JOURNAL OF EDUCATION, SCIENCE AND HEALTH – JESH
Revista de Educação, Ciência e Saúde
DOI: https://www.doi.org/10.52832/jesh.v5i3.724
Home page: https://bio10publicacao.com.br/jesh
e-ISSN: 2763-6119

BODY PAINTING AS A PEDAGOGICAL STRATEGY IN ANATOMY TEACHING: PERSPECTIVES FROM NURSING STUDENTS

BODY PAINTING COMO ESTRATÉGIA PEDAGÓGICA NO ENSINO DE ANATOMIA: PERSPECTIVAS DE ESTUDANTES DE ENFERMAGEM

BODY PAINTING COMO ESTRATEGIA PEDAGÓGICA EN LA ENSEÑANZA DE LA ANATOMÍA: PERSPECTIVAS DE LOS ESTUDIANTES DE ENFERMERÍA

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Received: 05/07/2026 | **Approved**: 10/08/2026 | **Published**: 25/08/2026

Abstract: This study aimed to analyze the perception of Nursing students regarding the use of body painting as an active teaching methodology in Human Anatomy, focusing on the understanding of anatomical content, knowledge retention, motivation, and student engagement. This is a descriptive study with a quantitative approach, conducted with 20 students enrolled in the Technical Nursing program at the Macêdo de Amorim Technical Center (CTMA), an institution affiliated with the Macêdo de Amorim College (FAMAM), located in Vitória de Santo Antão, Pernambuco, Brazil. Data collection was performed using an online questionnaire composed of 17 statements on a five-point Likert scale, and the results were analyzed using descriptive statistics. The findings evidenced high acceptance of the methodology, highlighting improvements in the learning of anatomical content, spatial visualization of body structures, and knowledge consolidation. In addition, an increase in motivation for studying was observed, along with high involvement during the activity and a positive perception of the collaborative interactions promoted by the practice. In this context, most students considered body painting a relevant instructional resource, recommending its application in other courses and educational levels. Thus, body painting is configured as a complementary pedagogical strategy capable of integrating cognitive, sensory, and cooperative dimensions, contributing to making Human Anatomy teaching more dynamic, contextualized, and participatory in health education.

Keywords: Active Learning Methodologies. Meaningful Learning. Health Education.

1 INTRODUCTION

Human Anatomy plays a central role in health education, constituting a foundational discipline in programs such as Medicine, Nursing, Physiotherapy, and other related fields. Mastery of anatomical knowledge is essential for clinical practice, as it provides a basis for understanding the morphofunctional organization of the human body, in addition to guiding diagnostic and therapeutic procedures, thereby contributing to safer and more qualified professional practice in patient care (Oliveira *et al.,* 2020).

Despite its relevance, traditional Human Anatomy teaching faces recurring challenges, including an excessive emphasis on memorization of structures, limited integration between morphological aspects and their clinical applicability, and a scarcity of teaching resources capable of enabling three-dimensional visualization of the body's architecture. This model, often centered on lectures and the use of anatomical atlases, may lead to student demotivation and compromise learning, causing the discipline to be perceived at times as complex and difficult to assimilate, as reported in the literature (Almeida *et al.,* 2023).

In response to these limitations, innovative pedagogical strategies have emerged, including active learning methodologies, which encourage greater student protagonism and contribute to the development of more meaningful educational experiences. From this perspective, activities that combine art, creativity, and multisensory experiences constitute important educational tools, as they provide a more dynamic, motivating, and contextualized learning process while also promoting the integration of theory and practice (Júnior, 2022).

Among the approaches that incorporate artistic and multisensory elements into the teaching and learning process in the context of Anatomy, body painting stands out, defined as the artistic painting of anatomical structures directly onto the human body. Its application in health education has been gaining prominence by enabling the transformation of two-dimensional representations into three-dimensional projections, enhancing the spatial understanding of body systems and strengthening learning. Furthermore, the technique promotes sensory integration by engaging vision, touch, and movement, thereby enhancing content retention and stimulating student engagement (Shapiro *et al.,* 2019; Okray *et al.,* 2023).

Thus, body painting has been used as a teaching resource both to address the scarcity of cadavers and anatomical models and to provide a more playful and interactive learning experience. Recent studies reinforce its applicability in different educational contexts, demonstrating benefits that extend beyond anatomical understanding to include the development of interpersonal skills, such as communication, empathy, and teamwork (Almeida *et al.*, 2023; Moraes, 2025). In this sense, this approach transcends its merely illustrative function, establishing itself as an active learning methodology capable of integrating science, art, and pedagogical practice.

Taking this background into consideration, the present study aims to analyze the perceptions of students enrolled in a Nursing Technician program regarding the use of body painting in the Human Anatomy course, focusing on aspects related to content comprehension, engagement, and motivation. By investigating this pedagogical strategy, the study seeks to contribute to the discussion on active learning methodologies applied to

anatomical education and to highlight the potential of body painting as a complementary resource to traditional teaching practices.

