril a septiembre de 2021. **Resultados:** De los 487 artículos seleccionados inicialmente, se incluyeron 13 artículos originales, que cumplieron con los criterios establecidos. Los artículos sugieren que las estrategias de enseñanza-aprendizaje de resolución de problemas y el papel del tutor en el uso de estas estrategias favorecen el desarrollo de habilidades para la formación clínica. **Consideraciones Finales:** Se concluye que las estrategias utilizadas para la formación clínica necesitan estar basadas en la problematización, lo que requiere de tutores abiertos a los cambios y avances en la forma de enseñar e instituciones educativas que estimulen el proceso continuo de formación docente. Esto da lugar a la pericia clínica como modelo inductor de la profesionalización de la enfermería, que la fortalece y demuestra el espacio que la profesión ha ido conquistando a lo largo de su desempeño e inserción social en el campo de la salud.
Palabras clave: Razonamiento Clínico; Enseñanza; Enfermería; Aprendizaje.

RESUMO
Objetivo: Identificar em publicações científicas quais estratégias de ensino aprendizagem são discutidas para fomentar a formação clínica do graduando em enfermagem. **Método:** Trata-se de uma Revisão Integrativa de Literatura (RIL) fundamentada na abordagem metodológica proposta por Whittemore e Knafl, seguindo as diretrizes do guideline Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Desenvolveu-se em cinco etapas: 1) elaboração da questão de pesquisa (identificação do problema); 2) busca por estudos primários; 3) avaliação dos estudos pelos critérios de inclusão e exclusão; 4) análise dos dados dos estudos primários; e 5) apresentação da revisão. A coleta de dados ocorreu de abril a setembro de 2021. **Resultados:** Dos 487 artigos inicialmente selecionados foram incluídos 13 artigos originais, que atenderam aos critérios estabelecidos. Os artigos sugerem que as estratégias de ensino-aprendizagens problematizadoras e a atuação do tutor no uso dessas estratégias potencializam o desenvolvimento de competências para a formação clínica. **Considerações Finais:** Conclui-se que as estratégias utilizadas para formação clínica precisam estar alicerçadas na problematização, o que requer tutores abertos a mudanças e avanços no modo de ensinar e instituições de ensino que estimulem o processo contínuo de formação docente. Enseja-se, assim, a expertise clínica como modelo indutor para a profissionalização da enfermagem, que a fortalece e demonstra o espaço que a profissão vem alcançando ao longo de sua atuação e inserção social no campo da saúde.
Palavras-chave: Raciocínio Clínico; Ensino; Enfermagem; Aprendizagem.

REVISTA ENFERMAGEM ATUAL IN DERME

INTRODUCTION

The applicability of an efficient nursing care to the patient comes from an accurate analysis of clinical data and the decisions taken by the professional. Interventions arising from clinical reasoning constituted in the health care scenario, guide decision-making, making it possible to make an appropriate choice for the situation/behavior, with alternatives, intentions and approximations of the expected result, with factors such as the day-to-day practice, theoretical-practical knowledge, ability to judge and correlate, quick thinking and also the common sense of the working professional [1,2].

Clinical reasoning provides safe and effective care, but there are still challenges in the use of teaching strategies that promote the learning and development of this skill, as nurses need to conceive, judge, reason and organize their thinking process. Given this, stimulating clinical reasoning, from the beginning of academic activities, contributes to having generations with greater performance in essential skills for professional decisions [3].

This situation requires innovative teaching-learning methodologies combined with the promotion of a facilitating environment in the classroom that contextualize clinical practices, contributing to the nursing student being able to make clinical decisions, facilitating the identification, prioritization, establishment of care plans and data analysis. Nowadays, it is recognized that the preparation of students in simulated activities is of fundamental importance, aiming at the development of specific skills and self-confidence, which are stimulated during the proposed teaching-learning activities, so that when mastery of these skills is demonstrated are developed in humans [4].

Moreover, in the design of clinical training for nursing students, professors must use multiple strategies, since each learner is unique and uses different models of analysis and synthesis [3]. The training of teachers in the face of new teaching methods, scenarios and differentiated techniques becomes necessary so that they are able to contribute to the development of critical thinking and students' skills. In this context, the interaction between teacher and student is added to the teaching-learning process, since, through the exchange of knowledge, learning and experiences, one can influence the stimulation of critical thinking and professional reflections [5].

In view of the above, the objective of this article is to identify in scientific publications which teaching-learning strategies are discussed to foster the clinical training of undergraduate nursing students.

METHODS

This is an Integrative Literature Review (RIL), based on the methodological approach proposed by Whittemore and Knafl [6], following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [7] guideline. This type of research aims to trace an investigation into the knowledge already developed in previous studies on a topic, based on syntheses of publications in journals,

REVISTA ENFERMAGEM ATUAL IN DERME

thus generating new visions and perceptions of the researched subject, it was developed in five stages: 1) elaboration of the research question (problem identification); 2) search for primary studies; 3) evaluation of studies according to inclusion and exclusion criteria; 4) analysis of data from primary studies; and 5) presentation of the review [6].

The guiding question using the Population Interest Context (PICo) [8] strategy was: nursing undergraduates (P - population), teaching-learning strategies linked or not to the Nursing Process (NP) (I - phenomenon of interest), clinical training in undergraduate nursing (Co - context). In this bias, the following question was elaborated: What teaching/learning strategies have been developed for clinical training in undergraduate nursing?

It is explained that in the phenomenon of interest of the PICo strategy, it was decided to include the NP considering that it is a worldwide consensus methodology to guide the clinical evaluation for nursing care. Therefore, it is interesting to know studies that structure models of clinical training in the NP scenario, precisely because there is an interface between both [9].

