







BODY PAINTING AND BODY PROJECTION: SIMULATION IN NURSING TEACHING-LEARNING

BODY PAINTING E BODY PROJECTION: SIMULAÇÃO NO ENSINO-APRENDIZAGEM EM ENFERMAGEM

BODY PAINTING Y BODY PROJECTION: SIMULACIÓN EN LA ENSEÑANZA-APRENDIZAJE DE LA ENFERMERÍA

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ABSTRACT

Objective: to report the experience of using the body painting and body projection technologies as facilitating tools in the teaching-learning process from the perspective of Nursing professors during teaching of the cardiovascular physical examination. **Method:** an experience report of a facilitating strategy applied to the teaching-learning process corresponding to the cardiovascular physical examination in the Nursing undergraduate course at a private university from São Paulo, Brazil. **Results:** a total of 40 students, two professors, one plastic artist and two models on whom body painting was applied took part in the experience. Use of the aforementioned technologies raised reflections about the possibility of employing them as tools for playful and effective teaching, optimizing the formal academic context. **Conclusion:** according to the professors' perception, the body painting and body projection tools facilitate the teaching-learning process corresponding to the cardiovascular physical examination, as they bring the theory closer to the practice and allow students to make visual associations that overcome the traditional teaching-learning barriers.

Keywords: Education, Nursing; Anatomy, Artistic; Learning; Simulation Technique; Nursing.

RESUMO

Objetivo: relatar a experiência da utilização das tecnologias body painting e body projection como ferramentas facilitadoras do processo ensino-aprendizagem na perspectiva de docentes de Enfermagem durante o ensino do exame físico cardiovascular. **Método:** relato de experiência de estratégia facilitadora aplicada ao processo de ensino-aprendizagem do exame físico cardiovascular durante o curso de graduação em Enfermagem de uma universidade privada de São Paulo-Brasil. **Resultados:** participaram da experiência 40 estudantes, dois professores, um artista plástico e dois modelos que receberam a pintura corporal. O uso das referidas tecnologias suscitou reflexões sobre a possibilidade de utilizá-las como ferramentas para o ensino de forma lúdica e eficaz, otimizando o contexto acadêmico formal. **Conclusão:** as ferramentas body painting e body projection, de acordo com a percepção dos docentes, facilitam o processo de ensino-aprendizagem do exame físico cardiovascular, uma vez que aproximam a teoria da prática e permitem, aos estudantes, associações visuais que superam as tradicionais barreiras de ensino-aprendizagem.

Palavras-chave: Educação em Enfermagem; Anatomia Artística; Aprendizagem; Simulação; Enfermagem.

RESUMEN

Objetivo: informar sobre la experiencia del uso de las tecnologías de body painting y body projection como herramientas facilitadoras del proceso de enseñanza-aprendizaje desde la perspectiva de los profesores de enfermería durante la enseñanza del examen físico cardiovascular. **Método:** informe de experiencia de estrategia facilitadora aplicada en el proceso de enseñanza-aprendizaje del examen físico cardiovascular durante el curso de graduación en enfermería de una universidad privada de São Paulo-Brasil. **Resultados:** participaron en la experiencia 40 alumnos, dos profesores, un artista plástico y dos modelos que recibieron la pintura corporal. El uso de estas tecnologías suscitó reflexiones sobre la posibilidad de utilizar ambas como herramientas para la enseñanza de forma lúdica y eficaz, optimizando el contexto académico formal. **Conclusión:** las herramientas de body painting y body projection, según la percepción de los profesores, facilitan el proceso de enseñanza-aprendizaje del examen físico cardiovascular, ya que aproximan la teoría a la práctica y permiten a los alumnos realizar asociaciones visuales que superan las barreras tradicionales de enseñanza-aprendizaje.

Palabras clave: Educación en Enfermería; Anatomía Artística; Aprendizaje; Simulación; Enfermería.

