



DEVELOPMENT AND EVALUATION OF A HYBRID TEACHING PROPOSAL ON PEDIATRIC EMERGENCIES FOR NURSING STUDENTS¹

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ABSTRACT

Objective: to develop and evaluate a hybrid teaching proposal on cardiorespiratory arrest due to respiratory failure in pediatrics. **Method:** application study, with a quantitative approach. Developed and evaluated a hybrid teaching proposal and a clinical simulation scenario with nursing students on the management of cardiopulmonary arrest due to pediatric respiratory failure to be implemented in a virtual learning environment, between March and November 2018. The hybrid teaching was introduced through a course, and the clinical simulation scenario took place in a laboratory environment. Three adapted forms were used to evaluate the interface of the virtual environment, the simulation scenario and the general aspects of the course with hybrid teaching, evaluating the level of agreement. **Results:** the virtual learning environment was built in seven modules, augmented by multimedia. The clinical simulation scenario represented a pediatric ward and was composed of actors and a high-fidelity mannequin. A total of 25 undergraduate students participated in it. The hybrid course lasted 30 days. Favorable responses were obtained from 100% of the students. **Conclusion:** the hybrid teaching proposal on pediatric cardiorespiratory arrest was constructed and evaluated by nursing students and considered an innovative teaching strategy from the perspective of these students.

Keywords: Education nursing. Multimedia. High fidelity simulation training. Pediatric nursing. Heart arrest.

INTRODUCTION

The educational process of young adults in higher education is a didactic challenge faced by countless teachers today. Technological advances and changes in the profile of students entering undergraduate courses affect the development and approaches used to construct knowledge⁽¹⁾.

The development and use of Digital Information and Communication Technologies (DICT) has been an increasingly present practice in the academic scenario, with the purpose of helping students to understand the practical context of work environments, respecting their

particularities and demands in the teaching-learning process⁽²⁾. In the digital age, the support of DICT in learning provides experiences that are more in line with daily life in which technology appears naturally in a wide variety of spaces.

For a satisfactory educational process, hybrid teaching is an active methodology that gained prominence in the academic scenario, mainly after the advent of the coronavirus pandemic in 2020, due to its characteristic of combining face-to-face and virtual activities with the use of DICT for training. Because of its hybrid nature, this type of teaching provides flexibility in curricula, methodologies, approaches, schedules and

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spaces for the construction of knowledge in the most diverse areas⁽³⁾.

In the training of nurses, there is a need to develop specific skills, such as theoretical-scientific knowledge and clinical skills. In this sense, strategies such as clinical simulation, digital media and instruction using technological devices like computers, cell phones and tablets have been frequently used in the teaching-learning process⁽⁴⁾.

In order to meet the labor demand of developing countries, the association of different technological resources and hybrid teaching approaches can contribute to the development or improvement of skills by nursing students, in addition to promoting significant learning in such a way as to prepare them to work in the professional practice⁽⁵⁾.

Concerning nursing care, this study is interested in exploring the learning of undergraduate students to work in Pediatric Cardiorespiratory Arrest (PCA) care, since specific knowledge that has a direct impact on the lives and survival of these children is of intrinsic competence of nurses. Respiratory failure (RF) is the main cause of emergencies in this age group⁽⁶⁾ and can progress to PCA. This emergency situation demands technical-scientific knowledge and clinical skills for its successful management⁽⁷⁾.

Training professionals capable of working in emergency situations is relevant to clinical practice. Furthermore, offering active teaching methods, that is, including the undergraduate students as a protagonist participants in their training⁽⁸⁾, can potentiate the acquisition of theoretical-practical skills during their professional training⁽⁹⁾, avoiding putting the lives of patients at risk.

However, hybrid teaching is still being implemented in many Brazilian educational institutions, where research on the construction and implementation process of this teaching approach for the training of nurses is scarce, especially in the pediatric scenario.

That said, the objective of this study was to develop and evaluate, from the perspective of students, a hybrid teaching proposal on cardiorespiratory arrest due to respiratory failure in pediatrics. The results of the study may contribute to support innovative teaching

proposals in institutions that still need to offer other methods that include the undergraduate student as an active subject in the learning process, considering previous knowledge and instigating new ways to learn on care.

