Implementation of a lesson plan model in the nursing laboratory: strengthening learning

Implementação de um modelo para roteiros de aula no laboratório de enfermagem: fortalecendo a aprendizagem

Implementación de un modelo para planes de clase en el laboratorio de enfermería: fortalecer el aprendizaje

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Alessandra Vaccari[a,b] ⓘ
Gabriela Figueiredo Farias[b] ⓘ
Débora Schimitt Porto[b] ⓘ

ABSTRACT

Objective: To describe the experience of implementing a lesson plan model for skills training as a learning tool in undergraduate nursing.

Method: An experience report on the implementation of a structured plan model for skills training in a nursing laboratory at a public university in southern Brazil. The activities were developed between May/2018 and April/2019.

Results: The implementation process was divided into stages: literature review, work process, division of tasks, validation, pilot test, reformulation, dissemination and use. There was a growing link between professors and the laboratory staff regarding planning and management of classes, as well as the improvement of logistics for the organization of materials and simulators.

Conclusion: The implementation of lesson plans represented an important contribution to the qualification of the teaching and learning process for students and professors.

Keywords: Simulation. Motor skills. Teaching materials. Educational technology. Nursing education. Higher education.

RESUMO

Objetivo: Descrever a experiência da implementação de um modelo para roteiros de aula para treino de habilidades como ferramenta de aprendizagem na graduação em enfermagem.

Método: Relato de experiência sobre a implementação de um modelo de roteiro estruturado para o treino de habilidades em um laboratório de enfermagem em uma universidade pública no sul do Brasil. As atividades foram desenvolvidas entre maio/2018 e abril/2019.

Resultados: O processo de implementação foi dividido em etapas: revisão da literatura, processo de trabalho, divisão das tarefas, validação, teste piloto, reformulação, divulgação e utilização. Foi observado uma crescente ligação entre os docentes e a equipe do laboratório em relação ao planejamento e gerência das aulas, bem como, o aperfeiçoamento da logística para a organização dos materiais e simuladores.

Conclusão: infere-se que a implementação dos roteiros de aula representou uma importante contribuição na qualificação do processo de ensino e aprendizagem para os estudantes e os docentes.

Palavras-chave: Simulação. Destreza motora. Materiais de ensino. Tecnologia educacional. Educação em enfermagem. Educação superior.

RESUMEN

Objetivo: Describir la experiencia de implementación de un modelo de planes de clase para la capacitación de habilidades como herramienta de aprendizaje en la graduación en enfermería.

Método: informe de experiencia sobre la implementación de un modelo de planes de clase estructurado para la capacitación de habilidades en un laboratorio de enfermería en una universidad pública del sur de Brasil. Las actividades se desarrollaron entre mayo/2018 y abril/2019.

Resultados: El proceso de implementación se dividió en etapas: revisión de la literatura, proceso de trabajo, división de tareas, validación, prueba piloto, reformulación, divulgación y utilización. Se observó una creciente conexión entre los docentes y el equipo del laboratorio en relación a la planificación y gestión de las clases, así como el perfeccionamiento de la logística para la organización de los materiales y simuladores.

Conclusión: La implementación del plan de clase representó una importante contribución en la calificación del proceso de enseñanza y aprendizaje para los estudiantes y los profesores.

Palabras clave: Simulación. Destreza motora. Materiales de enseñanza. Tecnología educacional. Educación en enfermería. Educación superior.

[a] Universidade Federal do Rio Grande do Sul (UFRGS). Escola de Enfermagem, Departamento de Enfermagem Materno-Infantil. Porto Alegre, Rio Grande do Sul, Brasil.

[b] Universidade Federal do Rio Grande do Sul (UFRGS). Escola de Enfermagem, Laboratório de Práticas de Enfermagem (LAPENF). Porto Alegre, Rio Grande do Sul, Brasil.

■ INTRODUCTION

The current literature on the learning process indicates that students learn best when practicing their own skills in appropriate, safe and controlled environments, actively participating in their learning process. As nursing is a fundamentally practical profession, active learning for patient care has always been the preferred method for gaining professional skills[1–3].

Simulation-based teaching has been used in undergraduate nursing and demonstrates consistency with the current objectives for the training of this professional. In the national curriculum guidelines, in which psychomotor skills and competences should be developed, it is necessary for the student to have strategies that combine caring, scientific knowledge and practical skill[4–5].

Skill development can be built on low complexity simulation, or also called skills training. It uses low or medium fidelity simulators, but with the necessary resources for the most realistic reproduction possible of the procedure to be performed, bringing students closer to the practice they will perform with humans in the future[6].

Incorporating skills training into learning activities implies planning and systematization of the stages of the teaching activity, always in accordance with the learning objectives planned by the professor. For effective learning does not happen only by repeating or observing a procedure with a simulator. Mastery of a skill requires repetition in a safe environment, available for error, with the possibility of teacher intervention in the mental processes and cognitive resources that motivate the student to learn. For this, it is essential that the students critically reflect on the professor's opinion about their performance[7].

