Perception of cnidarians by students of the urban and rural school of two municipalities of Pernambuco, Brazil

Percepção dos cnidários pelos alunos da escola urbana e rural de dois municípios de Pernambuco, Brasil

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ABSTRACT
The cnidarians represent an important phylum of zoology, consisting of aquatic animals almost always of marine origin. The representatives of this phylum have important functions, being fundamental in the food chain of many animals, in addition to being important predators, responsible for maintaining the environmental balance. However, the interest in the cnidarian phylum is also related to the numerous accidents caused by some of its representatives, such as caravels and jellyfish, which intensifies the need to address this content more comprehensively in the classroom. For this, teaching resources represent important tools that can help teachers and students in the teaching-learning process, making the approach more pleasurable, didactic, and complete. One of these tools are photographs, which are classified as non-verbal language, effectively contributing to the teaching process, as well as to scientific-technological discoveries, which can be used in any learning environment. In this sense, students from the 5th year of Elementary School, from the city of Paudalho/Pernambuco, participated in a study on cnidarians, where the previous knowledge they obtained on the subject was evaluated, and how the use of tools such as drawings and figures could contribute for the construction of their knowledge about the phylum. The applied methodology, called indirect observation, boosted the understanding of the content, as well as contributed to the development of creativity and observation in the classroom. In addition, this tool boosted the development of cognitive conflicts, since students were able to relate preexisting knowledge with new information obtained during the class, which is fundamental in the science teaching process, whose main objective is to make the student relate the content covered in the classroom, with their daily lives, mobilizing students to expand their knowledge. These attitudes make the teaching of zoology something concrete and certainly more pleasurable, ensuring that good teaching strategies can break down barriers in science teaching.

Keywords: cnidarians, teaching-learning, didactic resources, observation.

RESUMO
Os cnidários representam um importante filo da zoologia, constituído por animais aquáticos quase sempre de origem marinha. Os representantes desse filo desempenham funções importantes, sendo fundamentais na cadeia alimentar de muitos animais, além de serem importantes predadores, responsáveis por manter o equilíbrio ambiental. No entanto, o interesse pelo filo cnidário está também relacionado com os inúmeros acidentes provocados por alguns dos seus representantes, como caravelas e medusas, o que intensifica a necessidade de abordar este conteúdo de forma mais abrangente em sala de

aula. Para isso, os recursos didáticos representam importantes ferramentas que podem auxiliar professores e alunos no processo ensino-aprendizagem, tornando a abordagem mais prazerosa, didática e completa. Uma dessas ferramentas são as fotografias, que se classificam como linguagem não verbal, contribuindo efetivamente para o processo de ensino, bem como as descobertas científico-tecnológicas, que podem ser utilizadas em qualquer ambiente de aprendizagem. Nesse sentido, alunos do 5º ano do Ensino Fundamental, da cidade de Paudalho / Pernambuco, participaram de um estudo sobre cnidários, onde foram avaliados os conhecimentos prévios que obtiveram sobre o assunto, e como o uso de ferramentas como desenhos e as figuras podem contribuir para a construção de seus conhecimentos sobre o filo. A metodologia aplicada, denominada observação indireta, potenciou a compreensão do conteúdo, bem como contribuiu para o desenvolvimento da criatividade e da observação em sala de aula. Além disso, essa ferramenta potencializou o desenvolvimento de conflitos cognitivos, uma vez que os alunos puderam relatar conhecimentos preexistentes com novas informações obtidas durante a aula, o que é fundamental no processo de ensino de ciências, cujo objetivo principal é fazer com que o aluno relate os conteúdos abordados nas a sala de aula, com seu cotidiano, mobilizando os alunos para a ampliação de seus conhecimentos. Essas atitudes tornam o ensino de zoologia algo concreto e certamente mais prazeroso, garantindo que boas estratégias de ensino possam quebrar barreiras no ensino de ciências.

Palavras-chave: cnidários, ensino-aprendizagem, recursos didáticos, observação**.**

1 INTRODUCTION

Ethnoscience can be defined as the ethnography of the other's knowledge, built from the academic framework of knowledge (FERREIRA, 2018; LUCENA et al. 2018). From this definition, the concept of Ethnobiology can be established, which focuses on the study of the dynamics of relationships between people and their cultural groups and the environment (CYPRIANO et al. 2017; PORFIRIO, 2019). Funneling the concept even further, Ethnozoology is a branch of Ethnobiology related to the study of knowledge, meanings and use of animals by human beings (CYPRIANO et al. 2017; FERREIRA, 2018; LUCENA et al. 2018). It is an area of science that studies, in a transdisciplinary way, the perceptions, affective representations and attitudes of human populations towards animal species (POSEY, 1987; D'OLNE CAMPOS, 2002; PORFIRIO, 2019). Ethnozoology proposes a new model of conservation science, which includes the recovery, study and enhancement of local ecological knowledge (LIMA et a. 2020).

