Rapid cycle deliberate practice: a new learning and teaching concept on nursing team

Prática deliberada em ciclos rápidos: um novo conceito de ensino aprendizagem na equipe de enfermagem

Práctica deliberada en ciclos rápidos: un nuevo concepto de enseñanza-aprendizaje en el equipo de enfermeira

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REVISA

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RESUMO

Objetivo: elucidar como a prática deliberada em ciclos rápidos pode contribuir para o aperfeiçoamento dos profissionais de enfermagem na sua atuação nas unidades de saúde e no atendimento pré-hospitalar. **Método:** trata-se de uma pesquisa qualitativa e método de revisão bibliográfica integrativa seguindo os pressupostos de Mendes em pesquisa de revisão integrativa realizada em 2008. Ele torna-se relevante, pois poderá trazer benefícios da prática deliberada em ciclos rápidos para profissionais da área da enfermagem na aplicação do dia-a-dia da assistência dentro de unidades hospitalares e no atendimento pré-hospitalar, através do aprimoramento que esta metodologia pode oferecer e, dessa forma, vir também a estimular novas pesquisas. **Resultados:** Com a constante mudança no processo de ensino-aprendizagem, novas metodologias foram inseridas, por exemplo, as metodologias ativas. Essas novas metodologias têm o objetivo geral de levar o aprendiz a uma aprendizagem significativa. Nessas metodologias, o estudante passa a ser o ser o sujeito da construção do saber e formulador de hipótese. Elas têm como principal característica propiciar que os estudantes busquem soluções para problemas reais, tornando-se, assim, protagonistas do processo de aprendizagem. Uma vertente dessas metodologias ativas é a Simulação Realística, que utiliza cenários e manequins inertes, modelos anatômicos ou mecânicos, computacionais, simuladores de situações realísticas etc., para tornar melhor e mais atraente o processo de aprendizagem. **Conclusão:** A Prática Deliberada em Ciclos Rápidos – PDCR é um modelo de Simulação Realística, com o diferencial de interrupções e rápidos debriefings durante a prática nos cenários, o que pode tornar-se um diferencial na melhor aprendizagem e retenção do conhecimento por parte do estudante.
Descritores: Prática Deliberada; Aperfeiçoamento da Enfermagem; Simulação Realística.

ABSTRACT

Objective: To elucidate how the deliberate practice in rapid cycles can contribute to the improvement of nursing professionals in their work in health units and in pre-hospital care. **Method:** this is a qualitative research and integrative literature review method following the assumptions of Mendes in an integrative review carried out in 2008. It becomes relevant because it can bring benefits of deliberate practice in rapid cycles for nursing professionals in the day-to-day application of care within hospital units and in pre-hospital care, through the improvement that this methodology can offer and, thus, also stimulate new research. **Results:** With the constant change in the teaching-learning process, new methodologies were introduced, for example, active methodologies. These new methodologies have the overall goal of leading the learner to meaningful learning. In these methodologies, the student becomes the subject of the construction of knowledge and the formulator of the hypothesis. Their main characteristic is to enable students to seek solutions to real problems, thus becoming protagonists of the learning process. One aspect of these active methodologies is Realistic Simulation, which uses inert scenarios and mannequins, anatomical or mechanical models, computational models, simulators of realistic situations, etc., to make the learning process better and more attractive. **Conclusion**: The Deliberate Practice in Rapid Cycles – PDCR is a Realistic Simulation model, with the differential of interruptions and quick debriefings during the practice in the scenarios, which can become a differential in the better learning and retention of knowledge by the student.
Descriptors: Deliberate Practice; Nursing Improvement; Realistic Simulation.

RESUMEN

Objetivo Esclarecer cómo la práctica deliberada en ciclos rápidos puede contribuir para la mejora de los profesionales de enfermería en su trabajo en las unidades de salud y en la atención prehospitalaria. **Método:** se trata de una investigación cualitativa y un método integrador de revisión bibliográfica siguiendo los supuestos de Mendes en una revisión integrativa realizada en 2008. Se vuelve relevante porque puede traer beneficios de la práctica deliberada en ciclos rápidos para los profesionales de enfermería en la aplicación cotidiana de los cuidados dentro de las unidades hospitalarias y en la atención prehospitalaria, a través de la mejora que esta metodología puede ofrecer y, por lo tanto, también estimular nuevas investigaciones. **Resultados:** Con el cambio constante en el proceso de enseñanza-aprendizaje, se introdujeron nuevas metodologías, por ejemplo, las metodologías activas. Estas nuevas metodologías tienen el objetivo general de llevar al alumno a un aprendizaje significativo. En estas metodologías, el estudiante se convierte en el sujeto de la construcción del conocimiento y en el formulador de la hipótesis. Su principal característica es permitir a los alumnos buscar soluciones a problemas reales, convirtiéndose así en protagonistas del proceso de aprendizaje. Un aspecto de estas metodologías activas es la Simulación Realista, que utiliza escenarios y maniquíes inertes, modelos anatómicos o mecánicos, modelos computacionales, simuladores de situaciones realistas, etc., para hacer mejor y más atractivo el proceso de aprendizaje. **Conclusión:** La Práctica Deliberada en Ciclos Rápidos – PDCR es un modelo de Simulación Realista, con el diferencial de interrupciones y debriefings rápidos durante la práctica en los escenarios, lo que puede convertirse en un diferencial en el mejor aprendizaje y retención de conocimientos por parte del estudiante.
Descriptores: Práctica deliberada; Perfeccionamiento de la Enfermería; Simulación realista.