Data collection took place from April to September 2021, in the following databases: MEDLINE/PubMed (Science Direct and US National Library of Medicine), Scopus, Web of Science, Latin American and Caribbean Literature in Health Sciences (LILACS), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Database in Nursing – Brazilian Bibliography (BDENF).

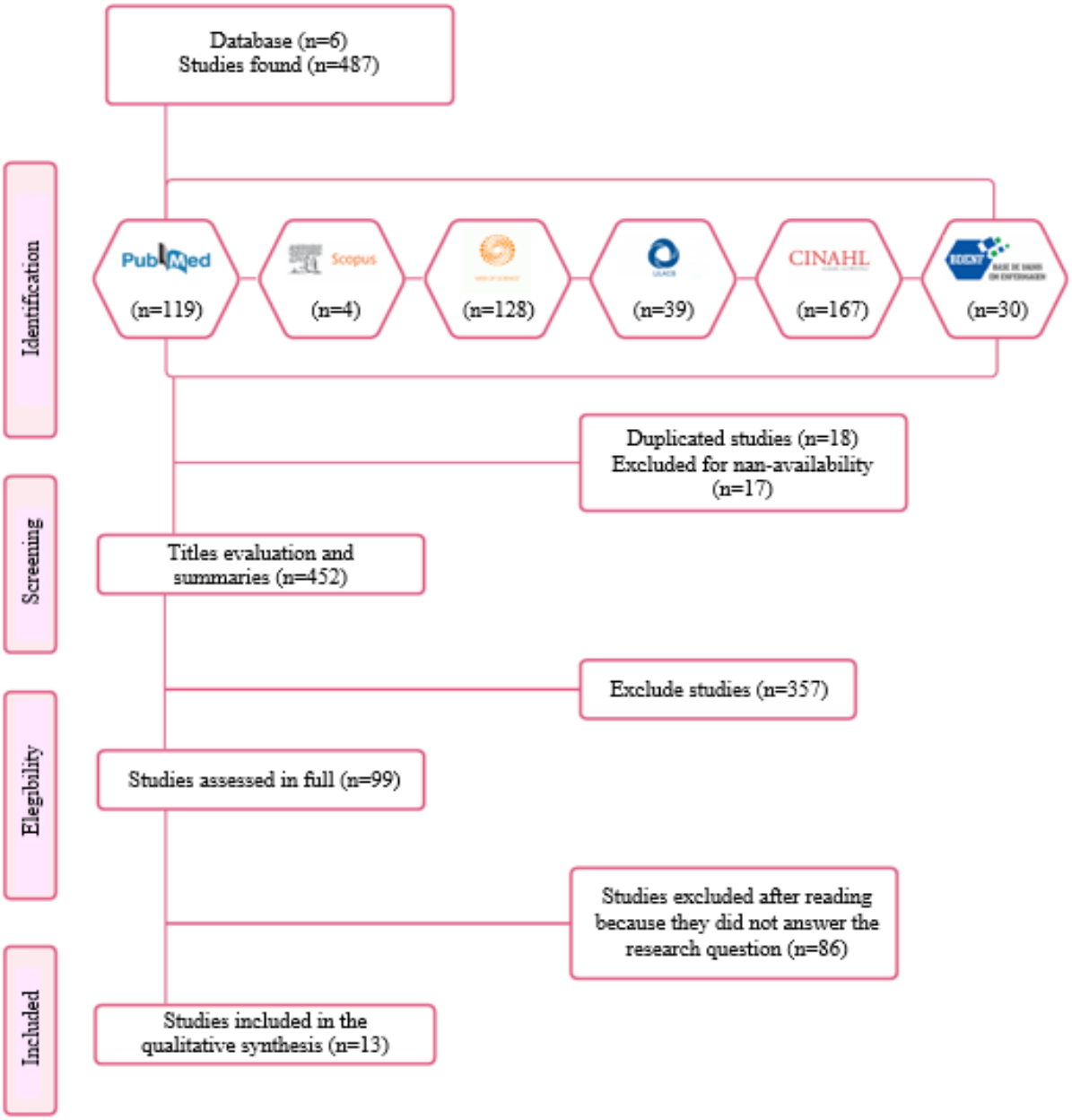
Used "nursing process and clinical judgment" or "reasoning clinical and teaching", as Descriptors in Health Sciences (MeSH - Medical Subject Headings) and the Boolean operators AND and OR, this used to perform the combination of descriptors. The time frame comprised the period from 2011 to 2021.

For inclusion criteria, studies were validated that addressed the subject of clinical training with undergraduates in Nursing, whose discussion encompassed teaching-learning strategies of judgment and/or clinical reasoning, including or not the NP.

The research began by translating and reading the abstracts. Then, it was read in full, seeking to identify whether the objective fit with the proposal designed for RIL, after which those that fit the scope of the research were selected. The flowchart shown below describes the article selection process (Figure 1).

REVISTA ENFERMAGEM ATUAL IN DERME

Figure 1 - Flowchart of article selection for RIL, prepared based on the PRISMA recommendation, 2020.



Source: Moher et al. (2009), adapted by the authors.

RESULTS

This Integrative Literature Review (RIL) included 13 original articles that met the established criteria. The summary of the evaluated scientific production is distributed in Table 1.

REVISTA ENFERMAGEM ATUAL IN DERME

Chart 1 - Characterization and main results of the articles included in the integrative review, Brazil, 2021.