METHODS

Application study, with a quantitative approach, which consisted of the development of a hybrid educational proposal, made up by a virtual learning environment (VLE) with the implementation of different multimedia and a clinical simulation scenario on pediatric CA due to RF.

Application study is a research approach that has been gaining ground in investigative scenarios surrounding education. It is a pathway that goes beyond the qualitative and quantitative findings of research and focuses on intervention, the development of products and/or technologies and the cyclic and dialogic process between the researcher and his/her target audience, aimed at solving problems, where the subject takes action actively throughout the course of the studies⁽¹⁰⁾.

The development of the hybrid teaching proposal and its evaluation by nursing students took place between March and November 2018 in a Higher Education Institution (HEI) that had two undergraduate nursing courses (Bachelor and Bachelor and Licentiate Degrees).

Students regularly enrolled at the HEI to which the research was linked were invited to participate in the study, in the two nursing courses available, and who had already completed at least the second year of their undergraduate studies. This last criterion is justified, as it is from this point in the undergraduate course that students have theoretical-practical contact with activities in the area of child health care. Subjects who showed interest in participating in the research, but were not linked to the HEI, were excluded. Students who did not complete all stages of the research were also excluded from the study.

Development of the hybrid teaching proposal on pediatric CA due to RF

The methodological framework⁽¹¹⁾ that guided the development of the VLE deals with

the use of the “Addie” methodology of instructional design. This methodology addresses five development phases: “Analysis, design, development, implementation and evaluation”. It adopted the concepts of fixed instructional design (fixed ID), whose model divides the categories of the “Addie” model into two moments – the conception phase (analysis, design and development) and the execution phase (implementation and evaluation).

The development of the VLE took place within a learning management system, using free software to support learning, called “Modular Object-Oriented Dynamic Learning Environment” (MOODLE), which was called USP Extension Courses at the University of São Paulo (USP).

The clinical simulation scenario used in the course with a hybrid teaching proposal was designed using a methodological framework⁽¹²⁾ that points out the theoretical-practical pathways for the elaboration of simulated scenarios, considering the aspects prior to the scenario, preparation of the scenario and final aspects of the scenario.

The high-fidelity scenario, with actors and a high-fidelity child mannequin, included a clinical case referring to a situation of CA due to RF in a child in the hospital context, previously validated by experts⁽¹³⁾. In the current study, the scenario used the concepts of mixed methods, with role play and intervention in a high-fidelity simulator.

The developed course with a hybrid teaching proposal lasted 12 hours, with 10 hours reserved for asynchronous access to the materials included in the VLE, one hour available for a synchronous virtual chat session and one hour dedicated to carrying out the clinical simulation. The VLE was organized into seven modules and the course was distributed over 30 days. The learning objectives were to train and expand theoretical-scientific and practical knowledge on the management of PCA in children due to IR.

Evaluation of the hybrid teaching proposal by nursing students

Students were invited via publicity to institutional e-mail addresses. Registration occurred based on an expression of interest on

the electronic address provided by the research team, created exclusively for this purpose, in order to guarantee the confidentiality of data and the attendance of participants. After demonstrating interest and completing the invitation acceptance period, students were registered in the VLE and then access to the available materials was made available.

Participants were characterized using a questionnaire, collecting data on age, current period in the nursing course, type of course, use of educational technologies and use of multimedia to construct knowledge.

The VLE interface evaluation forms, the clinical simulation scenario and the general aspects of the hybrid course as a whole were adapted from studies⁽¹⁴⁻¹⁶⁾. They contained statements on the VLE interface, the clinical simulation scenario and the general aspects of the course with a hybrid teaching proposal. The information provided by the students was categorized using the Likert Scale, which indicated as “strongly agree”, “agree”, “neither agree nor disagree”, “disagree” and “strongly disagree” in each presented statement.

Students had access to all content and DICT present in the VLE during the 30-day period, with remote access and free navigation 24 hours a day. After completing all evaluation forms and completing the 30 days, access to the materials was revoked.

The evaluation of the VLE interface occurred after students had completed access to multimedia and modules. The evaluation of the clinical simulation scenario and the general aspects of the hybrid course occurred after the completion of the simulation sessions.