2 METHODOLOGY

This was a descriptive study with a quantitative approach, conducted with students enrolled in the Nursing Technician program at Centro Técnico Macêdo de Amorim (CTMA), an institution affiliated with Faculdade Macêdo de Amorim (FAMAM), located in Vitória de Santo Antão, Pernambuco, Brazil.

The study included 20 students regularly enrolled in the Nursing Technician program at CTMA. The inclusion criteria comprised students who attended the activity and voluntarily agreed to answer the questionnaire. Students who did not attend the activity or chose not to respond to the data collection instrument were excluded.

The pedagogical intervention consisted of applying the body painting technique at the end of the theoretical block covering the topics of bones, muscles, and joints in the Human Anatomy course, which lasted for two hours. During this period of time, students, organized in pairs or small groups, represented previously studied anatomical structures on their classmates' bodies, using gouache-type paints, under the supervision of the instructor responsible for the course, who assisted in identifying and locating the represented structures.

After the activity, the students were invited to answer a structured questionnaire available electronically through the Google Forms platform. Participation in the study was voluntary, and the questionnaire was completed anonymously, with no information that could identify the participants being collected, thereby ensuring the confidentiality of the responses.

The data collection instrument consisted of 17 statements designed to assess the students' perceptions regarding the use of body painting as a pedagogical strategy in Human Anatomy teaching. Responses were obtained using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The collected data were organized in an electronic spreadsheet and subjected to descriptive statistical analysis using absolute and relative frequencies (percentages), with the purpose of describing the distribution of participants' responses.

2.1 Ethical Aspects

The body painting activity was initially developed as a pedagogical strategy within the context of Human Anatomy classes. Subsequently, the students' perceptions of the activity were obtained through an anonymous questionnaire used as a research instrument, without the collection of personal information or data that could identify the participants. Although the study was not submitted for review by a Research Ethics Committee (REC), ethical principles related to voluntary participation, anonymity, confidentiality of information, and the freedom to refuse participation were ensured, without any adverse consequences for the students' academic activities.

3 RESULTS AND DISCUSSION

To systematize the participants' perceptions regarding the application of the body painting methodology, the data obtained through the questionnaire were organized and are presented in **Table 1**, which summarizes the percentage distribution of the levels of agreement attributed to each statement.

Table 1. Percentage distribution of agreement levels among Nursing students regarding the body painting methodology applied to Anatomy teaching (N=20).

Statement	Level 1	Level 2	Level 3	Level 4	Level 5
1. The activity helped me better understand the Anatomy content.	10	0	0	5	85
2. The activity facilitated the visualization of anatomical structures.	10	0	0	15	75
3. The experience contributed to long-term retention of the content.	10	0	10	10	70
4. The activity facilitated the recall of the anatomical details studied.	10	5	0	20	65
5. The activity increased my motivation to study.	10	0	10	15	65
6. I felt engaged during the body painting activity.	15	0	10	5	70
7. The group dynamics facilitated my learning.	10	0	0	0	90
8. The activity was more interesting than a conventional theoretical class.	15	0	10	0	75
9. The activity was well organized.	10	0	0	25	65
10. The use of living models facilitated spatial understanding of anatomical structures.	10	0	0	5	85
11. The instructions provided were clear and sufficient.	10	0	0	10	80
12. The time allocated to the activity was adequate.	10	0	15	20	55
13. The activity should be implemented in other courses and educational levels.	10	0	0	0	90
14. I consider the activity a valid teaching resource.	10	0	0	0	90
15. I would recommend this methodology to other colleagues.	10	0	0	0	90
16. The activity contributed to my academic development.	10	0	0	5	85
17. I am interested in participating in other similar practical activities.	10	5	0	10	75

Source: The authors (2026).
Note: Five-point Likert scale, as described in the methodology. Values expressed as percentages (%).

Analysis of the responses obtained from the 20 students demonstrated high acceptance of the *body painting* methodology applied to Anatomy teaching. As shown in **Table 1**, 85% of the participants assigned the highest level of agreement to the statement that the activity contributed to a better understanding of the anatomical content, whereas 10% indicated total disagreement. These results corroborate the findings of Langlois *et al.* (2017) and Almeida *et al.* (2022), who emphasize that Anatomy education involves a high degree of abstraction and spatial complexity, requiring strategies that facilitate conceptual assimilation.

Regarding the visualization of anatomical structures, 75% of the students indicated the highest level of agreement regarding improved clarity following the activity. This finding suggests that practical application using

living models may assist in translating two-dimensional representations, frequently found in atlases and illustrative materials, into a three-dimensional understanding contextualized within the human body. It therefore aligns with the scientific literature, which describes body painting as a resource that facilitates spatial perception and the integration of theory and practice in Anatomy education (Almeida *et al.*, 2023).

Regarding content retention, 70% of the students reported that the activity promoted long-term retention, while 65% stated that they were able to recall the anatomical details studied more easily. Although these data are based on self-reported perceptions rather than objective measures of academic performance, they suggest that practical and multisensory experiences may enhance learning consolidation processes. This interpretation is supported by the health education literature, which indicates that methodologies integrating visual, tactile, and motor stimuli tend to promote greater cognitive engagement and improved memorization (Shapiro *et al.,* 2019; Okray *et al.,* 2023).

