

## GINCANA PARA O ENSINO DE IMUNIZAÇÃO AOS ACADÊMICOS DE ENFERMAGEM: RELATO DE EXPERIÊNCIA

### GAMES FOR TEACHING IMMUNIZATION TO NURSING STUDENTS: EXPERIENCE REPORT

## GINCANA PARA LA ENSEÑANZA DE INMUNIZACIÓN A LOS ACADÉMICOS DE ENFERMERÍA: RELATO DE LA EXPERIENCIA

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### RESUMO

**Objetivo:** Descrever a experiência na construção e aplicação de uma gincana para o ensino de imunização aos acadêmicos de Enfermagem. **Método:** Trata-se de um relato de experiência de uma gincana que foi construída com base em cinco jogos adaptados ao conteúdo de imunização: dramatização, paródia, tabuleiro, palavra cruzada e verdadeiro ou falso. Esse conteúdo é abordado na disciplina de Enfermagem em Saúde da Criança e do Adolescente de uma Universidade Pública do Centro-Oeste Brasileiro. **Resultados:** Todos foram aplicados para acadêmicos de Enfermagem, durante duas aulas, com duração de oito horas. Os acadêmicos são divididos em quatro grupos e vence o grupo que obtiver maior pontuação na gincana. A maior dificuldade encontrada foi a falta de preparo por parte dos alunos para a gincana, com pouco estudo prévio sobre a temática, consequência de os estudantes não estarem habituados a trabalhar em grupo de forma participativa, assumindo o protagonismo do seu aprendizado. Entretanto, considera-se que os jogos foram recursos positivos para a resolução de problemas e reflexão sobre o conteúdo teórico. **Conclusão:** Conclui-se que os jogos podem ser utilizados no ensino, quando adaptados ao conteúdo desejado, pois permitem o aprofundamento teórico de maneira lúdica e prazerosa aos estudantes.

**Descritores:** Educação em enfermagem; Estudantes de enfermagem; Jogos e brinquedos; Material de ensino.

### ABSTRACT

**Objective:** To describe an experience of construction and application of a game section for teaching immunization to nursing students. **Method:** This is an experience report of a game section that was built based on five games adapted to the immunization content: dramatization, parody, board, crossword and true or false. This content is addressed in the Child and Adolescent Health Nursing course at a Public University in the Midwest of Brazil. **Results:** The games were applied to nursing students during two classes, lasting eight hours. The students were divided in four groups and the group with the highest score in the contest was the winner of the competition. The greatest difficulty encountered by the students was their lack of preparation for the competition, with little previous study about the topics, which was a consequence of the lack of the habit among students of working in groups in a participatory way, assuming a protagonist learning behavior. However, it is considered that the game section was a positive resource for solving problems and reflecting on the theoretical content. **Conclusion:** It is concluded that games can be used in teaching when adapted to the desired content, since they allow theoretical deepening in a playful and pleasurable way for students.

**Descriptors:** Nursing Education; Nursing Students; Games and toys; Teaching materials.

### RESUMEN

**Objetivo:** Describir la experiencia en la construcción y aplicación de una gincana para enseñar inmunización a estudiantes de enfermería. **Método:** Este es un informe de la experiencia de una gincana que se construyó con base en cinco juegos adaptados al contenido de inmunización: dramatización, parodia, tablero, crucigrama y verdadero o falso. Este contenido se aborda en la disciplina de Enfermería en Salud Infantil y Adolescente en una Universidad Pública del Medio Oeste de Brasil. **Resultados:** Todos se aplicaron a estudiantes de enfermería durante dos clases, con una duración de ocho horas. Los académicos se dividen en cuatro grupos y gana el grupo con la puntuación más alta en el concurso. La mayor dificultad encontrada fue la falta de preparación por parte de los estudiantes para la competencia, con poco estudio previo sobre el tema, una consecuencia de que los estudiantes no estaban acostumbrados a trabajar en grupos de manera participativa, asumiendo el protagonismo de su aprendizaje. Sin embargo, se considera que los juegos fueron recursos positivos para resolver problemas y reflexionar sobre el contenido teórico. **Conclusión:** Se concluye que los juegos se pueden usar en la enseñanza cuando se adaptan al contenido deseado, ya que permiten la profundización teórica de una manera lúdica y placentera para los estudiantes.