After completing the course, students evaluated the interface of the virtual environment, the simulation scenario and the general aspects of the course with hybrid teaching.

In order to analyze the obtained responses, items that obtained agreement greater than or equal to 80% in positive statements (“strongly agree” and “agree”) were considered positively evaluated. The collected data were synthesized and tabulated in an electronic spreadsheet using Microsoft Excel software for descriptive analysis, with the data displayed in tables with absolute and relative frequencies.

The Research Ethics Committee of the educational institution to which the researchers are linked approved the study under opinion 2.596.505 and CAAE 84077418.3.0000.5393. All students digitally signed the Free and Informed Consent Form and received a scanned copy, containing the signatures of the research team.

RESULTS

Course development with hybrid teaching proposal

The development of the course with a hybrid teaching proposal followed the “ADDIE” precepts, with the first phase corresponding to the analysis where the learning objectives were defined, namely: training nursing students and helping them to construct knowledge on management of PCA in children due to RF. Next, the target audience was defined as nursing students with prior knowledge required to participate in the course with hybrid teaching, in this case, having studied a discipline focused on nursing care in pediatrics. Furthermore, the main strategies and methodologies used to approach the teaching of PCA in nursing were observed, available in a simple search of national and international databases, as well as the potentialities to be incorporated into the course and weaknesses to be modified.

Concerning design, the platform that would host the course and the multimedia that would incorporate it were planned. The choice to develop the VLE in the extension course system of the university to which the study was linked is justified because it is a free and easy-to-use platform, in addition to being previously known to the students. The VLE was planned in topic format, on a single page, in order to facilitate its navigation and use by the target audience. The elaboration included means that provide greater temporal flexibility for access to multimedia and allow greater student independence and control over access to educational materials.

The time required to access and navigate each resource was structured. The VLE was composed of eight topics with information and materials for students: 1) presentation; 2) invitation letter and notice page; 3) characterization of participants; 4) educational video on the

management of PCA due to respiratory failure; 5) literary materials to support teaching; 6) synchronous chat session; 7) scheduling of realistic simulation activity; and 8) subjective evaluation of the VLE interface.

The presentation contained the resources of “page”, “lesson” and “forum” and made available the research invitation letter, the Free and Informed Consent Form and a notice board.

In order to characterize the participants, the “poll” resource contained six questions. Next, the VLE displayed an educational video using the “label” feature followed by a poll to evaluate this video.

Nine documents were inserted into the topic related to “supporting materials”, such as guidelines and scientific articles, using the “file” tool, followed by the synchronous chat session through the “chat” module and, finally, scheduling the time to participate in the clinical simulation, provided by the “choice” feature. The final VLE evaluation topic provided a poll with ten statements for students, the results of which were discussed in the next item of the results.

The course was implemented with the nursing students who made up the sample and had free access to the VLE for 30 uninterrupted days, with access to all resources for analysis, as well as evaluation questionnaires, feedback and suggestions for improvements. The course was made available during this period due to the understanding of the need for flexible access to educational resources, promoting student autonomy and control in the construction of knowledge. At this stage, greater autonomy for students in navigation was defined and small interface errors that occasionally arose were resolved, such as failures to register with the system and inactive resources.

The clinical simulation, in mixed mode (use of simulator and actors), was developed in an educational laboratory at the educational institution to which the researchers are linked. The students were divided into three classes, at three different times, and each one chose the time they considered most appropriate for their participation within the VLE itself. The classes were divided into ten, five and ten students, respectively.

The proposed scenario lasted approximately

60 minutes. The initial 10 minutes were used to carry out the prebriefing, at which time the research team explained the scenario proposals and expectations regarding the activity schedule for the group of participants. A “contract” was defined guaranteeing the confidentiality and secrecy of the actions, the roles and those responsible for facilitating and evaluating the activity. Guidance on safety issues and appropriate use of laboratory materials and equipment, as well as the simulator, were provided. Finishing the prebriefing, the scenario was presented, and the students who volunteered to work in the simulated environment were selected.