Introduction

Nowadays, there are several teaching/learning methodologies that seek to facilitate and improve this process for both the facilitator and the student. In health education, andragogy – the art or science of educating adults – is the main challenge for educators, since, it is assumed that the student already has a degree or a certain knowledge in the area in which he intends to educate. Based on this principle, these innovative methodologies emerged over time.

Some examples of these methodologies are: Problem-Based Learning (PBL), Research-Based Learning (PBL), Project-Based Learning (PBL), Team-Based Learning (TBL), use of games, etc. All emphasize the resolution of meaningful problems or situations contextualized in the real world, in a collective and collaborative way, also known as realistic simulations.

Andragogy was created by the American Malcolm Knowles (1913 – 1997), it preaches that it is necessary to diversify these methodologies a lot, since, in the face of this new perspective of teaching/learning, there is a need to apprehend the student's attention, as well as to call him to the need for new knowledge, even after they have already gone through previous training[1].

In health education, a widely used methodology is the traditional realistic simulation, where the student is exposed to an environment that simulates a real situation of professional practice.

In order for an adequate simulated exercise to occur, it is necessary that the scenario is built with fidelity, and for this it is often necessary to use low, medium or high fidelity mannequins, in which a real situation will be simulated based on previous knowledge and, soon after the practice, an evaluator will use a tool called debriefing, which consists of reflecting and discussing the points of error and success in that simulation, after the debriefing the simulation is closed without the participants having the opportunity to practice the tasks again and improve personal performance[2].

Within this methodology there are several strands, one of them is the Deliberate Practice in Rapid Cycles – PDCR, which consists of a modern strategy within realistic simulation. In this dynamic, a clinical case is presented and simulated several times until the team that is being trained acquires the desired competence. When the proposed objectives are achieved, a new simulation is started with an increase in the complexity of the proposed tasks and so on. These simulations are called cycles[2].

This practice has been used in the training and development of health professionals, highlighting that "health professional" refers only to those who hold positions or jobs whose attributions are to provide health activity itself, requiring specific qualifications and knowledge, which is different from "health professional", which are all those who work where the service is provided, which includes the servers in the administrative area[3].

Studies reveal that the PDCR presents itself as a differential for simulated practice. In 2014, a study with a group of residents from the Accreditation Council for Graduate Medical Education (ACGME) in the United States used pre- and post-intervention with the use of PDCR, which showed that training with this method led to a higher proportion of participants performing cardiopulmonary resuscitation in less than one minute after the diagnosis of cardiorespiratory arrest (71% vs 34%, $p<0.001$), in addition to

reducing the pre-shock pause after the diagnosis of ventricular fibrillation (median 27 vs 51 seconds, p<0.002)[4].

Based on this evidence, the following question arose: How can Deliberate Practice in Rapid Cycles - PDCR contribute to the teaching and improvement of nursing students and professionals in care in health units and pre-hospital care?

The objective of this study was to elucidate how deliberate practice in rapid cycles can contribute to the improvement of nursing professionals in their work in health units and in pre-hospital care.

The study becomes relevant because it may bring benefits of deliberate practice in rapid cycles for nursing professionals in the application of day-to-day care within hospital units and in pre-hospital care, through the improvement that this methodology can offer and, thus, also stimulate new research.

Methodology

The methodology for this study was a qualitative approach and an integrative literature review method that seeks to explain a problem based on theoretical references published in articles[5].

Integrative Review is a research method used since 1980, within the scope of Evidence-Based Practice (EBP), which involves the systematization and publication of the results of a bibliographic research in health so that they can be useful in health care, emphasizing the importance of academic research in clinical practice.[5]

Data collection was carried out through a systematic search of scientific articles written in the last 6 years and available in the Scientific Electronic Library Online (SCIELO), PubMed and Virtual Health Library (VHL) databases, using the following descriptors: Deliberate Practice; Nursing Improvement and Realistic Simulation.

For the selection of articles, the following inclusion criteria were considered: national and international scientific articles in Portuguese and English, published in full and available online, from 2018 to 2023.