**Descritores:** Educación en Enfermería; Estudiantes de Enfermería; Juego e Implementos de Juego; Materiales de Enseñanza.

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#### How to cite this article:

Freitas BHBM, Games for teaching immunization nursing students: experience report. Revista de Enfermagem do Centro Oeste Mineiro. 2020 ;10:e2959.[Access \_\_\_\_]. Available in: \_\_\_\_\_. DOI: <http://doi.org/10.19175/recom.v10i0.2959>

## INTRODUCTION

Breaking with traditional teaching models in health professions in force until present, basically based on an approach of transmission of information in which students assume a passive role in the teaching-learning process, is currently the major challenge in higher education<sup>(1)</sup>.

Specifically, the training of nurses still occurs mostly through expository teaching in classes, without effective participation of students in the construction of knowledge<sup>(2)</sup>. To change this paradigm, a dialogic relationship between educator and student is necessary, so as to enable mutual learning through an emancipatory process<sup>(3)</sup>. One of the ways to achieve this purpose is mediated learning.

Mediated learning is a form of interaction that produces basic attitudes and skills for effective learning, providing opportunities for structuring knowledge. The mediator stands between the learner and the world of stimuli, opening possibilities of interpretation and meaning. One of the mediators of the teaching-learning process is the use of games, which are an alternative method that generate stimuli for the students<sup>(4)</sup>.

Educational games are those that have a clear didactic design and can be adopted or adapted to improve, sustain or facilitate the learning processes. These games contain rules and allow entertainment, and like any other didactic and methodological resource, require the definition of objectives and consistent strategies<sup>(5)</sup>.

Educational games have been used as teaching resources in several areas of knowledge, including, Medicine, Nursing, Pedagogy, Psychology and Arts. The reports tell that the games have a motivating nature, as they incite the players and provide an opportunity for discussion. In the context of the game, while the player learns the educational content that makes up the game, not only the arbitrary reinforcers are created, but also the consequences inherent to the learning itself<sup>(6)</sup>.

Games are considered not only as an interactive and motivating resource but also a technology capable of generating learning, promoting dialogue, facilitating the approach to themes, clarifying doubts and debating everyday situations<sup>(6)</sup>. This is only possible when the material is based on the context in which the learners are inserted, on their experiences, so

that, from these parameter, knowledge can be built.

Participation in games also allows students to know educational materials that can contribute to a more participatory teaching, an essential technology in nursing educational practices. Thus, teaching materials add a dynamic character to health education activities. The role of nurses as educators is fundamental for the empowerment of individuals, families and communities with a view to improving health conditions and quality of life<sup>(7)</sup>.

The nursing training process must enable individuals to become critical-reflective and political, preparing them to be transforming agents in the society in which they work. Changes in the pedagogical training practice contribute to this purpose<sup>(3)</sup>. In nursing, the use of games in teaching is recognized as a promoter of interaction and involvement among participants, stimulating interest in a given topic and providing elements for changing attitudes<sup>(8)</sup>.

Thus, pedagogical experiences aimed at changing processes represent an innovative movement in the re-elaboration of meaningful learning for students, favoring the break of traditional educational paradigms and legitimizing broader movements for change<sup>(1)</sup>. In this sense, the aim of this study was to describe the experience in the construction and application of a game section for teaching immunization to nursing students.

## METHOD

This is a report of the experience of a teacher with the construction and application of a game section for teaching immunization to nursing students at a Public University in the Midwest of Brazil.

The content of immunization is covered in the course of Child and Adolescent Health Nursing, based on the assumption that the training of nurses aims to provide professionals with the necessary knowledge to exercise the Health Care competence with the skills to develop preventive and health promotion actions at the individual and collective level. It is known that immunization is one of the most effective strategies to reduce child morbidity and mortality and health costs<sup>(8)</sup>.