Therefore, this paper aims to describe the experience of implementing a lesson plan model for skills training as a learning tool in undergraduate nursing. There are still few publications in the literature on teaching materials, such as plans, for organization and logistics of skills training; thus, the relevance of the study lies in sharing this challenge, assisting nursing education laboratories in planning and executing their own models of lesson plan. It is also believed that with a structured plan, skills training will be more systematic and this will influence the student's learning process.

■ METHOD

This is an experience report on the implementation of a structured plan model for skills training at the Nursing Practice Laboratory (*Laboratório de Práticas de Enfermagem*, LAPENF)

of the Nursing School of the Federal University of Rio Grande do Sul in the city of Porto Alegre/RS.

The LAPENF is located on the first floor of the school and its physical area covers around 90 m^2 divided into four spaces: skills training room, simulated ward, realistic simulation room and administrative room/stockroom used for public service, preparation/organization of classes and maintenance of simulators. In 2018, approximately 1,100 people participated in the 274 activities developed in the LAPENF, including the following: undergraduate and postgraduate nursing students, faculty, university staff and external public; and 90% of the activities were practical classes or skills training for undergraduate nursing. The current laboratory staff is composed of a nursing professor, two nurses, a nursing assistant and two scholarship nursing students.

The plan model for skills training was implemented from May 2018 to April 2019, and followed eight sequential phases of work: 1) review of national and international literature, 2) definition of the work process, 3) division of tasks among team members, 4) validation of the material by the school board, 5) pilot test of the model, with two courses, 6) reformulation of the material, 7) presentation and distribution of the plan model in departmental meetings and 8) wide use of the plan model by all undergraduate courses using the laboratory.

■ RESULTS

From May 2018 to April 2019, a plan model to train nursing undergraduate skills was implemented. The work process was divided into eight phases, for clarity and execution by the team. Each phase of the work is described below.

The work began with a review of national and international literature, to understand the state of the art on the subject involved. Then, as a second phase of work, in one of the team's regular meetings, it was defined that the creation of teaching materials would start with the training of undergraduate nursing skills, as it is the largest demand for laboratory activities.

At the same meeting, it was decided to name this first model with the name "lesson plan", as it is a well-known nomenclature locally, in the team's inference. Subsequently, tasks were divided among the professionals involved to create a structured plan model; this was the third phase of the process.

Due to the lack of specific publications on the creating of teaching materials for skills training, the team decided to use the guidelines published by the *International Nursing Association for Clinical Simulation and Learning*[8]. These guidelines focus on the best practices in realistic simulation

(high-complexity simulation) and creation of scenarios for realistic simulation; however, they offer recommendations for skills training (low-complexity simulation), which guided the creation of this model.

In the fourth phase, the lesson plan model was shared with the school board for evaluation and necessary suggestions. After validation, the plan was ready for use by the university professors. However, before the wide use of the material, the pilot test of the model was performed with two undergraduate courses, namely Newborn, Child and Adolescent Nursing Care, in the sixth semester, and Public Health Nursing Care II, in the seventh semester; their selection was based on proximity to the laboratory's coordinating professor. Each subject used the plan model in their skills training and suggested improvements, which were evaluated and included in the material.

One of the changes suggested by the subjects was adapting the model for use in both laboratory practical classes (those in which the professor uses the laboratory to demonstrate a practice or explain scientific content with the help of materials and simulators) and skills training (in which students are instructed to perform the procedure repeatedly, with greater reliability, aimed at developing the actual skills)[6–7].

With the lesson plan model ready and reviewed, visits were made to the meetings of the four departments of the school, for presentation and distribution of the material; the availability of laboratory staff for consulting on the methodology applied in the plan model was also informed. Thus, in the last phase of implementation, the material began to be used by all undergraduate nursing courses with laboratory activities; its use has even been expanded to the school-based *lato sensu* specialization courses.

The plan model structured for practical classes and/or skills training, as shown in Figure 1, has the following items: Identification of the class, subject, professors, number of students, date, time and duration; General learning objective of the class; Skills to be developed; Information for the

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LABORATÓRIO DE PRÁTICAS DE ENFERMAGEM-LAPENF
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Nome da aula:
Disciplina:
Docente:
Turma: Nº acadêmicos:
Obs.:

Local da aula: Data:
Tempo de Duração: Horário:
Objetivos geral da aula:
Competências mínimas esperadas a serem alcançadas nesta aula:

Montagem da aula e materiais necessários (para a equipe do laboratório):

Estação 1 (o ideal são de 4 a 5 estações de aprendizagem, dependendo da duração da aula e de cada estação)
Nome da estação:
Objetivo específico de aprendizagem:
Tempo de duração da estação:
Materiais necessários na estação:
Check List da estação:
Referencial bibliográfico da estação:

Feedback

Materiais para estudos extraclasse:

Referencial para construção do roteiro "Aula Prática e/ou Treino de Habilidades":
DAL SASSO, G. M.; SEBOLD, L. F.; KEMPFER, S.; OLIVEIRA, S. N. **Guia Metodológico para simulação em enfermagem: CEPETEC.** Universidade Federal de Santa Catarina. Centro de Ciências da Saúde. Departamento de Enfermagem. Florianópolis, 2015.
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SCALABRINI AN, FONSECA AS, BRANDÃO CFS. **Simulação realística e habilidades na saúde.** Rio de Janeiro: Editora Atheneu; 2017.