The simulation lasted approximately 10 minutes for the three groups. The debriefing took place afterwards, with the entire group of students, where the research team and students discussed the potentialities and weaknesses of the scene, the scenario and the actions of the students. This activity lasted approximately 25 minutes. The final 15 minutes were reserved for

students to respond to the simulation scenario evaluation questionnaire and the hybrid educational proposal evaluation questionnaire. Participants received both printed questionnaires to record their opinions.

Course evaluation with hybrid teaching proposal

In order to evaluate the course, from the perspective of students, a total of 59 nursing students agreed to participate in the study; however, 25 students completed the evaluation. Most of them (92.0%) were under 25 years old. Two (12.0%) students were in their second year, 14 (56.0%) were in their third year and eight (32.0%) were in their fourth year of the undergraduate course.

The VLE interface evaluation survey had 10 questions on environment navigation, learning possibilities and the benefits related to the educational technology. The responses provided by the students were systematized in Table 1.

Table 1. Frequency distribution of the responses given by students regarding the virtual learning environment (n=25) related to the items of the VLE evaluation instrument, according to levels of agreement. Ribeirão Preto, 2018.

	Strongly agree n (%)	Agree n (%)	Neither agree or disagree n (%)	Disagree n (%)
The VLE is easy to use.	21 (84)	3 (12)	-	1 (4)
The VLE is pleasant.	17 (68)	7 (28)	1 (4)	2 (8)
The VLE provides immediate feedback.	8 (32)	8 (32)	7 (28)	2 (8)
The VLE is didactic.	16 (64)	9 (36)	-	-
The VLE provides autonomy.	19 (76)	6 (24)	-	-
The VLE makes it possible to learn how to manage PCA due to respiratory failure in children.	13 (52)	12 (48)	-	-
With educational technology, I can choose what I want to learn.	12 (48)	11 (44)	1 (4)	1 (4)
The use of educational technology helps my learning.	16 (64)	9 (36)	-	-
I felt motivated to use educational technologies.	15 (60)	8 (32)	2 (8)	-
I believe that the time spent accessing the VLE was enough to enrich my learning.	10 (40)	15 (60)	-	-

The statement regarding immediate feedback received around two-thirds of positive responses and less than a third of students reported neither agreeing nor disagreeing with that statement.

Table 1 does not display the response option “strongly disagree”, since none of the participants marked it. Accordingly, the VLE was considered adequately evaluated, with

potential for use in teaching strategies for undergraduate nursing students.

The clinical simulation scenario evaluation questionnaire contained eight statements for students to give their responses regarding their agreement. These referred to the relevance and suitability of the scenario for their learning, the spatial-temporal organization, and the general

perspectives of students in the face of the educational activity. The responses given by students are displayed in Table 2.

Table 2. Distribution of absolute and relative frequencies of the responses given by students regarding clinical simulation (n =25), related to the items of the realistic simulation evaluation instrument, according to levels of agreement. Ribeirão Preto, 2018.

	Strongly agree n (%)	Agree n (%)	Neither agree or disagree n (%)
The clinical simulation was productive.	24 (96)	1 (4)	-
The topics covered during the activity are important.	25 (100)	-	-
The duration of the simulation was adequate.	19 (76)	6 (24)	-
The scenario was organized in such a way as to allow the materials to come together.	19 (76)	5 (20)	1 (4)
The simulation made it possible to put into practice the content available in the VLE.	23 (92)	2 (8)	-
The conduct of the researcher during the activity was satisfactory.	24 (96)	1 (4)	-
Pediatric CA simulation should be introduced into the schedule of classes of the discipline as a way to increase self-confidence.	24 (96)	1 (4)	-
I would recommend clinical simulation practice to other students.	24 (96)	1 (4)	-

Since there were no responses such as “disagree” or “strongly disagree”, these were not displayed in Table 2. All statements obtained positive agreement, reaching a percentage equal to or greater than 96%.

At the end of the proposed activities, students were submitted to a course evaluation questionnaire with a proposal for hybrid teaching in its entirety. The items addressed productivity, preparation, format, topics, duration, organization, expectations, role of the research team, possibilities for introducing the course into the academic curriculum and recommending the course to other students.

