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THE USE OF DIDACTIC MODELS IN THE TEACHING OF HUMAN ANATOMY IN BIOLOGY CLASSES IN THE HIGH SCHOOL EARLY GRADES

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ABSTRACT:
Considering the difficulties in the teaching of biology, we highlight the complexity in the presentation of some contents in the classes. However, the use of anatomical models as a didactic tool is a viable option in the practical illustration of the biological concepts and processes approached.
Keywords: Human anatomy. Sciences. Didactic models.

O USO DE MODELOS DIDÁTICOS NO ENSINO DE ANATOMIA HUMANA DAS AULAS DE BIOLOGIA NAS SÉRIES INICIAIS DO ENSINO MÉDIO

RESUMO
Considerando as dificuldades no ensino de biologia, destaca-se a complexidade no modo de apresentação de alguns conteúdos nas aulas. No entanto, a utilização de modelos anatômicos como ferramenta didática, é uma opção viável na ilustração prática dos conceitos e processos biológicos abordados.
Palavras-chave: Anatomia humana. Ciências. Modelos didáticos.

INTRODUCTION

Among the difficulties experienced in the teaching of biology, the complexity in the way of presentation of some contents in the classes stands out, considering that some concepts are difficult to understand and visualize by the students, and still, on many occasions, only theoretical approaches to these are carried out. content, which leads to difficulties in assimilating, interpreting its meaning and/or process (PAGEL et al., 2015).

In addition to these facts, it is emphasized that the way the teacher approaches the content can positively or negatively influence the student's learning process, thus making it evident that the search for alternative methodologies that facilitate the understanding of knowledge by the students is of fundamental importance. . For Justina (2006) there is a need for continuous training in the context of using didactic resources in parallel with theories, in order to facilitate the teaching-learning process.

Taking into account the teaching of Human Anatomy content, it is still considered a challenge, where in turn its concepts cannot only be decorated, but must be understood within a dynamic context of biological relationships (MORAES; GUIZZETTI). , 2016). The authors Lima et al. (2010) state that the extensive detailing of the many structures, as well as the nomenclature itself, present natural challenges relevant to this content, presenting itself to the student as a discouraging and monotonous activity. This commonly occurs as a result of the choice of methodology to be used in the teaching of these contents, which mostly represents the traditional teaching method, with lectures and only verbal transmission of the subject, making the learning process unilateral where only the teacher is the holder. of all information and the student is just an inactive receiver of knowledge (FREIRE, 2006).

Thus, considering the aforementioned information, it is understood that the use of anatomical models as a didactic tool is a viable option in the practical illustration of the concepts and biological processes addressed in the anatomy content, allowing the teacher and the student to visualize its functionalities. , thus arousing the interest and participation of the student,

MAIN GOAL

Use of didactic-illustrative anatomical models as a pedagogical tool to help understand the processes of the human body in biology classes.

Specific objectives

- Facilitate the visualization of systems and parts of the human body.
- Making internal physiological activities palpable.
- Enlarge microscopic structures of the human body.
- Increase student interactivity with content.

METHODOLOGY

The activities were carried out at the Professor Arruda High School, with the help of students from the second year of high school, accompanied by the biology teachers of that school. For the elaboration of the anatomical models, printed molds were used enlarged and replicated in panels made of styrofoam, as well as the making of organelles of the physiological systems (Urinary, Respiratory, Circulatory and Digestive). In order to carry

out the class, a simulation of the functioning of their activities was carried out in each system. In the urinary system, a functional 3D model of the kidneys was produced, using kidney replicas made of styrofoam and transparent plastic tubes to simulate the veins, arteries and urinary channels. As for the respiratory system, an artificial lung was set up with a plastic bottle and bladders simulating the lungs and diaphragm, which simulate the respiratory movement. In the circulatory system, a panel was set up with blood circulation and its cells (red blood cells) replicated in styrofoam, demonstrating the direction of blood circulation and the function of its cells. While the digestive system was replicated with the aid of bladders that were used to shape the intestine, the digestion of starch molecules was also simulated. All systems and their activities were exposed during a science fair and conducted by students.

RELEVANCE OF THE PROJECT

The development of activities and dynamic classes with the construction and use of didactic models proved to be relevant and fundamental in view of the passive situation of students in theoretical and expository classes. The act of elaborating their own models aroused the search for more information, consequently promoting greater engagement of students in the development of activities related to the project, as well as providing an increase in knowledge associated with the theme. For Macêdo et al. (2017) the construction of models provokes in students the possibilities of learning by analogies from the visual aspects resulting from the didactic modelling, allowing the development of an imaginary in the students' cognitive about the natural systems represented in the didactic models.

PROJECT/RESEARCH IMPACT

The making of the didactic models showed in the students the relationship of the anatomical similarities and the physiological processes that occur in their own body, under natural conditions. Thus, the didactic models allowed the two-dimensional visualization of structures and organelles seen only in textbook images, providing greater proximity to the biological reality. Under these conditions, the use of these models is presented effectively in the learning of human anatomy by students.

SEARCH RESULTS

The presentation of the models made was made with the explanation of the simulation of the functioning of each anatomical system studied by the students (figures 1, 2, 3 and 4).

Figura 1 – Explicação do funcionamento do sistema digestório.

Figura 2 – Explicação do funcionamento do sistema respiratório.

Figura 3 – Explicação do funcionamento do sistema urinário.

Figura 4 – Explicação do funcionamento do sistema circulatório e realização de tipo sanguíneo.

Also as a positive highlight, the students' evaluation performance was satisfactory, through the evaluation carried out by school teachers and external guests, highlighting the effectiveness of the methodological approach used, thus validating the efficiency of the use of didactic models in the teaching of biology.

FINAL CONSIDERATIONS

When considering the usual methodologies in the daily life of biology classes, the realization of theoretical-practical classes with the use of alternative pedagogical tools, as presented in this work, proved to be a promising and efficient method for student learning, in addition to versatility. provided to work with different contents and with the same practical objective of bringing the student closer to their reality, thus instigating greater participatory interest.

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