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INTRODUCTION

In the last few years, the learning process has undergone countless conceptual and methodological changes, with a view to improving teaching and learning techniques. For example, there are active methodologies with pedagogical approaches that stimulate critical and reflective teaching-learning processes, through which students become active and participative agents of their own learning.¹

In Nursing education, application of interactive methods such as interactive lectures, small group work, workshops and problem-based learning has been encouraged. When professors maintain an interactive approach, they engage the students and promote more interaction among the participants, and learning becomes more effective, contributing to the quality of teaching.²

Thus, the new tools applied to Nursing education exert a significant impact on the traditional educational paradigm, as they promote changes in the way of teaching and learning, which has favored training of nurses and future nurses.³

Body painting stands out in the face of this new scenario. It is a painting process that can be performed among students or with participation of a live model. Painting should reproduce, on the body surface, internal structures with a high degree of detail and use of vibrant colors in order to increase retention and retrieval of the students' knowledge, promoting effective learning.⁴

An Australian study evaluated the efficacy of body painting as a hands-on approach in teaching human anatomy and reported that the technique helped the students remember the position of bones, joints, muscles, actions and insertions of structures, consequently supporting deeper understanding of anatomy.⁵

Thus, body painting is aligned with active teaching-learning methodologies and allows the participants to have contact with new information in a playful and engaging manner. It represents an effective and low-cost curricular complement when compared to the maintenance of human anatomy and clinical simulation laboratories.^{6,7}

In addition to body painting, there is another teaching technique known as body projection, which consists in projecting anatomical structures on the body surface or on a live model with the aid of a projector.⁷

These resources are versatile and can be applied to facilitate teaching in various contexts. In anatomical studies, for example, they enable better contextualization of the human structures and understanding of their

respective functions. In addition, they are useful in introduction of the clinical examination and in development of associated communication skills.⁸

In this sense, this study aims at reporting the experience of using the body painting and body projection tools as facilitating resources for the teaching-learning process from the perspective of Nursing professors during teaching of the cardiovascular physical examination.

METHOD

Type of study

A descriptive study of the experience report type, with a qualitative approach. It explains the Nursing professors' experience in using the body painting and body projection tools as facilitating resources for the teaching-learning process of Nursing students.

Locus

The experience was developed in a conventional classroom of a private university from São Paulo, Brazil, in the undergraduate Nursing course, "Nursing Process" academic discipline, offered in the third semester of the course.

Data collection

Data collection took place in April 2019. Initially, the students received diverse information about the academic subject objectives and, subsequently, they were divided into two subgroups to perform the practical activities. Each participant was responsible for the study of two morphological and functional components of the cardiovascular system, having to deal with the cardiac and vascular functions, respectively.

The classes were developed in different phases. *Phase 1* included a review of the human body structure, function and dysfunction, using the materials available in the classroom (scientific articles, books, journals and folders) offered by the institution and others brought by the students themselves. These materials were used as frameworks for the research and to design the work on the cardiocirculatory system.

In *Phase 2*, the main organs of each system were produced using recyclable materials, with the objective of retrieving the knowledge acquired and stimulating visual memory, thus facilitating presentation of the work developed. Subsequently, in *Phase 3*, a creative synthesis of

the content addressed was prepared with an illustrated manual, a folder and an explanatory guide, for example. This product was used as one of the evaluation means and might eventually be adopted for patient guidance during the students' practices in the internships.

Phase 4 consisted in the presentation of the work done, using the material produced by the group, followed by *Phase 5*, which was the actual moment when body painting was applied, followed by body projection. The use of an Epson® multimedia hand-held projector for body projection is highlighted. The images employed in the projection were extracted from the CD accompanying the Anatomy Atlas⁹, interactive version for computers. In addition, it was necessary to adjust the environment's lighting (slightly darkening the room) during this phase of the experience.

It is noted that the body painting sessions were performed by a plastic artist, member of the university faculty, on two live models designated for this purpose, under the guidance of the professors of the Morphology academic discipline. The painting process lasted approximately 90 minutes. The professor designed a cardiocirculatory system on the aforementioned models for this activity.

The body painting technique used was based on the reproduction of different anatomical structures considered important for learning the physical examination of the heart and circulatory system. During the physical examination of the cardiothoracic region, there was also a demonstration of how to use the propaedeutic techniques for chest inspection, palpation and auscultation, with location of the cardiac foci and circulatory structures.

It is worth noting that materials such as specific inks and pencils for the skin were used in this phase, without imposing any risk to the live models.

The body projection technique was also performed with the objective of favoring teaching of the physical examination of the heart and of the cardiothoracic region circulatory system, by using an image projector on the live model.