In this context of preservation and enhancement of ecological knowledge, a phylum that has been widely studied is Cnidaria, which brings together aquatic animals whose best known representatives are jellyfish, corals, caravels and sea anemones (CHENG et al. 2021). Most cnidarians are navy; some live attached to submerged objects and others swim freely (SANTOS et al. 2020; CHENG et al. 2021). These animals are

important for maintaining the environmental balance. The free-living cnidarians are food for some aquatic animals, in addition, they can be predators of some beings that, without proper control, can become pests in the marine environment (CAVALCANTE et al. 2014). The cnidarians that form the corals, on the other hand, provide shelter for many marine species, protecting them from many predators (NOGUEIRA; HADDAD, 2006; CAVALCANTE et al. 2014). In addition, corals can export organic matter and nitrogen to their surroundings, which serve as food for different beings, which in turn will serve as food for humans (TANAKA et al. 2011; HADAS et al. 2009). However, many of these animals are poisonous to man and for years have caused accidents (HADDAD et al. 2002). Due to the great complexity of the phylum, teachers need to use different teaching resources to facilitate student learning (GONÇALVES et al. 2017).

Among the different teaching resources there are images or photographs, these have great pedagogical importance and are essential for several teaching areas (BORGES et al. 2010; BORGES et al. 1996). Photographs act as a non-verbal language, decisively contributing to theoretical research, artistic and cultural manifestations and as an effective supporter in countless scientific-technological discoveries (LOUZADA-SILVA et al. 2013). These contribute to science, as they represent a qualified sequence of information that cannot be obtained in any other way (BORGES et al. 2010; LOUZADA-SILVA et al. 2013). Furthermore, they are considered as a kind of synthetic eye capable of converting, into visible records, phenomena whose existence we would not have known without the use of these (ALMEIDA et al. 2013). The use of photographs in the classroom contributes significantly to students' understanding of the different contents (BACCEGA et al. 2002; BORGES et al. 2010; ALMEIDA et al. 2013; LOUZADA-SILVA et al. 2013).

Thus, the objective of this work is to analyze the knowledge of students belonging to the fifth year (5th) of elementary school, about the cnidarians and explore the influence of photographs in teaching. The learning verification instrument used were the drawings made by the students themselves.

2 METHODOLOGY

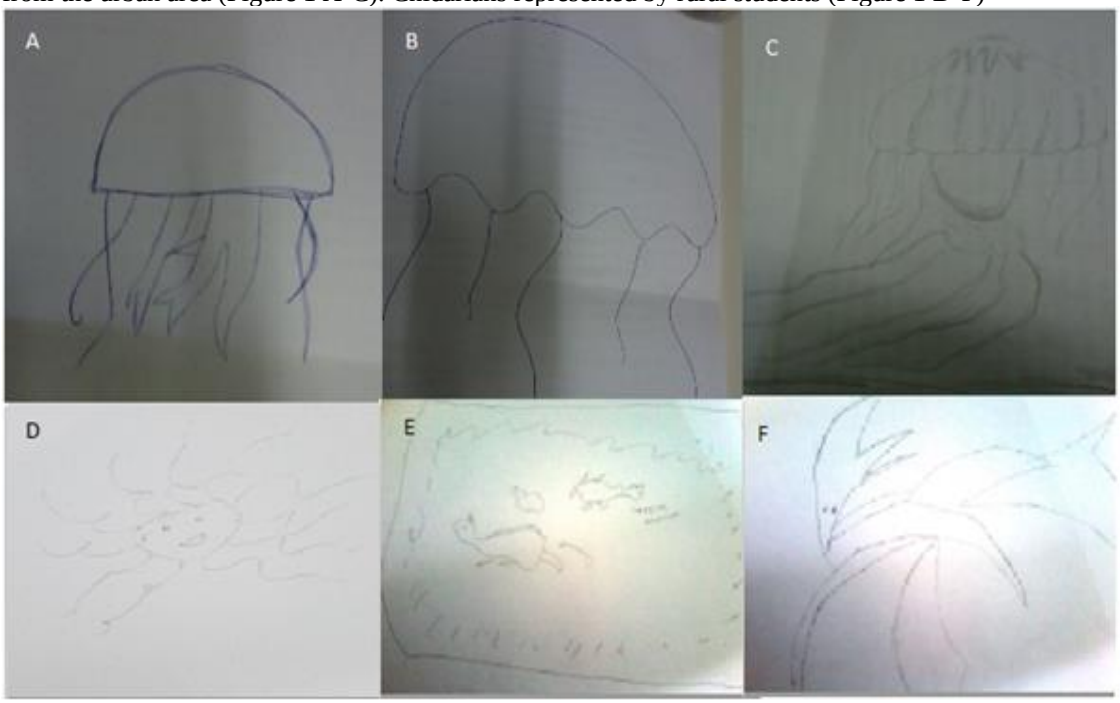
The methodology for carrying out this research was based on a qualitative investigation. For this purpose, scheduled visits were carried out in the following schools: Escola Coronel Valeriano Eugênio de Melo, located in the municipality of Olinda, and