Figure 1 - Example of the structured plan model
Source: Prepared by the authors.

laboratory staff on the setting up of learning stations (number of stations, number of students per station, need to set up stations in sequence or in a circle); Detailed description of each station (name, specific learning objective, list of materials and simulators with the number of items, step-by-step description for making the station in *checklist* format – this should be detailed so that the student can make the station and use in their out-of-class *studies,* bibliographic reference); *Feedback* Description – closing and providing feedback to the student of each station or class; Indication of exercises or other materials for out-of-class study (may include games, videos, scientific papers, among others).

The implementation of a lesson plan model quickly reflected in a positive reorganization in the logistics of materials, simulators and laboratory rooms; generating a better management of the sector agenda and all the supplies/simulators used in the classes. The team infers an increase in the quality of communication with professors and their greater adherence to the planning and management of their classes; they also informally received praise from students regarding the use of structured plans.

■ DISCUSSION

Active methodologies emerge in the education context breaking with traditional teaching. For nine years, the LAPENF team has been disseminating and developing the types of simulation, which is characterized as a systematic, technical and rational process to achieve professional skills, bringing students closer to the most real scenario possible, within a controlled and safe environment, qualifying the teaching[1,3,8].

Currently, it is understood that skills training is fundamental in the acquisition of essential technical skills in nursing education. In this sense, it is important that the activities are planned according to an increasing order of complexity, respecting the student's level of knowledge and year at the university[1,8]. For the creation of learning objectives observing the complexity of each class, LAPENF suggests to professors the use of Bloom's Taxonomy proposed by Anderson, Krathwohl and Airasian; aimed to connect the objectives of the class with the professional skills to be developed indicated in the national nursing curriculum guidelines[5,9].

Regarding the theoretical foundation, for the success of the activity and achievement of the objectives set, it is necessary that the scientific theoretical basis be discussed with the students prior to the activity in the laboratory. In this context, the skills training should be based on the best levels of evidence available and on real facts, and not justified by personal experiences of the professors, a fact that strengthens the students' confidence. In addition, it is important to take into account principles such as simplicity, brevity, objectivity, reality and scope. Skills training should be simple, limited to data that will assist students in completing the activity[1,8].

Structured plans should be assigned to a subject or teaching program; and are planned, created and updated by professors who are experts in the field. After the technical content is ready, professionals can contribute with knowledge of simulated practices in order to assist with materials/simulators and characteristics related to the methodology of practical classes and/or skills training[7].

These plans are teaching tools used as a product of consensus among professors who are experts in a field of knowledge, in order to unify behaviors. It is often observed in nursing, before a procedure, students asking the professor how they should perform the procedure; this doubt arises from conflicting information that is sometimes passed on to the student through different materials or guidelines[8]. In these cases, the structured plan adds value in order to avoid this scenario that confuses students as a result of receiving multiple points of view when there should be a common denominator in the implementation of best practices[6–8].

Based on the aspects contemplated in the structured plan model implemented by the LAPENF, these are the indications professors should follow to prepare their classes: previous knowledge of the student, learning objective of the class, preparation of the station as reliable as possible (knowledge of available materials and simulators is important), theoretical grounding, preparation of a practical station (in the form of sequential items to be performed by the student, for example, a *checklist*), student performance (*feedback*) and assessment of the teaching and learning process. With the possibility to include tasks for the student to reinforce the scientific knowledge after class[1,6,8].

■ CONCLUSIONS

The implementation of a structured plan model for laboratory practice and/or skills training, in the laboratory staff's view, was an important contribution to the qualification of the teaching and learning process for the university students using the laboratory. The LAPENF team argues that the use of the plan directs the expected results through the learning objectives outlined, going through a previous planning of several aspects of the class. However, we understand that this process has not yet been exhausted, as it is a change and adaptation of professors. Therefore, the team remains available for advice and assistance on all items of the lesson plan model.

An improvement in the logistics of class preparation in the laboratory was also observed with the use of the

plan model, since with the structured plan it is possible to pre-dimension and improve the availability of materials and simulators needed in each class.

We know that the choice of subjects, for convenience, to conduct the pilot test may have been a limitation in the suggestions received for the implemented version of the plan model. Therefore, the current model remains open to suggestions for improvements identified by the courses.

The team does not yet have data on adherence or evaluation of the use of the plan model by the courses. Therefore, it is suggested more studies for validation of the material implemented by the LAPENF, testing it systematically, as it is an important tool in practical classes and/or training of nursing skills. Finally, we also verified the need for future research focused on analyzing the repercussions on nursing care of these students who used this material in their undergraduate courses.

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▪ Corresponding author:
Alessandra Vaccari
E-mail: alessandra.vaccari@ufrgs.br

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