The exclusion criteria focused on studies that did not meet the research objective with the following exclusion criteria: articles published before 2018; articles with incomplete publication and/or in the form of an expanded abstract.

Results

In the present study, 27 (twenty-seven) scientific articles were analyzed, which met the previously established inclusion criteria, where 14 were found in the SCIELO database, 11 in the PubMed portal and another 02 articles in the Virtual Health Library and, below, an overview of the articles analyzed is presented. Chart 1 represents the specifications of the articles included in the study.

Chart 1 - Articles used for the literature review. 2023.

Nº	Title	Authors	Year	Type of Study
1	Deliberate Practice in Rapid Cycles: A Modern Simulation Strategy	Leandro Teixeira de Castro, Thomaz Bittencourt Couto	2018	Literature review (narrative review)
2	Nursing Education: conceptualizing pedagogical project from the perspective of teachers	Solange Maria Fustinoni Magalhães, Maria Cristina Gabrielloni, Maria Cristina Sanna, Márcia Barbieri.	2019	Qualitative study
3	The content of workers' health and teaching methodologies in nursing education	Marcela Costa Fernandes, Norma Valéria Dantas de Oliveira Souza, Iraneide Ferreira Mafra, Camila Arantes Ferreira Brecht D' Oliveira, Ariane da Silva Pires, Carolina Cabral Pereira da Costa	2020	This is a qualitative, descriptive and exploratory study
4	Paulo Freire's liberating critical pedagogy in the scientific production of Nursing 1990-2017	Adriana Marcela Monroy Garzon, Kênia Lara da Silva, Rita de Cássia Marques	2021	Integrative review
5	Health teaching: perceptions of graduates of a specialization course in Nursing	Maria Aparecida de Oliveira Freitas, Isabel Cristina Kowal Olm Cunha, Sylvia Helena Souza da Silva Batista, Rosana Aparecida Salvador Rossit	2022	Qualitative approach
6	The teacher in active methodologies and the nuances between teaching and learning: challenges and possibilities	Ellys Marina de Oliveira Lara, Valéria Vernaschi Lima, Juliana Delalibera Mendes, Eliana Claudia Otero Ribeiro, Roberto de Queiroz Padilha	2023	Investigative
7	Active learning methodologies: possible paths for innovation in health education	Kelly Dandara da Silva Macedo, Beatriz Suffer Acosta, Ethel Bastos da Silva, Neila Santini de Souza, Carmem Lúcia Colomé Beck, Karla Kristiane Dames da Silva	2018	Experience report
8	Leadership in nursing: from teaching to practice in the hospital environment	Simone Coelho Amestoy, Letícia de Lima Trindade, Gilberto Tadeu Reis da Silva, Bianca Pozza dos Santos, Virginia Ramos dos Santos Souza Reis, Vaneska Brito Ferreira	2019	This is a qualitative, descriptive and exploratory study
9	Pedagogical approach in the implementation of curricular programs in nursing education	Débora Maria Vargas Makuch, Ivete Palmira Sanson Zagonel	2020	Convergent research with a mixed approach
10	Problem-based learning in the	Cynthia Lima Sampaio,	2021	Experience

	teaching of Thanatology in the undergraduate nursing course	Maria Fabiana de Sena Neri, Michell Ângelo Marques Araújo, Joselany Áfio Caetano, Suzana Mara Cordeiro Eloia, Ângela Maria Alves e Souza		report
11	Program for the Improvement and Revitalization of Knowledge in Nursing and Health	Luiz Anildo Anacleto da Silva, Rafael Marcelo Soder, Cínthia Cristina Oliveski, Mirian Natali Frizzo	2022	Qualitative, descriptive and exploratory research
12	Nursing education: evaluation of training by graduates, employers and professors	Maria Dyrce Dias Meira, Paulina Kurcgant	2018	Descriptive and exploratory study
13	The teacher's view of communicative skills in different teaching methodologies	Karime Rodrigues Emilio de Oliveira, Monica Martins Trovo, Amanda Creste Martins da Costa Ribeiro Risso, Eliana Mara Braga	2019	Qualitative research
14	Realistic simulation as an instrument in the nursing teaching-learning process	Keller Kathier Cerqueira Carneiro, Iel Marciano de Moraes Filho, Osmar Pereira dos Santos, Aline Aparecida Arantes, Keila Cristina Félis, Ihago Santos Guilherme	2020	Research with a descriptive, quantitative-qualitative approach
15	Perception of undergraduate nursing students about realistic simulation	Raphael Raniere de Oliveira Costa, Soraya Maria de Medeiros, José Carlos Amado Martins, Marcelly Santos Cossi, Marília Souto de Araújo	2021	This is a descriptive study with a quantitative-qualitative approach, of the action research type.
16	Teaching strategies: promoting the development of moral competence in students	Cleci de Fátima Enderle, Rosemary Silva da Silveira, Graziele de Lima Dalmolin, Valéria Lerch Lunardi, Liziane Iturriet Avila, Carmen Carballo Dominguez	2022	Qualitative research
17	Using rapid cycle deliberate practice to improve primary and secondary survey in pediatric trauma (Usando Prática Deliberada em Ciclos Rápidos para melhorar pesquisas primárias e secundárias em traumas pediátricos)	Diana Hou Yan, Mark B Slidell, Alisa McQueen	2023	Qualitative research
18	Rapid Cycle Deliberate Practice in Medical Simulation (Prática Deliberada em Ciclos Rápidos em Simulação Médica)	Cynthia R. Peng; Kimberly Schertzer.	2018	Field research