In all evaluated items, positive agreement equal to or greater than 92% of the statements was obtained. Two (8%) students reported neither agreeing nor disagreeing with the statement that suggested that the course provided sufficient preparation to face a pediatric CA situation with greater confidence and only one (4%) student reported neither agreeing nor disagreeing with the statement that the course met his expectations.

Finally, the hybrid teaching proposal was considered containing innovative educational technologies with multimedia in the VLE and clinical simulation scenario, evaluated from the perspective of undergraduate students in a positive way, showing potential for the construction of knowledge on pediatric CA caused by respiratory failure.

DISCUSSION

The elaboration and the use of contemporary teaching strategies are essential for meaningful learning and training of qualified professionals. That said, the results of this study made it possible to describe the development and the positive perception of nursing students regarding the use of a hybrid teaching proposal for the construction of knowledge on pediatric CA due to RF.

Hybrid teaching allows greater interaction between student and teacher and promotes exchange experiences focusing on the construction of specific knowledge, in addition to providing tools that encourage students to acquire autonomy, discipline and flexibility in a dynamic and personalized learning process⁽¹⁷⁻¹⁹⁾.

This is a strategy that seeks to value the construction of knowledge and increase the satisfaction of students in the teaching process. It promotes the development of a sense of responsibility in students, as they are the protagonists in terms of organizing their time and dedication during online activities to meet the demands of the proposed activities⁽¹⁷⁾. By offering the course with several virtual learning objects and allowing continuous access, the hybrid proposal constructed in this study considered the development of autonomy and responsibility on the part of students, asking them to take a more active and participatory position in the construction of their knowledge.

In higher education, hybrid teaching strategies

seek to meet social, economic and knowledge management training demands⁽¹⁸⁾. Hybrid teaching must be an articulated tool, with students dictating the tools and best strategies for their learning during their asynchronous activities mediated by technology. After that, they are inserted into a collaborative scenario developed from the perspective of the teacher, who must seek to continue distance learning and explore the constructed knowledge face-to-face⁽¹⁸⁾. Following this principle, the development of the hybrid course considered the activities to be included in the VLE, in order to cover all students with different learning preferences, and then insert them into a face-to-face, but active, activity where students could carry out collaborative and practical activity of the knowledge constructed in the VLE.

A Brazilian literature review study showed that the hybrid teaching approach provided better development and active participation in activities and group discussions for shy students⁽¹⁷⁾. The authors highlight that the approach valued collaborative activities and the development of teamwork skills⁽¹⁷⁾. In this sense, by carrying out synchronous activities remotely and face-to-face proposed by hybrid learning, students were able to interact with each other and develop communication and teamwork skills.

As it is a recent teaching methodological strategy in Brazil, there are weaknesses to be considered, such as, for example, teachers developing technical skills, specific pedagogical and conceptual knowledge, in addition to the lack of legislation and regulatory documentation from higher education institutions on the implementation of this teaching strategy, as well as the lack of physical resources such as computers and internet in the households of students⁽¹⁷⁾. The research team for this study had technological skills that facilitated the development of the proposal and was also assisted by the physical and human resources available at the HEI where the study was developed. It is understood that, in divergent scenarios, the implementation of the developed approach may encounter challenges not experienced in this study.

Furthermore, the recent global scenario, of an emergency nature regarding the COVID-19 pandemic, elucidated the weaknesses unveiled by

teachers who had deficiencies in knowledge and skills for the context of teaching mediated by technological and digital resources, reinforcing the importance of preparing and bringing these resources together to effectively promote knowledge construction^(20,21). The team for this study counted on the collaboration of technicians who were available during the development and maintenance of the difficulties faced during the study.

Authors⁽²²⁾ indicated four challenges for creating hybrid teaching strategies, namely: soften, interact, facilitate the learning process of students and promote an affective learning environment. These variables were considered in the creation of the hybrid teaching course introduced here, where the VLE allowed flexibilization regarding the use in the time, date and period of access to materials, followed by moments of interaction during chat sessions and realistic simulation scenarios. Thus, it was sought to facilitate the learning of students by offering diverse materials and different learning methodologies (reading, video, chat and simulation) on the same content. The researchers were concerned on the proximity and affection of the students during the experience to validate hybrid teaching.