Author/Year/Country	Title	Aim/Outline	Main Results/Conclusions
Blanié A, Amorim MA; Benhamou D. 2020 France[10]	Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students.	To compare the respective educational value of game simulation and traditional teaching method to improve clinical reasoning skills needed to detect patient deterioration. Prospective multicenter study. Randomized clinical trial.	100% of the students stated that their knowledge about the different stages of the clinical reasoning process increased, however there was no significant difference in the self-assessment of clinical reasoning between the groups (games and "paper cases"). Satisfaction and motivation were increased in simulation by games than in "paper case".
Ibáñez-Alfonso LE, Fajardo-Peña MT, Cardozo-Ortiz, CE, Roa-Díaz, ZM. 2020 Colombia[11]	Sick care plans for undergraduate students: comparison of two models.	To compare two models of application of nursing processes (generation 2 and generation 3 - Outcome Present State Test OPT), in the elaboration of care plans by nursing students at a higher education institution in Bucaramanga	The OPT generation 3 model was better evaluated in terms of: clinical reasoning, determination of the essence of the case, diagnostic support and identification of the nursing diagnosis, as

		(Colombia). Cross-sectional study (quantitative).	well as being preferred as a guide for the treatment of clinical cases. In the specificities, we obtained: context of the person and past experience about 50% perceived equality between the models and did not find differences in the theoretical articulation and in the application of the NIC and NOC languages.
Rosa MEC, Pereira-Ávila FMV, Góes FGB, Pereira-Caldeira NMV, Sousa LRM, Goulart MCL. 2020 Brazil[12]	Positive and negative aspects of clinical simulation in nursing education.	To describe the positive and negative aspects of clinical simulation in nursing education from the perspective of undergraduates. Descriptive cross-sectional study (qualitative).	It was evidenced in the study that without a previous simulation, the undergraduates do not know what to do in real practice with the patient. It is possible to work on nervousness, through the simulation of dialogues with the dummy, it improves the safety and quality of real care, in the association between theory and practice and in the development and exercise of critical thinking. As a negative

			aspect, nervousness was evident in those who are on stage, as they are acting in front of their colleagues and teachers, which makes the teaching-learning process difficult.
Padilha JM, Machado PP, Ribeiro A, Ramos J, Costa P. 2019 Portugal[13]	Clinical Virtual Simulation in Nursing Education: Randomized Controlled Trial.	Evaluate the effect of virtual clinical simulation in relation to knowledge retention, clinical reasoning, self-efficacy and satisfaction with the learning experience of nursing students. Randomized clinical trial. Prospective and analytical study.	The experimental group made more significant improvements in knowledge and clinical reasoning (20.4%) after the intervention and 2 months later. The group also showed higher levels of satisfaction with learning. There were no statistical differences in perceptions of self-efficacy between groups.
Fernandes AKC, Ribeiro LM, Brasil GC, Magro MCS, Hermann PRS, Ponce de Leon CGRM, et al. 2016	Simulation as a strategy for learning in pediatrics.	To evaluate the use of clinical simulation in Pediatrics as a learning strategy for students of the Nursing course at Faculdade de Ceilândia. Descriptive cross-sectional study (quantitative).	There was strong agreement (53.2%) that the realistic simulation was productive. 42.6% agreed that it was possible to put theoretical knowledge into practice. Self-confidence was

Brazil[14]			developed for 68.1% and the introduction of simulation in the discipline's class schedule was encouraged, as a way to increase self-confidence. 70.2% would recommend the practice of simulation to other students.
Johnsen HM, Fossum M, Vivekananda-Schmidt P, Fruhling A, Slettebo A. 2016 Norway[15]	A Serious Game for Teaching Nursing Students Clinical Reasoning and Decision-Making Skills	To design and test a serious game to teach nursing students clinical reasoning and decision-making skills in the care of patients with chronic obstructive pulmonary disease. Qualitative study.	Serious play was perceived as realistic, clinically relevant and easy to learn. However, there were problems in its usability, due to its functionality and user-computer interface, among the problems identified were the lack of demonstration of how to use embedded links and solve drag and drop tasks, desired functionality to visualize both right and wrong answers and a limited range of navigation options to go back and forth in the game.

Trevisani M, Cohrs CR, Soares MAL, Duarte JM4 Mancini F, Pisa IT, Domenico EBL. 2016 Brazil[16]	Evaluation of Learning in Oncology of Undergraduate Nursing with the Use of Concept Mapping	To identify whether the use of the concept mapping (CM) strategy helps students to expand and revise their knowledge in oncology and to analyze the skills developed in moving from theoretical to practical knowledge. Descriptive and qualitative study.	It was evident that the CM facilitated the construction of clinical reasoning and the development of skills such as autonomy and security. In the correlation of the MC with the real practice, 75% of the students mentioned the MC resolution similar to the real context. 35% reported learning difficulties with the use of the proposed active methodology, while 65% cite motivation for using the active methodology.
Kim JY, Kim EJ. 2015 South Korea[17]	Effects of Simulation on Nursing Students' Knowledge, Clinical Reasoning, and Self-confidence: A Quasi-experimental Study	To assess the effects of adding a unique simulation experience to the didactic curriculum on nursing students' acquisition of knowledge, clinical reasoning skills, and self-confidence. Quasi-experimental study.	Students in the simulation group demonstrated greater clinical reasoning ability and knowledge than those in the didactic class group. With regard to self-confidence, no difference was evidenced.