19	Rapid Cycle Deliberate Practice in Medical Education - a Systematic Review (Prática Deliberada em Ciclos Rápidos em Educação Médica – uma Revisão Sistemática)	Jillian Taras, Tobias Everett	2019	Systematic review
20	"Rapid Cycle Deliberate Practice (RCDP) as a Method to Improve Airway Management Skills - A Randomized Controlled Simulation Study." (Prática Deliberada em Ciclo Rápido (PDCR) como um Método para Melhorar as Habilidades de Manejo de Vias Aéreas)	Isabel T Gross, Dennrik G Abrahan, Ambuj Kumar, Julia Noether, Nicole A Shilkofski, Paula Pell, Laleh Bahar-Posey	2020	Randomized, controlled, blinded study
21	"Development and pilot of an interprofessional pediatric resuscitation program for non-acute care inpatient providers." (Desenvolvimento piloto de um programa de ressuscitação interprofissional em pediatria para cuidadores de pacientes não agudos)	Ronish Gupta, Colleen Fitzgibbons, Christa Ramsay, Lindsey Vanderheiden, Christina Toppozini, Anna-Theresa Lobos	2021	Quantitative study
22	Rapid cycle deliberate practice vs. traditional simulation in a resource-limited setting (Prática deliberada em ciclos rápidos comparada à simulação tradicional em um cenário com recursos limitados)	Samantha L. Rosman, Rosine Nyirasafari, Hippolyte Muhire Bwiza, Christian Umuhoza, Elizabeth A. Camp, Debra L. Weiner, Marideth C. Rus	2022	Randomized trial
23	Rapid Cycle Deliberate Practice Versus Reflective Debriefing for Pediatric Septic Shock Training (Prática Deliberada em Ciclos Rápidos vesus Debriefing Reflectivo no treinamento de Choque Séptico Pediátrico)	Melinda J. Cory, Nora Colman, Courtney E. McCracken, Kiran B. Hebbar	2023	Prospective randomized control study.
24	A novel biosimulation task trainer for the deliberate practice of resuscitative hysterotomy (Uma nova abordagem em biossimulação para prática deliberada em histerostomia ressuscitativa).	Lawrence Lau, Dimitrios Papanagnou, Elaine Smith, Crystal Waters, Elizabeth Teixeira, Xiao Chi Zhang	2023	Quantitative study
25	Improvement of Immediate Performance in Neonatal Resuscitation Through Rapid Cycle Deliberate Practice Training (Melhora da Performance Imediata em Ressuscitação Neoatal Através de Treinamento em Prática Deliberada em Ciclos Rápidos).	Maclain J. Magee, Christiana Farkouh-Karoleski, Tove S. Rosen	2018	Randomized trial

26	"The development and implementation of a 12-month simulation-based learning curriculum for pediatric emergency medicine fellows utilizing debriefing with good judgment and rapid cycle deliberate practice." (Desenvolvimento e implementação de um curriculum de aprendizado baseado em simulação por um período de 12 meses para residentes de emergências pediátricas utilizando debriefing com bom senso e prática deliberada em ciclos rápidos)	Justin M. Jeffers, Shannon Poling	2019	Systematic approach
27	Rapid Cycle Deliberate Practice: Application to Neonatal Resuscitation (Prática Deliberada em Ciclos Rápidos: Aplicação à Reanimação Neonatal).	Karen Patricia, Jennifer Arnold, Daniel Lemke	2020	Randomized trial

Discussion

For the discussion of the theme, the data found were organized in the form of categories, where they are presented in number of categories, as follows:

Improvement in nursing

A qualitative study carried out with professors from the Paulista School of Nursing points out that the scientific literature shows the need for schools to adapt, through pedagogical projects and curricular organization in order to meet the pedagogical demand, in addition to ensuring quality education and seeking critical and reflective autonomy[6].

Another study carried out with professors of the Nursing course of a Public University located in the city of Rio de Janeiro showed that the process of educating based on problematization (a model widely used in active methodologies) seeks to build knowledge through lived experience that is significant for the subject. It also states that this process is supported by learning through discovery and is opposed to the process of teaching by reception[7].