A study carried out with healthcare professionals from the Netherlands, Lithuania and Austria explored the perception of effectiveness and appeal of a course that used problem-based learning and hybrid methods through VLE. The perceptions of these professionals varied between the studied countries and assumed this finding due to the lack of experience with teaching approaches, differences in training, inexperience in communicating in virtual environments and different expectations regarding the course⁽²³⁾.

It is important that there is institutional encouragement and constant teaching training for the development of courses and disciplines. Preparing students and a teaching process that includes learning through the use of the hybrid teaching strategy also contributes to the achievement of the objectives stipulated for the teaching-learning process⁽¹⁷⁾.

Research⁽¹⁹⁾ has shown that hybrid teaching must combine online teaching strategies and active face-to-face methodologies to make better use of its tools and potentialities, an orientation corroborated in the current investigation, which

integrated VLE tool strategies into a realistic simulation scenario.

Searches have been developed with the purpose of identifying the potentialities and weaknesses of VLE for nursing education. A Korean proposal for teaching nursing through the use of VLE aimed at students identified that this teaching strategy promotes better performance, confidence and satisfaction among participants⁽²⁴⁾.

Just like VLE, training and workshops using clinical simulation scenarios have become an increasingly common practice in the training and teaching of nurses. Simulation training provides improvements in self-confidence, skills and clinical judgments and is important in communication and teamwork⁽²⁵⁾.

In addition to clinical skills, clinical simulation scenarios provide positive attitudinal changes in the conduct and coping of practical-clinical situations^(9,26). A study demonstrated an improvement in the anxiety of medical students undergoing surgery internships at a university in Iran, during their academic internship, who were involved in simulation activities prior to the beginning of their internship activities⁽²⁷⁾.

In this sense, it is observed that aggregating different strategies, associating DICT with active teaching methodologies has the potential to modify and construct knowledge of nursing students in a significant way. However, the weaknesses of this process must be considered so that strategies explore these aspects, with a view to improving this pedagogical approach.

During the process of developing hybrid teaching approaches, the pedagogical aspects of teaching must be explored. There is also a need to evaluate the process, as it is a fundamental part in terms of identifying modifications and constructions carried out during activities according to the objectives proposed by teachers⁽¹⁸⁾.

In the hybrid approach, the student evaluation process is an aspect that demands special attention and must be coherent with the proposals for the hybrid content offering. Feedback on each of the developed activities is important. Furthermore, hybrid teaching allows for individualized evaluations, which makes it possible to personalize teaching. Evaluation must be used as a continuous tool, and not as an indicator of student approval or failure; it must

aim at achieving educational objectives during the process⁽¹⁸⁾. As it is an educational proposal for evaluation from the perspective of students, feedback tools were not included in the VLE. However, there will be future insertion of feedback for application into the teaching-learning process.

Hybrid teaching strategies associated with active methodologies manifest themselves as a teaching methodology that underpins the teaching-learning process, assists in the training of nurses, promotes quality education and contributes to the achievement of the proposed educational objectives⁽²⁸⁾.

Hybrid teaching potentiates the promotion of knowledge construction on various subjects and is used in health education in professional training courses. However, there are few reports that address its implementation in the teaching of pediatric nursing practices, with a focus on pediatric urgencies and emergencies, such as PCA, and on specific content that allows complete and generalized training of nursing students in Brazil⁽²⁹⁾.

The limitations of this study relate to the convenience sample and the location where the study was conducted, limiting the generalization of the findings, as it was a controlled environment with several technological and physical resources available. In a scenario with greater limitations, the findings may differ from the data presented here.

CONCLUSION

A hybrid pedagogical proposal – consisting of a VLE and a realistic simulation scenario was developed and evaluated from the perspective of nursing students. The results indicate that this proposal was considered suitable for reproduction, replication and use for training and teaching the management of pediatric CA due to RF for nursing students. This study contributes to the dissemination of an innovative teaching approach with potential to assist in the training of nursing students. Sharing the methodological pathway for developing and evaluating a technological educational tool can influence future constructions of learning objects for the education of nurses on different topics, potentiating the teaching-learning process.