Gonzol K, Newby C. 2013 United States[18]	Facilitating Clinical Reasoning in the Skills Laboratory: Reasoning Model Versus Nursing Process-Based Skills Checklist.	To determine whether applying the IRUEPIC (Identify, Relate, Understand, Explain, Predict, Influence, Control) reasoning model when teaching psychomotor skills was more effective than the Nursing Process-based skills checklist method in facilitating reasoning of the student. Quasi-experimental study.	Intellectual performance in all components of the IRUEPIC reasoning model were significantly higher when compared to the group of skills based on the Nursing Process. Furthermore, the study addresses that psychomotor skills can also be taught with the model and clinical reasoning can be improved with it.
Hidalgo-Rivera JL, Cárdenas-Jiménez M, Rodríguez-Jiménez S. 2013 Mexico[19]	El tutor clínico. Una mirada de los estudiantes de Licenciatura de Enfermería y Obstetricia.	To analyze the performance of the clinical tutor based on the perception of participating tutors, in the application of a Reflective Clinical Tutoring Model. Descriptive cross-sectional study (qualitative).	Communication carried out with respect and cooperation were favorable during tutoring. It was evidenced that the interest in the supervised practice is high, as well as the proposals of learning strategies, the incentive to the autonomous learning, the constant advice, the availability to solve doubts, the transmission of professional

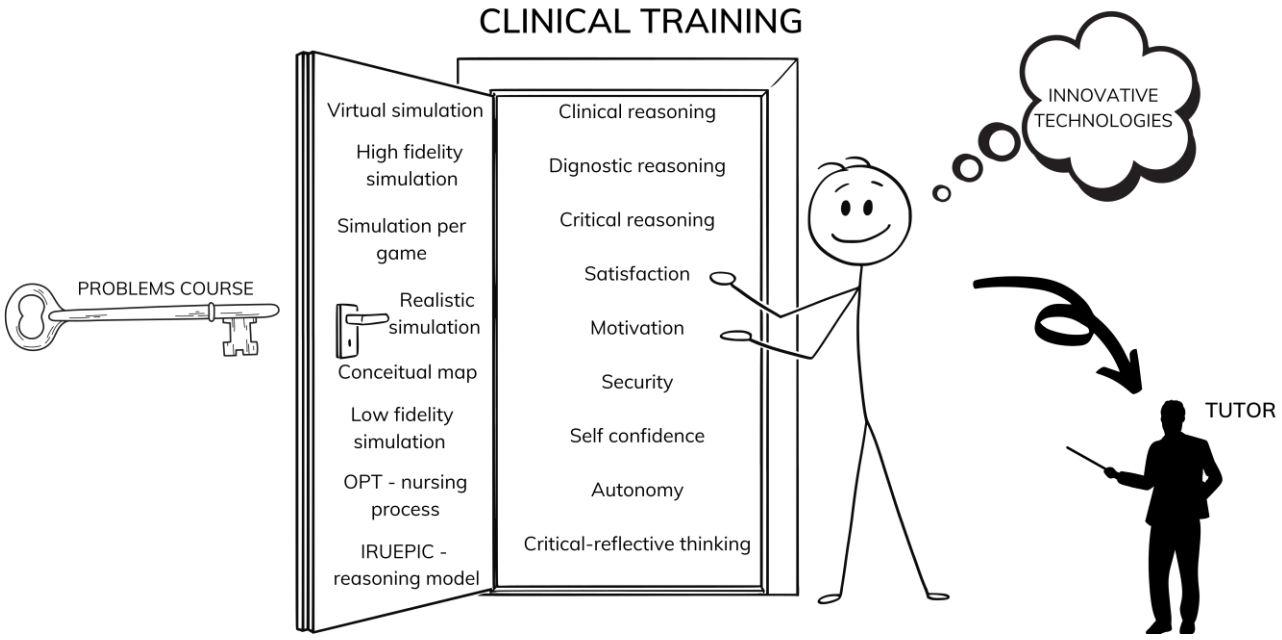
			experiences, it improves the confidence and stimulates the will in learn. However, there is a lower frequency in the promotion and integration of group work, which interferes with the learning process.
Moura ECC, Caliri ML. 2013 Brazil[20]	Simulation for the development of clinical competence in assessing risk for pressure ulcers.	To analyze the perception of undergraduate nursing students about the simulation strategy in the teaching-learning process for the development of competence in risk assessment for pressure ulcers. Descriptive study.	The simulation enabled the development of critical-reflective thinking, as well as the development of the ability to assess risk for pressure ulcers, promoting a positive self-image, satisfaction, articulation of knowledge and skills, resulting in confident and safe attitudes for the professional nurse.
Yang H, Thompson C, Hamm RM, Bland M, Foster A. 2013 United	The effect of improving task representativeness on capturing nurses' risk assessment judgements: a comparison of written case	To test the hypothesis that high-fidelity simulations - realistically simulating naturally occurring clinical information - can generate more realistic nursing judgments than paper cases.	Participants performed significantly less in the simulation judgment than in the paper case judgment, i.e., they assessed patient risk less accurately in high-fidelity simulations than

Kingdom[21]	simulations and physical simulations.	Quantitative study.	when judging the paper cases. The researchers believe that this is due to the fact that the individuals perceived less the clues offered in the simulated patient, that is, they made more precise use of the information on the paper case.
Roux LZL, Khanyile TD. 2012 South Afrika[22]	A cross-sectional survey to compare the competence of learners registered for the Baccalaureus Curationis programme using different learning approaches at the University of the Western Cape.	Compare the extent to which the different teaching approaches applied in the degree program (Baccalaureus Curationis) adequately prepare graduate students for professional competence. Cross-sectional study, based on descriptive research (quantitative).	First-year students were exposed to teaching approaches based on clinical cases and demonstrate more self-perceived competence than students from later years who were submitted to a traditional teaching model (without problematization). However, for the 3rd year students, there was a greater exposure to the real environment of the health service, which gave them a feeling of greater clinical competence. Furthermore, it was seen that the case-based

			clinical reasoning approach to learning, which was implemented in the school in question, promotes competence and self-confidence in students, in addition to increasing their sense of responsibility to be actively involved in their own learning.