Escola Confederação do Equador - Paudalho, Pernambuco, Brazil. The target audience of this study were students from the 5th year of elementary school, aged between 10 and 11 years. Initially, students were asked to draw on a sheet of paper the animals they knew as cnidarians. During the methodological application, some photographs were presented with different examples of cnidarians, in order to improve the students' understanding. At the end of the elaboration of the drawings by the students, a didactic intervention was carried out on the Cnidaria phylum, that is, the main aspects and importance for man and the environment were presented.

3 RESULTS AND DISCUSSIONS

At the end of the methodology, all drawings made by the students were gathered and analyzed. This didactic proposal aimed to develop students' creativity, making them more participatory and improving the understanding of the content covered (BORGES et al. 2010; ALMEIDA et al. 2013; LOUZADA-SILVA et al. 2013). Figure 1 shows some drawings made by students from the two schools.

Figure 1: Some cnidarians represented by students from both schools. Cnidarians represented by students from the urban area (Figure 1 A-C). Cnidarians represented by rural students (Figure 1 D-F)



Students at the school located in the urban area portrayed the animals of the Cnidarian Zoo group in greater detail and closer to reality. These students reported that

they had already had contact with some of these animals, for example, when going to the beach on a weekend, others through documentaries on television, cartoons and textbooks. Meanwhile, students from the rural area had many difficulties in portraying the Cnidarians, as most had never had contact with jellyfish, caravel or sea anemone, which are the best known animals of the group; they only reported that they had already watched movies with marine animals, but could not remember whether or not they were cnidarians. Other students represented the cnidarians as sea monsters, others said it was a type of fish. Most of the animals drawn by this group of students had eyes and mouths indicating the mystification of these animals in the students' conception.

Observation is a valuable tool for developing the students' perspective, creating cognitive conflict for them, interpreting new information based on their own references. The observation through pictures and photos are more used, as they make up the books and handouts presented to students, however, it is important that teachers also compose a collection of illustrations that allow students, in addition to observing them, to compare them (CONDE et al., 2013; KNUPPE, 2006).

According to Labinas et al. (2008), the observation can be carried out in two ways, the direct one, which refers to a direct contact with the object of analysis, in this case animal samples, and the indirect one, which uses technical resources or their derivatives, their products, such as, prints, films, photos. Activities consisting of direct observation can take place inside or outside the classroom, on walks around the school, in the garden or even in the classroom, when dealing with small animals or plants that support the closed environment.

It is important to emphasize that much of the dimension worked on in science teaching will depend on the interest, on the repertoire of activities that the teacher will do in relation to the subjects to be explored in the classroom (SARAIVA, 1998; WANDERLEY et al., 2007). According to Saraiva (1998) science education must be committed to encouraging scientific attitudes such as: observing, relating and classifying, among others, favoring students' reasoning about objects and situations with concrete meaning. The lack of applicability to various aspects of daily life makes students lose interest and the content becomes something else to be memorized (WANDERLEY et al., 2007). Therefore, the development of teaching material containing different teaching strategies is essential in the educational process and contributes to the critical acquisition of knowledge by students (CRUZ; MERCADO, 2010).

In general, whether in the urban or rural environment, the school is responsible for the education of the individual and, consequently, of society, and professionals in the area need to be in contact with different methodologies to teach, during or after a teacher training course - with the objective to minimize the learning deficit (FREITAS; RIBEIRO, 2007).

4 CONCLUSIONS

Given the above, it can be said that direct and/or indirect contact with the animals to be studied is extremely important for students' learning, especially in the teaching of zoological groups. This contact may not necessarily take place directly, but through documentaries, photos, etc. The fact that the environment in question is out of reality does not justify omitting it or reducing the content in the classroom.

When we started this work, we recognized that textbooks play a prominent role in the educational system. On the other hand, we affirm that the way in which this material is used by teachers and students is what will guarantee the quality of this resource. Therefore, the teacher must encourage the student to give his opinion, for observation purposes, without the concern of causing damage to the material. In this way, the student feels part of the process, being able to obtain more information and details, leading him to formulate questions and conclusions regarding the object of study, in this case, cnidarians. Thus, students will no longer play the simple role of common listeners in the traditional teaching model and will be able to acquire greater knowledge by participating as subjects of the teaching-learning process, described in the cognitive model of education.

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