In Freire's perspective, the moment in which he understands the development of critical consciousness about generating themes is when, in the problematization phase, the subject overcomes the magical vision and develops the critical vision of his reality[8].

Thus, if the student does not see himself as a subject in the education process and leaves the entire learning process to the teacher, this methodology is not adequate to the present day [9].

Active Methodologies (MA)

The use of active methodologies values interdisciplinarity, contextualization of knowledge, prior knowledge, among others, these advantages occur considering that education is historically and socially constituted and that the learning process is intersubjective and social[10].

The active methodology is a proven beneficial method, despite this it is necessary that teachers and students believe in the pedagogical potential of the methodology and strive to work intellectually and affectively for the construction of learning. This methodology also requires dedication on the part of students[11]. A study carried out with nurses from a public hospital in the state of Rio Grande do Sul corroborates this idea when it highlights the advances in the construction of a training process using student-centered AM as the protagonist of the teaching-learning process[12].

The evaluation of this methodology leads to critical reflection. It reveals the teachers' concern about the forms of evaluation of knowledge, ability and attitude, especially interactive evaluation and self-evaluation[13].

The key concept of AM is to be able to learn by doing, which is understood in the overlapping of "action-reflection-action", as opposed to traditional teaching, based on the binomial theory/practice to develop knowledge[14].

MA is one of the most fruitful ways to stimulate students' critical thinking, giving them the opportunity to learn meaningfully. In meaningful learning, the basis for incorporation, understanding and fixation of new knowledge is prior knowledge and that the student needs to resize his educational role and transcend passive and receptive attitudes of information in the construction of knowledge[15]. Other studies with professors, students and graduates reveal a similar line of thought when they state that the use of MA can be an effective strategy to obtain better results in meaningful learning[16,17].

Realistic Simulation

A descriptive study found responses from the facilitators in which they listed the advantages of realistic simulation, such as: "the relationship between theory and practice, the development of clinical reasoning in complex and individualized cases, the favoring of decision making in the field of practice combined with the training of the student". Some disadvantages listed were the facilitator's lack of skill, difficulty in creating situations that refer to reality, little time to develop the scenarios, among others[18].

In a similar study, answers such as: "Simulation provides a previous experience of practice", "Simulation allows you to think critically and reflect on practice" and "Simulation allows you to fix the knowledge acquired in the classroom"[19].

Realistic simulation allows the student the freedom to think and reflect critically and this allows reflecting on a real clinical situation, with real problems, in a type of approach not always available in training involving care[20].

Deliberate Practice in Rapid Cycles (PDCR)

A randomized study, carried out in 2017, compared two simulation methods in basic life support, a standard strategy, recommended by the AHA (American Heart Association) and an in-hospital resuscitation strategy using the PDCR in which the latter, after training, started chest compressions in a significantly shorter time compared to the former, in addition to spending more time in this compression and performing specific resuscitation tasks within the scope in-hospital[2].

In general, resident physicians are familiar with the traditional simulation, which consists of a complete simulation and, at the end, the debriefing, but the PDCR breaks this model into pieces. This can be disconcerting, as the facilitator needs to interrupt the simulation and correct them, but once the students are alerted about this process, the situation is normalized[21].

PDCR differs from simulation teaching in that it integrates concepts of deliberate and due practice from the principles of mastery learning. Breaks with micro debriefs give students the opportunity to apply the skills learned immediately[22].

Research defines microdebriefing as a "reflection on action" that occurs within the simulation process, which consists of a pause in the simulation after a participant's error. The research also points out that real-time debriefing or microdebriefing were identified as key components for most of the resources[23].

A randomized study conducted in 2019 inferred that PDCR is an effective method of simulating debriefing for training skill procedures, since the PDCR group was higher in the overall score compared to the control group[24]. Three other studies also obtained identical results in similar studies[25,26,27]. A study with biosimulation in PDCR states that the model was the best accepted by the participants of a training, as it allowed them to improve on their mistakes[28], while a study with training focused on neonatal resuscitation shows that the interns improved their skills, since the immediate feedback was based on their mistakes[29].

PDCR is a rising practice that has been shown to be beneficial for high-risk events and high-quality cardiopulmonary resuscitation procedures [30].

The division of the simulation into small cases of the skills to be acquired, such as, for example, dividing a typical case of cardiopulmonary resuscitation, performing debriefing or microdebriefing in real time, were also points highlighted as positive by a study focused on resuscitation in neonates[31].

Final Considerations

Considering the results obtained, it is necessary to consider this methodology still in the process of construction. Although the PDCR is still little used in health education actions, studies have pointed out advantages in relation to the use of the methodology, such as the advantages: the competencies are divided into smaller trainings, which allows going from the least to the most complex; feedback is immediate and objective, allowing the correction of errors in real time; microdebriefing that consists of pausing, interrogating, rewinding and trying again; repetition of the practice until

mastery; little discussion, centralization in "hands-on" practice; outcome of the case with an expected ending; greater control of the scenario by the facilitator; greater student involvement and for being more appropriate for single sequences of actions.