The figure below (Figure 2) summarizes what the articles in this RIL discuss about clinical training, that is, that teaching strategies are problematizing aimed at developing skills, as well as valuing the role of the tutor in the use of these strategies.

Figure 2 - Clinical training.



Source: Authors, 2021.

DISCUSSION

Clinical training for nursing consists of an essential construct for the practice of care, thus, verifying its priority to achieve excellence

REVISTA ENFERMAGEM ATUAL IN DERME

is justified, and the articles in this RIL show the relevance of questioning so that the student experiences this knowledge in a significant way.

Discussing the clinical condition of patients awakens in students an interest in seeking solutions, as well as seeking to overcome a linear and limiting teaching model, present in traditional education. This activity is, therefore, an active methodology that uses innovative tools with the aim of preparing the professional to act in an active, reflective, creative, helpful and social way, with skills to understand and modify their reality according to the experienced need [23]. Considering problematization, intervention models such as Problem-Based Learning (APB) and Problem-posing Methodology emerge, which, despite being different theoretical concepts, address problems related to the development of the teaching-learning process [24].

Therefore, based on the assumption that to train nurses with clinical aptitude it is a “sine qua non” condition to problematize teaching, research production was evidenced that point to simulation as a path to be considered.

Clinical simulation is an innovative pedagogical method that tends to increase the assimilation of information in the teaching-learning process. safety and precision at work, improving nursing care [25,26]. With the objective of qualifying nursing professionals for this practice, it is necessary to carry out training, which allows them to remove insecurities by working on their weaknesses without fear of making mistakes and causing harm to the patient [25].

It is noteworthy that the simulation has as a strong point the stimulation of the student's self-confidence, therefore, a competence developed in this clinical teaching methodology. Practicing the simulation through games and/or virtually had a motivating effect as it promoted satisfaction. On the other hand, although these are favorable findings for the use of simulation, it is still worth mentioning that the studies did not show significant results regarding the development of theoretical knowledge applied to practice when students are asked to think clinically, to prioritize clinical demands, in short, produce clinical reasoning. Thus, in the studies when comparing the use of a “paper case” (clinical case) and simulation, this cognitive competence did not show relevant development, and at least the result was similar.

However, other research reinforces that simulation is a pedagogical tool that allows students to develop skills, combining theoretical and practical knowledge, favoring the strengthening of skills and facing challenging situations in a safe environment where there is the possibility of making mistakes without causing harm to the patient, visualize the error and seek new learning opportunities to correct them, thus allowing to improve clinical skills [27,28].

It is considered, however, that in the scenario of the simulation, the student is faced with a series of information that are typical of the real environment of patient care. In the

REVISTA ENFERMAGEM ATUAL IN DERME

"paper cases", their attention is focused exclusively on the clinical condition that is described in the record presented to them, and this complexity, inherent to the simulation, increases the cognitive demands required. Therefore, it is possible that the development of clinical reasoning between "paper cases" and simulations, whose expectation of overcoming a traditional model of problematization does not materialize precisely because, in reality, the student will be exposed to a density of elements which absorb their attention. in order to analyze the context in its entirety.

In the meantime, it is discussed that simulation is an innovative teaching strategy that has been gaining ground in the training of nursing students, however, for the contributions of this practice to be effective, it is essential that tutors are able to conduct the scenes in accordance with the objectives to be achieved and with the participating public [29]. For this, simulations must be supported by organized and systematized tools and must be planned as a project, with planning, testing, implementation and evaluation in its stages. Studies indicate that, when this teaching strategy is well planned, the level of confidence increases, improves skills, communication, relationships and the development of judgment and clinical reasoning [29,30].

And in this bias, the establishment of self-confidence in a positive way in the comparison between both strategies is justified, since the student is having the opportunity to experience a "real" situation in the simulation without being effectively in front of the patient. making it possible to detect the numerous variables intertwined with patient care, providing you with security when you finally arrive at the actual service. Therefore, problematizing, through simulation, requires student preparation for the perception of the environment that makes up the reality of health services, as well as teaching support, providing necessary explanations for introducing students to the simulator scenario.

In this sense, it is reflected that any and all problematizing educational technology with an innovative character needs a structure that first puts the student in a position to know the proposal, to overcome the natural estrangement to new learning resources, so that after this phase, if prudently define the right moment to analyze in the context of learning the impact of the strategy on clinical reasoning. And, aiming to illustrate, two articles found in this RIL were emblematic in this regard, the first of them the authors proposed a strategy using the virtual game tool and the other the conceptual map, in both it was clear the difficulty of the student regarding the understanding of the use of the tool itself, harming the potential result of the learning inherent in the proposal.

Therefore, the tutor's role in this process is debated again, thus, the evidence of the review elucidates that he needs to build learning conditions with the students, which enable the understanding of the tool whose ultimate objective is clinical improvement. So, if the tutor

REVISTA ENFERMAGEM ATUAL IN DERME

proposes a strategy for clinical, problematizing and innovative training without considering these phases, it tends to unsatisfactory results. Therefore, it is necessary to delimit the learning method with the students, from its organizational structure, the variables involved in the process, the necessary resources and its operation, the environment, be it virtual or physical.