The Child and Adolescent Health Nursing course is offered in the seventh semester, in the respective undergraduate course, with eight hours available for working on the programmatic

content, which involves the entire National Immunization Plan, guidelines from the Norms and Procedures for Vaccination, and the Epidemiological Surveillance of Post-Vaccination Adverse Events, and nursing care in immunization.

The construction of the theoretical game section for the teaching of immunization took place in April and May 2017, with the aim of establishing game-mediated learning, enabling a more meaningful learning when compared to the dialogued expository classes previously offered, from the perspective of the teacher. The game section has been applied every semester since then, in the two classes dedicated to this content, with students enrolled in the course.

## RESULTS AND DISCUSSION

### Construction of the theoretical game section for teaching immunization

The theoretical construction of the game section was based on the National Immunization Plan, the Manual of Norms and Procedures for Vaccination, and the Manual of Epidemiological Surveillance of Post-Vaccination Adverse Events of the Ministry of Health and other materials about nursing care in immunization.

The game section was composed of five didactic games, as shown in Box 1, and was designed to be carried out with the formation of four groups (A, B, C and D) whose components would be selected by lot. Games are understood as a challenging dynamic that guarantees dynamism among people with a common interest and aim at recreation and construction of knowledge among peers, allowing reflections and associations with professional practice<sup>(4)</sup>. In addition, problem solving and critical thinking are educational objectives that can be achieved with the use of games<sup>(9)</sup>.

Box 1- Game, objective, knowledge addressed and time of application in the game section for teaching immunization to nursing students. Cuiabá, MT, Brazil, 2020.

Game	Objective	Knowledge addressed	Application time
Dramatization	Group A: To demonstrate the fundamentals of immunobiologicals, through a class to nursing students. Group B: To demonstrate the beginning and the end of daily work in the vaccination room. Group C: To demonstrate how a child should be received and vaccinated. Group D: To demonstrate the necessary guidelines for Post-Vaccination Adverse Events (PVAE) common to various immunobiologicals and the procedures.	- Fundamentals of immunology; - Organization and operation of the vaccine room; - Equipment and supplies of the vaccination room; - Reception; - Therapeutic Toy; - Contraindications to immunobiologicals; - Administration of immunobiologicals; - Intervention for pain relief; - PVAE common to several immunobiologicals; - Procedures in the case of PVAE common to several immunobiologicals.	3 hours
Parody	To present a parody about the vaccination schedule.	- Vaccination calendar; - Playfulness - Creativity.	1 hour
Board	To understand the concept of vaccine, situations of postponement, indication, schedule, maximum and minimum age, dose and route of administration of vaccines.	- Concept of vaccine; - Situations of postponement of a vaccine; - Indication, schedule, maximum and minimum age, dose and route of administration of the vaccines.	2 hours
Crosswords	To reflect on the National Immunization Plan and the Norms and Procedures for Vaccination.	- National Immunization Plan; - General vaccination norms and procedures.	1 hour
True or false	To discuss Epidemiological Surveillance of Post-Vaccination Adverse Events.	Epidemiological Surveillance of Post-Vaccination Adverse Events.	1 hour

Source: The authors.

A dramatization previously prepared by the students must be presented in 30 minutes by each group followed by 15 minutes at the end for discussion among peers. The teacher must participate by exposing the positive and negative aspects of the presentation, according to the recommendations from the Ministry of Health and other materials provided. Groups that comply with the objectives set out score five points in the competition.

Then, the presentation of the parody in a creative and playful way culminates in five points. At the end of the presentations, the vaccination calendar is presented to the students on the blackboard by the teacher and the doubts are clarified.

On the second day of class, the other games are applied. First, the board game, in which each leader of the groups must roll the dice and move that many spaces corresponding to the number drawn. The game has 38 spaces, 15 of which are numbers, 15 are stops with questions, two are bonus, five are penalties, and then the end (Figure 1).

The stops present questions about the concept of vaccination, postponement situations, indication, schedule, maximum and minimum age, dose and route of administration of the vaccines. If the player answers correctly, he advances a few spaces, and if he answers incorrectly, he goes back a few spaces, according to the game's guidelines. The bonus spaces correspond to positive attitudes described in the house, such as: "Congratulations, you applied the therapeutic toy. Move on two spaces"; and the penalty spaces correspond to attitudes and

respective penalties such as "You forgot to wash your hands, go back to the start". These statements highlight the assertive and non-assertive attitudes that nursing professionals may have in the vaccination room and promotes reflections on the practice.