After applying the body painting and body projection techniques, the professors in charge explained the academic discipline using the painted live model and compared the body painting with the resin pieces and the images from the anatomy atlases⁹, in order to highlight the location of the structures and their connections to other tissues, organs and regions. The models were also asked to move the different parts of their body in order

to evidence the location and displacement of structures in the different positions of body mechanics.

At the end of the class, the professors were available to answer any questions that the students might have. At this debriefing moment, the body painting and body projection images were again correlated to the other pedagogical materials. The professors recorded their perceptions at the end of the activity through notes made freely and individually, without using any pre-established scripts.

Data analysis and treatment

Data analysis was descriptive and resorted to the use of photographs from the experience.

Ethical aspects

As this is a report of the experience of the authors of this manuscript, with no possibility of individual identification, confidentiality of the participants was guaranteed and secrecy of the diverse information provided in confidence was preserved, as determined by Resolutions 466/12 and 510/16 of the National Health Council. The current report was approved by the Committee of Ethics in Research with Human Beings under CAAE number: 97887418.8.0000.5492 and opinion No. 2,998,211/2018, having waived application of the Free and Informed Consent Form (FICF).

RESULTS

The experiment involved 40 students enrolled in the "Nursing Process" academic discipline, two professors of the subject, one plastic artist, and two live models on whom body painting was applied. Sharing of knowledge occurred through dialog, using the body painting and body projection tools in learning of the cardiovascular physical examination. It was sought to articulate the Nursing students' diverse knowledge and experience in the theme, as well as the theoretical baggage they acquired during the body painting process.

In the learning dynamics, all participants were involved and motivated in sharing experiences of the cardiovascular physical examination and of the lessons learned from the displacement of structures in different positions of the live models' body mechanics. Aspects related to the anatomical-physiological characteristics emerged, with emphasis on the location of the cardiac and pulmonary foci in the auscultation maneuvers.



Figure 1 - Performance of the body painting and body projection techniques during the cardiovascular examination practical class in the undergraduate Nursing course. São Paulo, SP, Brazil, 2019

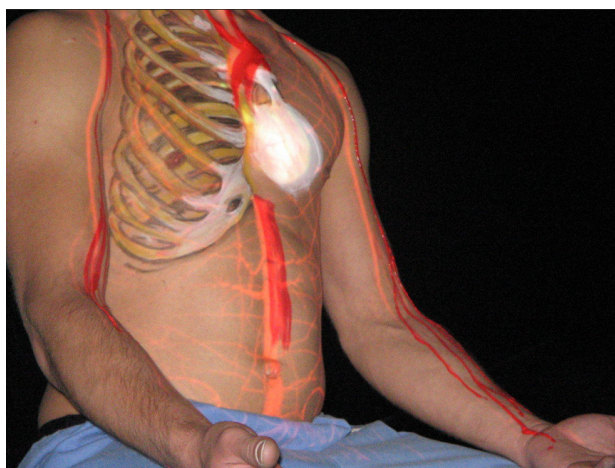


Figure 2 - Body painting for the cardiovascular examination practical class of the undergraduate Nursing students. São Paulo, SP, Brazil, 2019

Use of body painting and body projection raised reflections about the possibility of employing these techniques as tools for playful and effective teaching, optimizing the formal academic context of the discipline. Such perspective can be confirmed by means of observations and reports about this experience. The testimony by a specific female participant, author of this study, is highlighted as an example: “... it was possible to realistically identify the visible location of the heart and also to auscultate the heartbeats...”. In addition to her, another of the authors stated the importance of feeling skin touch: “... feeling the

human presence... the natural heat inherent to the presence of a real human being...”.

For the professors involved, the dynamics included learning aspects that encompass respect for the models present and the need to pay attention to details used in the propaedeutic techniques in order to confer more realism to the content approached.

It is noted that both the professors and the students manifested no embarrassment or negative aspects in relation to the partial nudity of the live model on whom body painting was applied.

DISCUSSION

The experience described by the Nursing professors in the performance of body painting and body projection evidences that body art through painting and image projection was significant for the students' learning, as it provided a better identification of the anatomical structures involved in the cardi thoracic physical examination. A study¹⁰ reports the use of these tools highlighting the students' acumen in knowing how to relate body structures to their topographical location. For such purpose, it becomes necessary to conduct a previous study that allows knowing this content in depth, which, in this case, was provided during the initial phases of this experience.