Tutors are crucial for the implementation of innovative pedagogical practices and for teaching planning with active methodologies, as they assume the role of facilitators, becoming a reference in the learning process. Nevertheless, educational methodologies in health should allow students and tutors to actively participate in teaching in practical settings, therefore, it is necessary to continuously analyze teaching skills, so that there is constant improvement in student education and development of the tutor's practices [31].

Also, the tutor's attitude towards the process also translates into the results, so communication is relevant, requiring respect and acceptance, making the learning space rewarding. Authors point out that for greater student engagement with teaching strategies and with the tutor, an emotionally conducive environment is necessary, to avoid feelings that may eventually blur the student's focus, such as anxiety and nervousness [32].

Next, in the sample of this review, two studies are discussed presenting innovative strategies for clinical training in interface with the Nursing Process (NP) methodology, both using validated and structured models whose purpose is the development of clinical reasoning, the example of OPT and IRUEPIC. The OPT clinical reasoning model is based on the definition of a priority nursing diagnosis. It is a tool that helps nurses to recognize all the nursing care needs that a patient may have, and in this sense, with the help of clinical reasoning, it is possible to reflect on the connection of one diagnosis to another and their influence on each other, and thus establish which nursing diagnosis is the most influential, being it the priority. This reasoning model is carried out through problem solving, listing diagnoses focused on the problem and risk diagnoses [33]. On the other hand, the IRUEPIC model seeks to follow the evolution of the student's clinical improvement by analyzing the ability that he/she has to: Identify, Relate, Understand, Explain, Predict, Influence and Control, in the face of a health situation, the care context [18].

However, in the use of models that guide clinical reasoning, it is noted that these initiatives are fruitful, because in addition to appropriating problematization as a teaching-learning method, they also gather the evaluation of variables that are structured with the purpose of capturing the development attributes essential to the improvement of clinical reasoning.

Obviously, in the face of an apparatus of strategies that aim to improve the clinical performance of the professional nurse, it is important to evaluate in students the development of clinical reasoning for an accurate practice, thus, studies present models of

REVISTA ENFERMAGEM ATUAL IN DERME

evaluation of this activity, as an example the Lasater Clinical Judgment Rubric and the Script Agreement Test [16].

The Lasater Clinical Judgment Rubric is an observational assessment tool for the development trajectory of nursing students' clinical judgment. This tool has eleven dimensions, distributed in the four stages of the clinical judgment model, where students can be classified according to their behavior in each dimension. First phase: Recognition, three dimensions: focused observation; recognition of deviations from expected standards; search for information. Second phase: Interpretation, two dimensions: data prioritization and data interpretation. Third phase: Response, four dimensions: calm and confident demeanor; clear communication; well-planned and flexible intervention; and technical skill. Fourth phase: Reflection, two dimensions: evaluation and self-analysis; and commitment to improving performance. This tool classifies the student as exemplary, proficient, in development or beginner. This assessment of the clinical reasoning process can be performed either by the tutor or by the student's self-assessment [3,34].

Another instrument used in the process of evaluating clinical reasoning is the Script Agreement Test, which is a tool based on the Cognitive Psychology Script Theory, this theory states that, when health professionals are faced with clinical problems, they mobilize sets of knowledge (scripts) to understand the situation and make clinical decisions. This tool is based on the written presentation of clinical cases, with diagnostic and/or therapeutic decision-making options, after the presentation of new information. The answers are presented in the format of a Likert-type scale, reflecting the variability presented by the student in a clinical reasoning process [3,34].

It is clear, therefore, the relevance of establishing an evaluation process in which the student's clinical improvement and the tutor's training demand are highlighted in a context of problematization of clinical practice, which requires tutors who are open to changes and advances in the way of teaching and teaching institutions that encourage the continuous process of teacher training.

FINAL CONSIDERATIONS

It was identified through this review that the demand for clinical training in nursing has been the object of study at the present time, strategies are researched regarding their effectiveness in the development of clinical reasoning. Problematization was found as a teaching-learning proposal in all of the sample studies, highlighting clinical simulation as prevalent and how much this strategy deserves attention in terms of its potential, as well as its limitations, in case it is not understood exactly its process, as far as assertively detecting which clinical skills can be improved with this tool. The role of the tutor was substantially valued, since the success of using a problematizing and innovative strategy requires teacher training that involves the conception of the strategy, its application and evaluation. As for the discussion

REVISTA ENFERMAGEM ATUAL IN DERME

of clinical improvement based on the NP methodology, only two studies used this approach, which raises reflections on the need to expand the scope of clinical discussions that promote this interface, which could jointly improve professional clinical performance in the field. use of the methodology. This gives rise to clinical expertise as an inducing model for the professionalization of nursing, which strengthens it and demonstrates the space that the profession has been reaching throughout its activities and social insertion in the field of health.

REFERENCES

1. Frota MA, Wermelinger MCMW, Vieira LJES, Ximenes Neto FRG, Queiroz RSM, Amorim RF. Mapeando a formação do enfermeiro no Brasil: desafios para atuação em cenários complexos e globalizados. Ciência & Saúde Coletiva. [Internet]. 2020 [cited 2021 Maio 10];25(1):25-35. Available from: https://www.scielo.br/j/csc/a/Bxhbs99CZ8QgZN9QCnJZTPr/?lang=pt

2. Faria G, Carvalho AA, Semczyszym VSS, Nogueira S, Bianqui LC, Pereira EA, Souza FLS, Romanha LM. Raciocínio clínico em enfermagem: uma revisão bibliográfica. Saber Científico. [Internet]. 2020 [cited 2021 Maio 10];9(2):73-84. Available from: http://revista.saolucas.edu.br/index.php/resc/article/view/1305/pdf