The game was printed on canvas, measuring 100 cm in height and 80 cm in width, requiring a dice and four colored tokens, one for each group of competitors. The group that arrives in the end first scores 15 points in the competition, the one which arrives in second place, 10 points, and in third place, five points. At the end, the theme of the game should be summarized in order to address the main doubts of the students.

The fourth game corresponds to a crossword. Each group has a form in hand to answer together (Figure 2), following the guidelines in Box 2. The group that finishes first with 100% correct answers scores 10 points in the competition. Then, all statements that raised doubts in the students are reviewed.

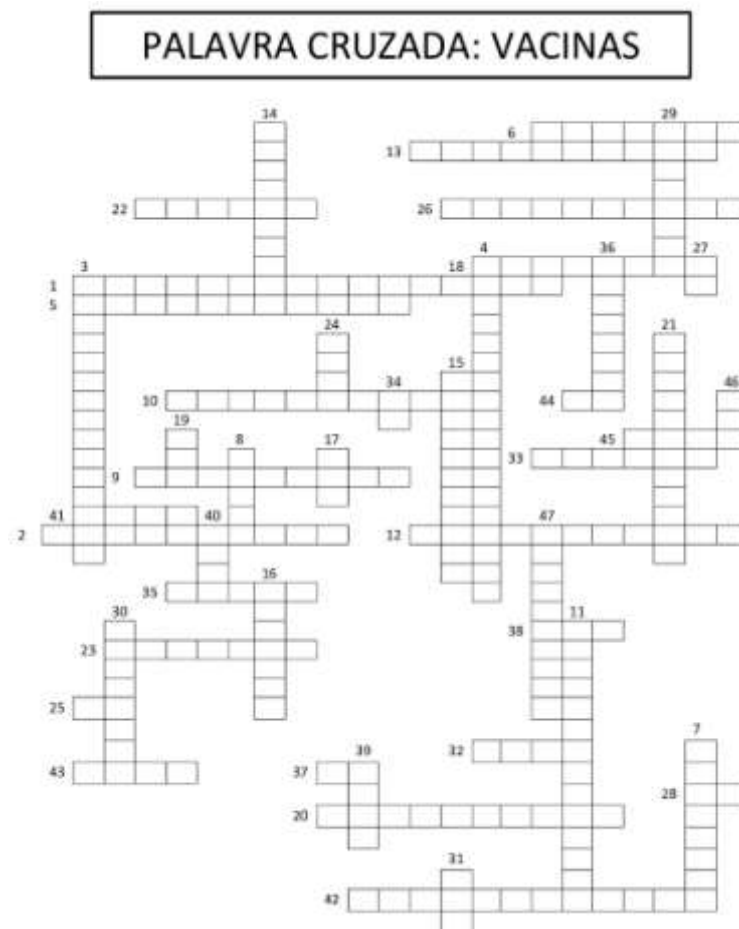
To conclude, the fifth game is a true or false game, elaborated in the Kahoot!® application, composed of thirty-two statements about the Epidemiological Surveillance of Post-Vaccination Adverse Events and each group has to respond according to what they believe, whether they find it is true or false. The team with the more correct answers scores 10 points in the competition. All doubts expressed by the students are also clarified after the end of the game. The group with the highest score wins.

Figure 1- Board game for the theoretical game section for teaching immunization to nursing students. Cuiabá, MT, Brazil, 2020.



Source: The author.

Figure 2- Crossword for the theoretical game section for teaching immunization to nursing students. Cuiabá, MT, Brazil, 2020.



Source: The author.

Box 2- Guidelines for filling in the crossword for the theoretical game section for teaching immunization to nursing students. Cuiabá, MT, Brazil, 2020.