And as disadvantages, the microdebriefings in the methodology could be very long; There is no way to control the execution time of the scenarios, as it depends on the evolution of the learners and the number of participants is controlled.

The research met the objectives, as it was evidenced the great benefit of the PDCR in relation to the education of nursing professionals, since it provides effective training in various areas of care, especially those in which there is a known outcome. It is up to educational institutions, continuing education sectors and managers to test this methodology in their institutions and evidence, in practice, the benefits for health teams.

The relevance of the study in relation to nursing is evidenced by the fact that the continuous and repetitive practice that the instrument offers can be the differential in the intervention and clinical recovery of patients, the agility in decision-making in certain situations and the precision of the professionals' action. This can be the difference between full recovery, irreversible damage, or the loss of a patient who is in the care of the nursing team.

The PDCR was adopted as a study because it can provide all these benefits, since it uses repetitions on top of errors, corrections and immediate return to practice, which provides training to mastery for the nursing team and minimizes errors, damages or losses of patients assisted by the nursing team.

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References

1. Beck Caio. Malcolm Knowles: o pai da andragogia. Andragogia Brasil [Internet]. 2019 [citado 2023 agosto 20]. Disponível em: https://andragogiabrasil.com.br/malcolm-knowles/.

2. Castro Leandro Teixeira de; Couto Thomaz Bittencourt. Prática Deliberada em Ciclos Rápidos: uma estratégia moderna de simulação. Scientia Medica. [Internet]. Vol. 28. 2021 [citado 2023 Agosto 17]. Disponível em https://pesquisa.bvsalud.org/portal/resource/pt/biblio-880251.

3. BrasiL Secretaria de Estado de Saúde de São Paulo. Coordenadoria de Recursos Humanos. Acumulação de cargos [Internet]. 2020 [citado 2023 Setembro 30]. Disponível em: http://saude.sp.gov.br/coordenadoria-de-recursos-humanos/areas-da-crh/cpass/conteudo/acumulacao-de-cargos.

4. Hunt Elizabeth A. et al. Pediatric resident resuscitation skills improve after "Rapid Cycle Deliberate Practice" training (Aperfeiçoamento das habilidades em ressuscitação de residents de pediatria após treino em "Prática Deliberada em Ciclos Rápidos") (tradução nossa). Elsevier - Resuscitation, Volume 85, pág. 945 – 951[Internet]. 2019 [citado 2023 Agosto 17]. Disponível em http://sailcentres.kcl.ac.uk/wp-content/uploads/2014/10/1-s2.0-S0300957214001154-main.pdf.

5. Mendes Karina Dal Sasso, Silveira Renata Cristina de Campos Pereira, Galvão Cristina Maria. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. Texto contexto – enferm. Florianópolis, v. 17, n. 4 [Internet]. 2018 [citado 2023 março 18]. Disponível em https://www.researchgate.net/publication/43531031_Revisao_integrativa_Metodo_de_pesquisa_para_a_incorporacao_de_evidencias_na_saude_e_na_enfermagem.

6. Magalhães Solange Maria Fustinoni, Gabrielloni Maria Cristina, Sanna Maria Cristina, Barbieri Márcia. Educação em Enfermagem: conceituando projeto pedagógico na visão de professores. Acta paul. enferm. [Internet]. 2020 [citado 2023 Maio 06]; 30(3): 247-253. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002020000300247&lng=pt. Epub 14-Jun-2020.

7. Fernandes Marcela Costa, Souza Norma Valéria Dantas de Oliveira, Mafra Iraneide Ferreira, D' Oliveira Camila Arantes Ferreira Brecht, Pires Ariane da Silva, Costa Carolina Cabral Pereira da. O conteúdo da saúde do trabalhador e as metodologias de ensino na formação do enfermeiro. Esc. Anna Nery. [Internet]. 2019 [citado 2023 Maio 20]; 20(3): e20160074. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452019000300219&lng=pt.

8. Garzon Adriana Marcela Monroy, Silva Kênia Lara da, Marques Rita de Cássia. Pedagogia crítica libertadora de Paulo Freire na produção científica da Enfermagem 1990-2017. Rev. Bras. Enferm. [Internet]. 2020 [citado 2023 Maio 20]; 71(Suppl 4): 1751-1758. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672020001001751&lng=pt.

9. Freitas Maria Aparecida de Oliveira, Cunha Isabel Cristina Kowal Olm, Batista Sylvia Helena Souza da Silva, Rossit Rosana Aparecida Salvador. Docência em saúde: percepções de egressos de um curso de especialização em Enfermagem. Interface (Botucatu). [Internet]. 2021 [citado 2023 Maio 20]; 20(57): 427-436. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832021000200427&lng=pt.