3. Carvalho EC, Oliveira-Kumakura ARS, Morais SCRV. Raciocínio clínico em enfermagem: estratégias de ensino e instrumentos de avaliação. Rev Bras Enferm. [Internet]. 2017 [cited 2021 Maio 10];70(3):662-8. Available from: https://www.scielo.br/j/reben/a/dDyzC3GnxfnDrNy4rDFRCnp/?format=pdf&lang=pt

4. Antunes M, Bez M, Perry G, Carvalho MJS. Raciocínio clínico do estudante de Enfermagem: análise a partir de um simulador virtual. Rev Novas Tecnologias na Educação. [Internet]. 2020 [cited 2021 Maio 12];18(2):306-315. Available from: https://seer.ufrgs.br/renote/article/view/110243/60021

5. Freitas CMA. Simulação realística no ensino da enfermagem: desafios e estratégias para a aplicação efetiva. Fortaleza. Dissertação [Mestre em Ensino em Saúde] - Centro Universitário Unichristus; 2019.

6. Whittemore R, Knafl K. The integrative review: updated methodology. Leading global nursing research. [Internet]. 2005 [cited 2021 Maio 12];52(5):546-553. Available from: https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2648.2005.03621.x

7. Equator network. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. 2020.

8. Aromataris E, Munn Z, editors. JBI Manual for Evidence Synthesis. [monografia na Internet]. JBI; 2020 [cited 2021 Maio 12]. Available from: https://synthesismanual.jbi.global

9. Dias LB, Duran ECM. Atitudes dos enfermeiros frente ao Processo de Enfermagem de um hospital público: estudo descritivo. Rev enferm UERJ. [Internet]. 2018 [cited Maio 13];26:e26412. Available from: https://www.e-publicacoes.uerj.br/index.php/enfermagemuerj/article/view/26412/27760

10. Blanié A, Amorim MA, Benhamou D. Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students. BMC Medical Education. [Internet]. 2020 [cited 2021 Maio 18];20(53). Available from: https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-020-1939-6

11. Ibáñez-Alfonso LE; Fajardo-Peña MT, Cardozo-Ortiz CE, Roa-Díaz ZM. Nursing care plans of undergraduate students: Comparison of two models. Rev. Univ. Ind. Santander. [Internet]. 2020 [cited 2021 Maio 18];52(1):33-40. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1092271

12. Rosa MEC, Pereira-Ávila FMV, Góes FGB, Pereira-Caldeira NMV, Sousa LRM, Goulart

MCL. Aspectos positivos e negativos da simulação clínica no ensino de enfermagem. Esc Anna Nery. [Internet]. 2020 [cited 2021 Maio 18];24(3):e20190353. Available from: https://www.scielo.br/j/ean/a/wB9NcpWs3gnkgLm5JrjZ7zk/?format=pdf&lang=pt

13. Padilha JM, Machado PP, Ribeiro A, Ramos J, Costa P. Clinical Virtual Simulation in Nursing Education: Randomized Controlled Trial. J Med Internet Res. [Internet]. 2019 [cited 2021 Maio 18];21(3):e11529. Available from: https://www.jmir.org/2019/3/e11529/

14. Fernandes AKC, Ribeiro LM, Brasil GC, Magro MCS, Hermann PRS, Ponce de Leon CGRM, Viduedo AFS, Funghetto SS. Simulation as a strategy for learning in pediatrics. Rev. Min. Enferm. [Internet]. 2016 [cited 2021 Maio 18];20:1-8. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-835283

15. Johnsen HM, Fossum M, Vivekananda-Schmidt P, Fruhling A, Slettebo A. A Serious Game for Teaching Nursing Students Clinical Reasoning and Decision-Making Skills. IOS Press Ebooks. [Internet]. 2016 [cited 2021 Jun 04];225:905-906. Available from: https://ebooks.iospress.nl/publication/43247

16. Trevisani M, Cohrs CR, Soares MAL, Duarte JM, Mancini F, Pisa IT, Domenico EBL. Evaluation of Learning in Oncology of Undergraduate Nursing with the Use of Concept Mapping. Journal of Cancer Education. [Internet]. 2016 [cited 2021 Jun 05];31. Available from: https://www.semanticscholar.org/paper/Evaluation-of-Learning-in-Oncology-of-Undergraduate-Trevisani-Cohrs/9ac9d099ad89aaaef7ffb64eb0196853a95503e3

17. Kim JY, Kim EJ. Effects of Simulation on Nursing Students' Knowledge, Clinical Reasoning, and Self-confidence: A Quasi-experimental Study. Korean J Adult Nurs. [Internet]. 2015 [cited 2021 Jun 05];27(5):604-611. Available from: https://kjan.or.kr/pdf/10.7475/kjan.2015.27.5.604

18. Gonzol K, Newby C. Facilitating Clinical Reasoning in the Skills Laboratory: Reasoning Model Versus Nursing Process-Based Skills Checklist. Nursing Education Perspective. [Internet]. 2013 [cited 2021 Jun 08];34:265-267. Available from: https://www.semanticscholar.org/paper/Facilitating-Clinical-Reasoning-in-the-Skills-Model-Gonzol-Newby/2dc8aa31cbc4fd283c72d9ceccf49c7b15cff701

19. Hidalgo-Rivera JL, Cárdenas-Jiménez M, Rodríguez-Jiménez S. El tutor clínico: Una mirada de los estudiantes de Licenciatura de Enfermería y Obstetricia. Enferm. univ. [Internet]. 2013 [cited 2021 Jul 02];10(3):92-97. Available from: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-70632013000300004&lng=es.