1. The mission of the National Immunization Program is to control, eradicate and eliminate which diseases?
2. It is the form of definition of vaccines offered in the routine of health services.
3. It is one of the immunobiologicals provided by the National Immunization Program.
4. The way in which the immune system acts more slowly, with the production of specific antibodies.
5. Site where cells of the immune response are developed.
6. Immunity mediated by B lymphocytes.
7. Response in which the first class of immunoglobulin to be produced is IgM and, subsequently, IgG.
8. Immunity obtained by stimulating the immune response with the production of specific antibodies.
9. They should not receive live vaccines, as there is a possibility that live attenuated antigens cause some alteration, such as malformation.
10. Some individuals may present this type of reaction to some components of immunobiologicals.
11. These patients should be evaluated, on a case-by-case basis, for proper administration of immunobiologicals.
12. Its use as a prophylactic agent is recommended only in children with a personal and family history of seizures and for those who have already presented hyperthermia or uncontrollable crying after a previous dose of the DTP vaccine.
13. Substances present in the composition of some vaccines and that increase the immune response of products that contain inactivated microorganisms and their components.
14. Technician responsible for the vaccine room.
15. Attitude of inclusion in the vaccination room.
16. Selection or classification process in which users are submitted in order to determine those who have priority.
17. Diphtheria, tetanus and pertussis vaccine (initials).
18. Its management must comply with the definition established in RDC ANVISA nº 306 of 2004.
19. Place to which infectious residues must be sent within a milky white bag in the collection boxes (initials).
20. System used by the PNI, which aims to ensure that immunobiologicals are kept in adequate conditions.
21. Logistic process that involves the receipt, storage, distribution and transport of immunobiologicals.
22. Place where immunobiologicals are in the vaccine room.
23. Important inputs for the conservation of immunobiologicals in the thermal boxes.

“Continues on next page”

24. Route of administration of the oral poliovirus vaccine (OPV).
25. Route of administration of the BCG vaccine (initials).
26. It should not be done in the administration site of the BCG vaccine.
27. Route of administration in which the vaccine is introduced into the hypodermis (initials).
28. Route of administration in which the maximum volume is up to 5 ml (initials).
29. It must be done in the child's vaccination booklet.
30. Rate that measures user adherence to the immunization program.
31. Scope of availability of immunobiologicals free of charge (initials).
32. Place of referral of users who underwent bone marrow transplantation (initials).
33. It must occur with the vaccination of individuals using an immunosuppressive corticosteroid drugs.
34. Disease prevented by the BCG vaccine (initials).
35. Vaccine that has a three-dose schedule, at 2, 4 and 6 months (initials).
36. One of the diseases that can be prevented by DPT vaccine.
37. Vaccine that is boosted every 10 years (initials).
38. Inactivated vaccine indicated to prevent polio (initials).
39. Number of doses of the polio vaccine.
40. Number of months in which the child must have the first booster vaccination against pneumonia.
41. Number of months the child is vaccinated against yellow fever.
42. Vaccine indicated to prevent invasive infections such as sepsis, meningitis, and acute otitis media.
43. Ideal place to put the child with the body reclined for the administration of the rotavirus vaccine.
44. Vaccine known to be indicated for travelers to areas at risk for the disease (initials).
45. It can happen after vaccination and should be investigated (initials).
46. Vaccine that must be administered specifically in adolescence (initials).
47. Vaccine that protects against measles, mumps, rubella and chickenpox.

Source: The author.

### **Application of the game section to nursing students**

Before the game section, students enrolled in the Child and Adolescent Health Nursing course are informed about the game section, at the beginning of the school year, and the teaching materials related to it are distributed to students for their prior analysis. Communication between teacher and students occurs during about fifteen days before the programmed activity, in order to provide the opportunity to prepare the students for it. Then, the game section is conducted on the day of the classes dedicated to Immunization.

The preparation of the students involves the study of the programmatic content of the class, the creation and rehearsal of the dramatization and of the parody, components of the educational game section.

Dedication on the part of the students regarding the dramatization and the parody is noticeable, but there is some difficulty in the application of the other games because few students study the content as previously recommended. This at some times compromises the discussion among peers, due to their little knowledge about the content, since theoretical preparation of the students is essential for the development of these activities.