10. Lara Ellys Marina de Oliveira, Lima Valéria Vernaschi, Mendes Juliana Delalibera, Ribeiro Eliana Claudia Otero, Padilha Roberto de Queiroz. O professor nas metodologias ativas e as nuances entre ensinar e aprender: desafios e possibilidades. Interface (Botucatu)

[Internet]. 2022 [citado 2023 Abril 03]; 23: e180393. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832022000100240&lng=pt.

11. Macedo Kelly Dandara da Silva, Acosta Beatriz Suffer, Silva Ethel Bastos da, Souza Neila Santini de, Beck Carmem Lúcia Colomé, Silva Karla Kristiane Dames da. Metodologias ativas de aprendizagem: caminhos possíveis para inovação no ensino em saúde. Esc. Anna Nery [Internet]. 2021 [citado 2023 Maio 03]; 22(3): e20170435. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452021000300704&lng=pt.

12. Amestoy Simone Coelho, Trindade Letícia de Lima, Silva Gilberto Tadeu Reis da, Santos Bianca Pozza dos, Reis Virginia Ramos dos Santos Souza, Ferreira Vaneska Brito. Liderança na enfermagem: do ensino ao exercício no ambiente hospitalar. Esc. Anna Nery. [Internet]. 2021 [citado 2023 Abril 29] ; 21(4): e20160276. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452021000400201&lng=pt.

13. Makuch Débora Maria Vargas, Zagonel Ivete Palmira Sanson. Abordagem pedagógica na implementação de programas curriculares na formação do enfermeiro. Esc. Anna Nery [Internet]. 2022 [citado 2023 Maio 05]; 21(4): e20170025. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452022000400215&lng=pt.

14. Sampaio Cynthia Lima, Neri Maria Fabiana de Sena, Araújo Michell Ângelo Marques, Caetano Joselany Áfio, Eloia Suzana Mara Cordeiro, Souza Ângela Maria Alves e. Aprendizagem baseada em problemas no ensino da Tanatologia, no curso de graduação em Enfermagem. Esc. Anna Nery [Internet]. 2020 [citado 2023 Maio 20]; 22(3): e20180068. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452020000300703&lng=pt.

15. Silva Luiz Anildo Anacleto da, Soder Rafael Marcelo, Oliveski Cínthia Cristina, Frizzo Mirian Natali. Programa de Aprimoramento e Revitalização do Conhecimento na Enfermagem e Saúde. Interface (Botucatu) [Internet]. 2022 Abr [citado 2023 Maio 20]; 22(65): 517-526. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832022000200517&lng=pt.

16. Meira Maria Dyrce Dias, Kurcgant Paulina. Educação em enfermagem: avaliação da formação por egressos, empregadores e docentes. Rev. Bras. Enferm [Internet]. 2021 [citado 2023 Maio 05]; 69(1): 16-22. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672021000100016&lng=pt. http://dx.doi.org/10.1590/0034-7167.2016690102i.

17. Oliveira Karime Rodrigues Emilio de, Trovo Monica Martins, Risso Amanda Creste Martins da Costa Ribeiro, Braga Eliana Mara. O olhar docente sobre as habilidades comunicativas em diferentes metodologias de ensino. Rev. Bras. Enferm [Internet]. 2022 [citado 2023 Maio 04]; 71(5): 2447-2453. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672022000502447&lng=pt.

18. Carneiro Keller Kathier Cerqueira et al. Cangussu DDD. Simulação realística como instrumento no processo de ensino-aprendizagem de enfermagem. REVISA. [Internet]. 2019. [citado 2023 Abril 23] Disponível em: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1053496.

19. Costa Raphael Raniere de Oliveira, Medeiros Soraya Maria de, Martins José Carlos Amado, Cossi Marcelly Santos, Araújo Marília Souto de. Percepção de estudantes da graduação em enfermagem sobre a simulação realística. Rev Cuid [Internet]. 2021 Dez [citado 2023 Maio 21] ; 8(3): 1799-1808. Disponível em:

http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S2216-09732021000301799&lng=pt.

20. Enderle Cleci de Fátima, Silveira Rosemary Silva da, Dalmolin Graziele de Lima, Lunardi Valéria Lerch, Avila Liziane Iturriet, Dominguez Carmen Carballo. Estratégias docentes: promovendo o desenvolvimento da competência moral em estudantes. Rev. Bras. Enferm. [Internet]. 2020 [citado 2023 Maio 20]; 71(Suppl 4): 1650-1656. Disponível em: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672020001001650&lng=pt.