20. Moura ECC, Caliri ML. Simulação para desenvolvimento da competência clínica de avaliação de risco para úlcera por pressão. Acta Paul Enferm. [Internet]. 2013 [cited 2021 Jun 08];26(4):369-75. Available from: https://www.redalyc.org/pdf/3070/307028850011.pdf

21. Yang H, Thompson C, Hamm RM, Bland M, Foster A. The effect of improving task representativeness on capturing nurses' risk assessment judgements: a comparison of written case simulations and physical simulations. BMC Med Inform Decis Mak. [Internet]. 2013 [cited 2021 Jun 10];13(62). Available from: https://bmcmedinformdecismak.biomedcentral.com/articles/10.1186/1472-6947-13-62

22. Roux LZL, Khanyile TD. A cross-sectional survey to compare the competence of learners registered for the Baccalaureus Curationis programme using different learning approaches at the University of the Western Cape. Curationis. [Internet]. 2012 [cited 2021 Jun 10];34(1). Available from: https://curationis.org.za/index.php/curationis/article/view/53/25

23. Rios DRDS, Caputo MC. Para além da formação tradicional em saúde: experiência de Educação Popular em Saúde na formação médica. Revista Brasileira de Educação Médica. [Internet]. 2019 [cited 2021 Jun 23];43(3):184-195. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S010055022019000300184&lng=en&nr

m=iso.

24. Duminelli MV, Redivo TS, Bardini C, Yamaguchi CK. Metodologias ativas e a inovação na aprendizagem no ensino superior. Brazilian Journal of Development. [Internet]. 2019 [cited 2021 Jun 24];5(4):3965-3980. Available from: https://www.brazilianjournals.com/index.php/BRJD/article/view/1570

25. Mesquita HCT, Santana BS, Magro MCDAS. Efeito da simulação realística combinada à teoria na autoconfiança e satisfação de profissionais de enfermagem. Escola Anna Nery. [Internet]. 2019 [cited 2021 Jul 15];23(1). Available from: https://www.scielo.br/j/ean/a/z36P4FnBxmkXtXGL7VT6DxD/abstract/?lang=pt

26. Couto MC, Oliveira WJ, Migueis GS. Realistic simulation as a teaching and learning strategy for nursing teams in the hospital setting - an experience report. Arch. Health [Internet]. 2021 [cited 2021 Jul. 21];2(4):1010-3. Available from: https://latinamericanpublicacoes.com.br/ojs/index.php/ah/article/view/549

27. Orjuela DV, Osses MH. Percepción de la simulación clínica como estrategia de enseñanza para el desarrollo de competencias transversales en terapia ocupacional. Cad. Bras. Ter. Ocup. [Internet]. 2021 [cited 2021 Jul 23];29. Available from: https://www.scielo.br/j/cadbto/a/YgZQ7bbBRTzmj8SdzFr69sq/abstract/?lang=pt

28. Zambrano SG, Montesdeoca CL, Morales LT, Tarupi MW. Percepção de estudantes de medicina sobre o uso de pacientes simulados como estratégia de treinamento no manejo integral de pacientes. Medical Education. [Internet]. 2018 [cited 2021 Jul 27];21(2):123-126. Available from: https://www.sciencedirect.com/science/article/pii/S1575181318302547?via%3Dihub

29. Bortolato-Major C, Arhur JP, Silva ATM, Mantovani MF, Vinícius J, Felix JVC, Boostel R. Contribuições da simulação para estudantes de graduação em enfermagem. Rev Enferm UFPE Online. [Internet]. 2018 [cited 2021 Ago 03];12(6):1751-62. Available from: https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/230633

30. Carvalho LR, Zem-Mascarenhas SH. Construction and validation of a sepsis simulation scenario: a methodological study. Rev Esc Enferm USP. [Internet]. 2020 [cited 2021 Ago 04];54:e03638. Available from: https://www.scielo.br/j/reeusp/a/JYgrqvdNHN3YT8Mys86SZfx/?lang=pt&format=pdf

31. Gaspar FDR, Abbad GS, Lima MN. Importância das habilidades de ensino em saúde atribuída por estudantes e professores universitários. Trabalho, Educação e Saúde. [Internet]. 2020 [cited 2021 Ago 04];18(3):e00304136. Available from: https://www.scielo.br/j/tes/a/wMpmVcXgk48vdfySSZ9Z8yF/?lang=pt

32. Fragelli RR, Fragelli TBO. Summaê: um espaço criativo para aprendizagem. Revista Diálogo Educacional. [Internet]. 2017 [cited 2021 Ago 15];17(52):409-430. Available from: https://www.redalyc.org/articulo.oa?id=189154955006

33. Aguiar LL, Cordeiro SME, Melo GAA, Silva RA, Guedes MVC, Caetano JA. Juicio clínico en diagnósticos de enfermería de pacientes renales crónicos en hemodiálisis. Enf Global. [Internet]. 2020 [cited 2021 Set 09];19(2):162-97. Available from: https://revistas.um.es/eglobal/article/view/373931

34. Kazour F, Richa S, Zoghbi M, El-Hage W, Haddad FG. Using the script concordance test to evaluate clinical reasoning skills in psychiatry. Acad Psychiatry. [Internet]. 2017 [cited 2021 Out 20];41(1):86-90. Available from: https://www.researchgate.net/publication/303094276_Using_the_Script_Concordance_Test_to_Evaluate_Clinical_Reasoning_Skills_in_Psychiatry

Support and Acknowledgment:

The authors declare that the research did not receive funding for its realization.

Scientific Editor: Francisco Mayron Morais Soares. Orcid: https://orcid.org/0000-0001-7316-2519