During the dramatization, it is possible to identify both assertive and non-assertive points in the performances, so that discussion among

peers and with the teacher is necessary to encourage questions that give rise to reflection and expression by the students about the necessary changes to guarantee a scene consistent with what is recommended by the Ministry of Health and other materials guiding the game section.

As for the parody, generally, all groups expose it in a creative and playful way, demonstrating a study of the immunization schedule for the composition of the parody.

The other games are often surrounded by doubts and insecurity. The learning situations generated by the games help the participants to express adequate or inadequate responses to the content that the game proposes, producing consequences that can be identified and reinforced. When inadequate responses are given, a discussion is open among peers and, subsequently, the teacher guides the theoretical approach of the questions raised.

According to the students themselves, the lack of prior preparation on their part is an obstacle that affects the game section. However, it is justified that they are not used to working in groups, in a participatory and dialogical way, whose method implies the responsibility on the part of the students in preparing for the class by reading the materials made available by the teacher. Such an attitude is fundamental to provide the active participation of students during the process of knowledge construction.

According to researchers<sup>(2)</sup>, teachers generally use traditional pedagogies and expository teaching without the effective participation of students, what makes them the protagonists of the teaching-learning process and not the students. Traditional pedagogies promote a framework that contributes to the abovementioned difficulties encountered in the game section.

It is essential that health education incorporates the pedagogical advances of active teaching-learning methodologies, establishing new guidelines for the integration of knowledge and the breakup with the traditional dichotomy between basic education and clinical training<sup>(2)</sup>.

The game section allows students to solve problems, understand the games and the specific contents worked on. It appears that the rules and tips provided during the activity favor the students' learning as they raise hypotheses, analyze and interpret the resolution of problems and discuss with the group to give a response. Thus, the critical reflection necessary for acting in immunization is developed.

A docente, na condução da gincana, assume o papel de provocador do raciocínio dos alunos, procura gerar desequilíbrios cognitivos em relação ao conteúdo e, possibilita interações ativas com o conhecimento e aprendizagem significativa<sup>(1)</sup>.

### Evaluation of the material

In the conduction of the game section, the teacher assumes the role of the one provoking students' reasoning, seeks to generate cognitive imbalances in relation to the content and allows active interactions with knowledges and meaningful learning<sup>(1)</sup>.

It is observed that the implementation of this didactic-pedagogical material facilitates and adds dynamism to the teaching-learning process with regard to the subject in question, as the games represent a valuable resource for solving problems and reflecting on the theoretical content. It enables an environment that promotes discussions and the construction of knowledge<sup>(5-6)</sup>.

It is noted that this material is efficient in teaching and learning, as it provides knowledge about the key theme by stimulating the enthusiasm and a greater involvement of the learners. This is a result of the promotion of spontaneous communication and manifestation

among peers, while the teacher is the articulator of the discussions.

It is noteworthy that the games present in the game section represent moments of meaningful, motivated, relaxed learning in which knowledge and learning are emphasized as something broader than that allowed by the academic context. They integrate the games with the personal experiences and knowledge of each player brings with them. For this purpose, the game section seems to assist the whole process of learning and cognitive, affective and emotional development<sup>(4)</sup>.

Competitiveness is intrinsic to the human being and the desire to win reveals a greater interest on the part of the learners, in the internalization of knowledge, based on the association of ideas<sup>(9)</sup>. This aspect is connected with the problematizing learning approach, as it creates opportunities for synthesis of knowledge.

The students expressed positive opinions about this teaching strategy, emphasizing the dynamism and motivation during the class. However, this study is limited because it is a report of the teacher's experience of one teacher, making it necessary to conduct further studies to assess the students' perception about the material.

### CONCLUSION

It is concluded that this experience allowed recognizing the games on immunization as a resource that favors the teaching-learning process, ensuring the active participation of students in the construction of their own knowledge. Thus, it is understood that this strategy must be improved and applied by teachers in order to allow the theoretical deepening on immunization in a playful and pleasant way.

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**Note:** This report did not receive funding from any funding agency.

**Received in:** 11/06/2018

**Approved in:** 09/04/2020

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