21. Yan Diana Hou, Slidell Mark B, McQueen Alisa. Using rapid cycle deliberate practice to improve primary and secondary survey in pediatric trauma (Usando Prática Deliberada em Ciclos Rápidos para melhorar pesquisas primárias e secundárias em traumas pediátricos) (tradução nossa). BMC Medical Education [Internet]. v20 e131, 2022 [citado 2023 Maio 07]. Disponível em https://pubmed.ncbi.nlm.nih.gov/32345288/.

22. Peng Cynthia R.; Schertzer Kimberly. Rapid Cycle Deliberate Practice in Medical Simulation (Prática Deliberada em Ciclos Rápidos em Simulação Médica) (tradução nossa). StatPearls (Internet). Treasure Island (FL) [Internet]. 2018 [citado 2023 Maio 07]. Disponível em https://www.ncbi.nlm.nih.gov/books/NBK551533/.

23. Taras Jillian, Everett Tobias. Rapid Cycle Deliberate Practice in Medical Education - a Systematic Review (Prática Deliberada em Ciclos Rápidos em Educação Médica – uma Revisão Sistemática) (tradução nossa). Cureus [Internet]. 2021; 9(4):e1180 [citado 2023 Maio 12]. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5441688/.

24. Gross Isabel T et al. "Rapid Cycle Deliberate Practice (RCDP) as a Method to Improve Airway Management Skills - A Randomized Controlled Simulation Study." (Prática Deliberada em Ciclo Rápido (PDCR) como um Método para Melhorar as Habilidades de Manejo de Vias Aéreas) (tradução nossa). Cureus vol. 11,9 e5546 [Internet]. 2019 [citado 2023 Maio 11]. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6721918/.

25. Gupta Ronish et al. "Development and pilot of an interprofessional pediatric resuscitation program for non-acute care inpatient providers." (Desenvolvimento piloto de um programa de ressuscitação interprofissional em pediatria para cuidadores de pacientes não agudos) (tradução nossa). Medical education online vol. 24,1 [Internet]. 2022 [citado 2023 Maio 11]. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6394294/.

26. Rosman Samantha L. et al. Rapid cycle deliberate practice vs. traditional simulation in a resource-limited setting (Prática deliberada em ciclos rápidos comparada à simulação tradicional em um cenário com recursos limitados) (tradução nossa). BMC Med Educ 19, 314 [Internet]. 2020 [citado 2023 Maio11]. Disponível em https://www.ncbi.nlm.nih.gov/pubmed/31438936.

27. Cory, Melinda J. et al. Rapid Cycle Deliberate Practice Versus Reflective Debriefing for Pediatric Septic Shock Training (Prática Deliberada em Ciclos Rápidos vesus Debriefing Reflectivo no treinamento de Choque Séptico Pediátrico) (tradução nossa). Pediatric Critical Care Medicine. [Internet]. 2022 [citado 2023 Maio 11] Volume 20 -edição 5- p 481-489. Disponível em https://journals.lww.com/pccmjournal/Abstract/2019/05000/Rapid_Cycle_Deliberate_Practice_Versus_Reflective.10.aspx.

28. Lau Lawrence, et al. A novel biosimulation task trainer for the deliberate practice of resuscitative hysterotomy (Uma nova abordagem em biossimulação para prática deliberada em histerostomia ressuscitativa) (tradução nossa). Adv Simul (Lond) [Internet]. 2021;3:19. 2022 [citado 2023 Abril 28]. Disponível em https://pubmed.ncbi.nlm.nih.gov/30305937/.

29. Magee Maclain J., Farkouh-Karoleski Christiana, Rosen Tove S.. Improvement of Immediate Performance in Neonatal Resuscitation Through Rapid Cycle Deliberate

Practice Training (Melhora da Performance Imediata em Ressuscitação Neoatal Através de Treinamento em Prática Deliberada em Ciclos Rápidos) (tradução nossa). J Grad Med Educ. [Internet]. 2020 [citado 2023 maio 12]. 10(2):192-197. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5901799/.

30. Jeffers Justin M, Poling Shannon. "The development and implementation of a 12-month simulation-based learning curriculum for pediatric emergency medicine fellows utilizing debriefing with good judgment and rapid cycle deliberate practice." (Desenvolvimento e implementação de um curriculum de aprendizado baseado em simulação por um período de 12 meses para residentes de emergências pediátricas utilizando debriefing com bom senso e prática deliberada em ciclos rápidos) (tradução nossa). BMC medical education vol. 19,1 22 [Internet]. 2023 [citação 2023 Maio 12]. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6334393/.

31. Patricia Karen, Arnold Jennifer, Lemke Daniel. Rapid Cycle Deliberate Practice: Application to Neonatal Resuscitation (Prática Deliberada em Ciclos Rápidos: Aplicação à Reanimação Neonatal) (tradução nossa). MedEdPORTAL [Internet]. 2020;13:10534. 2022 [citado 2023 Maio 13]. Disponível em https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342166/.

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