From a theoretical perspective, the findings concerning improved content comprehension, visualization of anatomical structures, and information retention can be interpreted in light of Ausubel's (1968) theory of meaningful learning, according to which new knowledge becomes more stable when related to previously established cognitive structures and concrete experiences. By using the body itself as a teaching medium, body painting enables the contextualization of anatomical content, establishing connections between theoretical knowledge and practical experience.

Motivational aspects were also relevant: 70% of the students reported feeling engaged during the activity; 65% indicated greater motivation to study after the experience; and 75% considered the practical activity more interesting than a conventional theoretical class. Taken together, these findings suggest that the methodology may influence not only the cognitive dimensions of learning but also the affective and motivational factors that influence student engagement. This interpretation is consistent with studies on active learning methodologies in health education, which indicate that participatory strategies tend to contribute to greater engagement and the development of a more autonomous attitude toward knowledge (Júnior, 2022).

The collaborative dimension emerged as one of the most significant aspects of the study, with 90% of the participants assigning the highest level of agreement to the statement that group dynamics facilitated their learning. The collective work required by the activity promoted interaction among peers, communication, and cooperation, which are essential competencies for professional training in Nursing and other health-related fields. In this regard, Moraes (2025) highlights the collaborative nature of body painting as a distinctive feature in professional education, as it integrates technical and interpersonal skills.

Regarding the organization of the activity, 80% of the students considered the instructions clear and sufficient, and 65% considered the activity well structured. However, only 55% assigned the highest level of agreement regarding the adequacy of the time available, highlighting an operational limitation already identified in the literature, which emphasizes that the effectiveness of this strategy may depend on the availability of sufficient time for the gradual execution of the activity (Oliveira *et al.,* 2020). Therefore, extending the workload or reorganizing the activity dynamics in future applications is recommended.

Despite this limitation, the indicators of pedagogical acceptance were highly positive: 90% of the students considered the activity a valid teaching resource, 85% recognized its contribution to their academic development, and 90% stated that they would recommend its implementation in other courses and educational levels. These findings relate to previous studies describing body painting as an innovative and positively evaluated strategy in Anatomy education, with potential application in different educational contexts (Soares *et al.,* 2025). Additionally, the findings allow possible contributions to the development of interpersonal skills to be inferred. Interaction among participants during the body painting activity required communication, respect, and collaboration, resembling situations involving care and interpersonal contact in future professional practice. This formative dimension has been highlighted in the literature as one of the distinctive features of the methodology, particularly in the context of health education (Almeida *et al.,* 2023). The interpersonal dynamics observed can be seen in **Figure 1**, which presents photographic records of the strategy's implementation, highlighting moments of interaction and cooperation among the students.

Figure 1. Photographic records of the application of the body painting methodology in Anatomy teaching. (A) Painting of the arm muscles; (B) Painting of the hand bones; (C) Painting of the forearm bones; (D) Painting of the leg bones.



Source: The authors (2026).

Finally, it is important to highlight that the data from this study reflect self-reported perceptions from a small sample (N=20), which limits the generalizability of the findings. The absence of a control group and an objective assessment of academic performance also represents a methodological limitation. Future investigations should adopt comparative study designs and incorporate additional quantitative instruments to assess the impact of the methodology on more objective learning outcomes.

Overall, the findings indicate that body painting constitutes a pedagogical strategy aligned with contemporary approaches to health education by integrating cognitive, sensory, and collaborative dimensions. Although it does not replace traditional methods, the technique represents a complementary resource capable of making the Anatomy learning process more active, contextualized, and participatory.

4 CONCLUSION

Based on the analysis of the data and the literature consulted, it can be concluded that body painting constitutes a relevant pedagogical strategy for teaching Human Anatomy, as it promotes content comprehension, spatial visualization of anatomical structures, and student engagement in the learning process. The results demonstrate that students perceive this methodology as a teaching resource capable of making learning more dynamic, participatory, and meaningful, contributing not only to the assimilation of anatomical knowledge but also to the development of interpersonal skills related to communication, cooperation, and teamwork. Furthermore, the high level of acceptance of the activity and the recommendation of its application in other educational contexts highlight its potential as a complementary methodology to traditional teaching approaches. Therefore, it is important for educational institutions and instructors to expand the use of innovative pedagogical strategies, promoting educational experiences that integrate cognitive, sensory, and collaborative aspects. Future studies with larger samples and objective learning assessment instruments are also recommended to further investigate the impact of body painting on academic performance and the education of health sciences students.

Conflicts of Interest

The authors declare that there are no conflicts of interest. All authors are aware of and agree with the submission of the manuscript.

Author Contributions

João Vitor da Silva, Juliana Oliveira Lopes Barbosa, Thais da Silva Rezende, Natan Cordeiro da Silva, Newton Antas Pereira, Everton Soares da Silva, Henllayane Nathani de Amorim Amaral, Janaina da Silva Bezerra e Itamar Queiroz Lima Filho participated in data collection and analysis, preparation of the table and figure, and manuscript writing.

Ewerton Fylipe de Araújo Silva participated in the conceptualization and supervision of the study, as well as in the review and revision of the manuscript.

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