It is pointed out that, although the clinical case used to develop the educational proposal was validated by experts, the validation of the realistic simulation scenario was not carried out during this study, configuring this as a possible limitation of the research. It is also understood that the participation of students for convenience is a limitation of the study, since its replication in different scenarios and contexts would potentiate the findings introduced here. Identifying the

reasons for the loss of students who participated in the course also requires investigation for future implementations. The need for future investigations on the perception of teachers and the institutional aspects that stimulate and encourage the creation and the use of this format of educational material should be highlighted, in addition to expanding the target audience for the continuing education of professionals.

DESENVOLVIMENTO E AVALIAÇÃO DE PROPOSTA DE ENSINO HÍBRIDO PARA FORMAÇÃO DE ESTUDANTES DE ENFERMAGEM

RESUMO

Objetivo: desenvolver e avaliar uma proposta de ensino híbrido sobre parada cardiorrespiratória por insuficiência respiratória em pediatria. **Método:** estudo de aplicação, de abordagem quantitativa. Desenvolveu e avaliou uma proposta de ensino híbrido e um cenário de simulação clínica com estudantes de enfermagem sobre o manejo da parada cardiorrespiratória por insuficiência respiratória pediátrica a ser implementado em um ambiente virtual de aprendizagem, entre março e novembro de 2018. O ensino híbrido foi apresentado por meio de um curso, e o cenário de simulação clínica ocorreu em ambiente laboratorial. Utilizaram-se três formulários adaptados para avaliação da interface do ambiente virtual, do cenário de simulação e dos aspectos gerais do curso com ensino híbrido, avaliando o nível de concordância. **Resultados:** o ambiente virtual de aprendizagem foi construído em sete módulos, incrementado por multimeios. O cenário de simulação clínica representou uma enfermaria pediátrica e foi composto por atores e manequim de alta fidelidade. Participaram 25 estudantes de graduação. O curso híbrido teve duração de 30 dias. Obtiveram-se respostas favoráveis de 100% dos estudantes. **Conclusão:** a proposta de ensino híbrido sobre a parada cardiorrespiratória pediátrica foi construída e avaliada pelos estudantes de enfermagem e considerada como estratégia inovadora de ensino na perspectiva dos estudantes.

Palavras-chave: Educação em enfermagem. Multimídia. Treinamento com simulação de alta fidelidade. Enfermagem pediátrica. Parada cardíaca.

DESARROLLO Y EVALUACIÓN DE LA PROPUESTA DE ENSEÑANZA HÍBRIDA PARA LA FORMACIÓN DE ESTUDIANTES DE ENFERMERÍA

RESUMEN

Objetivo: desarrollar y evaluar una propuesta de enseñanza híbrida sobre parada cardiorrespiratoria por insuficiencia respiratoria en pediatria. **Método:** estudio de aplicación de enfoque cuantitativo. Desarrolló y evaluó una propuesta de enseñanza híbrida y un escenario de simulación clínica con estudiantes de enfermería sobre el manejo de la parada cardiorrespiratoria por insuficiencia respiratoria pediátrica a ser implementado en un ambiente virtual de aprendizaje, entre marzo y noviembre de 2018. La enseñanza híbrida fue presentada por medio de un curso, y el escenario de simulación clínica ocurrió en ambiente de laboratorio. Se utilizaron tres formularios adaptados para evaluar la interfaz del ambiente virtual, el escenario de simulación y los aspectos generales del curso con enseñanza híbrida, evaluando el nivel de concordancia. **Resultados:** el ambiente virtual de aprendizaje fue construido en siete módulos, incrementado por multimedios. El escenario de simulación clínica representaba una enfermería pediátrica y estaba compuesto por actores y maniquí de alta fidelidad. Participaron 25 estudiantes de pregrado. El curso híbrido tuvo una duración de 30 días. Se obtuvieron respuestas favorables del 100% de los estudiantes. **Conclusión:** la propuesta de enseñanza híbrida sobre la parada cardiorrespiratoria pediátrica fue construida y evaluada por los estudiantes de enfermería y considerada como una estrategia innovadora de enseñanza desde la perspectiva de los estudiantes.

Palabras clave: Educación en enfermería. Multimedios. Entrenamiento con simulación de alta fidelidad. Enfermería pediátrica. Parada cardíaca.

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