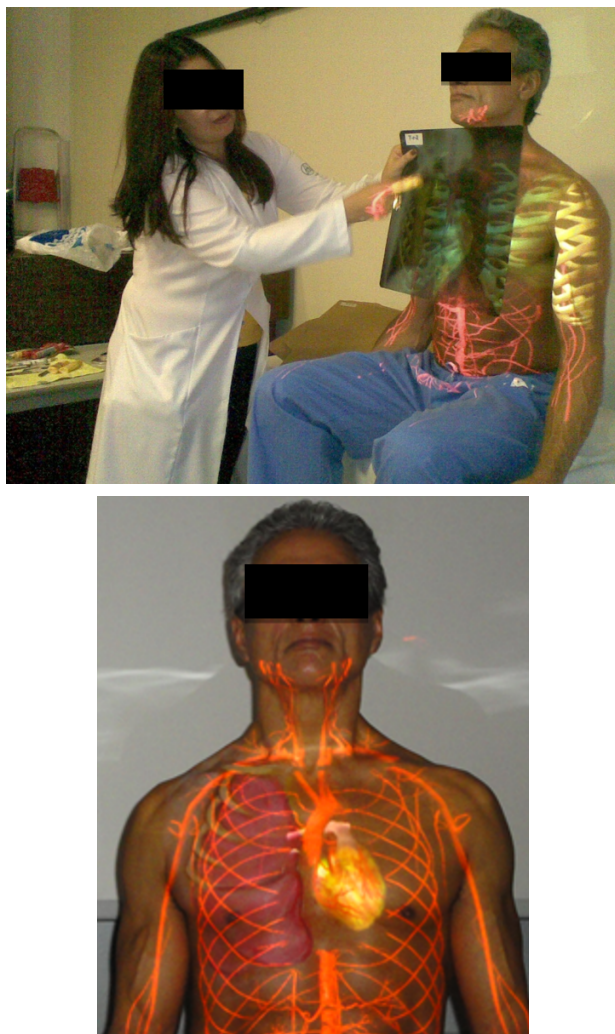


Figure 3 - Body painting and body projection fusion for the cardiovascular examination practical class of the undergraduate Nursing students. São Paulo, SP, Brazil, 2019

In this experience, the opportunity for the students to actively intervene during the performance phase of the techniques was also evident, in order to increase everyone's integration and engagement. By allowing the students to touch and feel the models' bodies, as well as to talk to them during the body painting session as if they were patients, the use of body painting and body projection favors a better correlation of the internal body structures that are being studied.⁴

In relation to the partial nudity of the models on whom body painting was applied, it is known that it can be an initial obstacle to apply the method, which was not the case in our study. However, this finding diverges from what was reported in a study,⁶ where 20% of the students

reported embarrassment for this reason. The study shows that, over time and with the students' experience and involvement in the body painting sessions, this barrier can be overcome.⁹

Finally, from the professors' perspective, in general, the experience of using body painting and body projection in pedagogical work provided excellent educational results, as the techniques favored mediation and sharing of knowledge with everyone involved. In addition, the students were able to play a leading role in a new learning movement, in opposition to what happens in traditional knowledge, which is centered on the figure of the professor.

It is considered that this report presents as a limitation the fact that the experience was exclusively described from the Nursing professors' perspective. In this sense, including the students' perception could unveil other elements that would contribute to development of the theme, in addition to more robust studies from the methodological point of view.

Moreover, taking into account that this experience report was one of the first experiences with body painting and body projection in the institution, it is considered that it was a strategy which added content to the available knowledge and contributed to the advancement of Nursing students' learning, by bringing the theory closer to the clinical practice.

CONCLUSION

This study reports the experience, from the Nursing professors' point of view, about using the body painting and body projection technologies as facilitators of the teaching-learning process. It was verified that these tools favored acquisition of knowledge about the anatomical aspects of the cardiocirculatory system and, therefore, contributed to a successful process regarding teaching-learning of the cardiovascular physical examination. By means of these techniques, the students were able to elaborate visual associations that overcome the traditional barriers inherent to the teaching-learning process.

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