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CONSOLIDATION OF THE EXTENSION CURRICULUM IN THE DISCIPLINES OF BOTANY IN THE UNDERGRADUATE BIOLOGICAL SCIENCES – LICENTIATE AND BACHELOR'S DEGREE

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ABSTRACT

The extension project "Consolidation of the curricularization of extension in the disciplines of botany in the undergraduate biological sciences – licentiate and bachelor's degree" integrates students from the Biological Sciences, Licentiate and Bachelor's courses, to transmit their knowledge and experiences to the population through visits to the Plant Physiology laboratory, preparation of didactic models, handouts and catalogs and workshops, materializing the curricularization in extension. The preparation of pedagogical materials, catalogs and handouts in the areas of botany is important to assist students and teachers in extension, supervised internships, lectures and other activities, as well as having an accessibility role in the fixation of content, development of creative and motor skills and visualization of structures in an easy way. Thus, the objective of the present work is, through the curricularization of the extension, to maintain links with society through guided visits to the institution's Botany Laboratories, as well as the development of pedagogical material to assist teachers and students of the Biological Sciences course, bachelor's and licentiate, Cascavel campus of UNIOESTE.

Keywords: Didactic Models. Plant physiology. Tour.

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Revista ARACÊ
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INTRODUCTION

According to the PNE 2014-2024, extension becomes mandatory in federal institutions of higher education, which is 10% of the total course load (BRASIL, 2014). The extension proposes to students the possibility of having contact with society and putting into practice the theory taught in the classes of the curriculum, in which students are the protagonists of the actions.

The learning process resulting from the teaching of acquired knowledge is a two-way street, where trainer and trainee learn together (PESCE, 2010). In this way, university extension demonstrates its importance in the democratization of knowledge built in the scientific environment, and shared with the community around it, consolidating the importance of scientific knowledge and the population as a whole.

The principle of inseparability between teaching, research and extension is based on the construction of a university with academic excellence, public, autonomous, democratic, which guarantees the inclusion of society by meeting its real needs (PUCCI, 1991) and with the inseparability between teaching, research and extension, an academic environment is established that is conducive to the construction of a standard of quality in higher education without state and business interference. in the process of teaching, production and dissemination of knowledge developed by universities (ADRIÃO; OLIVEIRA, 2002), thus establishing a dialogue between society and the university, with the exchange of knowledge and the fulfillment of educational needs between both.

According to Moita and Andrade (2009), the inseparability of the knowledge culturally produced by the various groups of society must be articulated with the knowledge produced scientifically within the academic environment. Thus, inseparability must be practiced in the construction of the Pedagogical Project of each course, as well as in classrooms, as well as in teaching and learning environments, laboratories and extension projects developed with society (FRUTUOSO; JULIAN, 2020).

The extension project "Knowing the plants of our daily lives: from algae to flowering plants", was registered in 2021, and since then has received several visits from public and private schools in the Cascavel region, in which students get to know the different areas of botany, passing through the laboratories of Phycology (UNOPA/UNIOESTE), Plant Physiology (LAFEV), Laboratory of Plant Anatomy and Morphology (LAMP), Herbarium (UNOP/UNIOESTE), always assisted by the students registered in the extension project, who participate in the visits and prepare permanent or temporary material for the visits. In

Revista ARACÊ
ISSN: 2358-2472

addition to accompanying undergraduate students in the extension curriculum that will participate in the aforementioned project and assisting them in the creation and development of didactic material on various topics of botany, with the identification of materials and methodologies accessible to be used.

Extension has still been suffering from problems within academic organizations, such as lack of investments, even though the extension practice is responsible for building the relationship between population and university, translating into society the knowledge built by academia and buildings of social life, transforming not only society, but itself (SILVA, 2013).

Thus, the objective of the present work is to maintain links with society through guided visits to the Institution's Botany Laboratories, workshops, as well as the development of pedagogical material to assist teachers and students of the Biological Sciences course, bachelor's and licentiate, Cascavel campus of UNIOESTE, concretizing and expanding the curricularization of the extension in these courses.

METHODOLOGY

The entire Extension Project referred to in this article was developed at the Plant Physiology Laboratory (LAFEV) at the State University of Western Paraná, UNIOESTE, Cascavel PR campus, from 2023 to 2024.

A booklet on Plant Physiology practices and a descriptive catalog of the laboratory's teaching materials were prepared to facilitate the loan process aimed at the public of the university's students in the respective internships teachers of the schools of Cascavel, prepared in a digital scope being printed and distributed. Lectures and mini-courses were also prepared for the guidance and training of educators, as well as exhibitions at fairs, schools, guided visits to LAFEV (Figure 1) and also the preparation of didactic models, valuing the curricularization of the participants of the extension project and for the curricularization in undergraduate courses in biological sciences.

The training of elementary and secondary educators was carried out through workshops focused on Plant Physiology practices, in order to update them on practical classes in Botany and also to show what is done at the university to the community (Figure 2).

Revista ARACÊ
ISSN: 2358-2472

Figure 1: Guided tour of LAFEV

Source: The author, 2024

Figure 2: Workshop with teachers

Source: The author, 2024

RESULTS

Guided visits (Figure 1) were made by elementary and high school students to the plant physiology laboratory in order to learn about the botanical area and research, participation of 1st year undergraduate students working in the extension during the UNIOESTE career fair, in this way interdisciplinarity occurs, enabling the integration of university and community.

A booklet on Plant Physiology practices (Figure 4) was developed to help teachers and students in the classroom or during extension, as well as a Catalog of didactic materials (Figure 3) containing illustration, description and use of pedagogical materials from the Plant Physiology Laboratory, facilitating the loan of materials to students and teachers so that they can use in the classroom.

Revista ARACÊ
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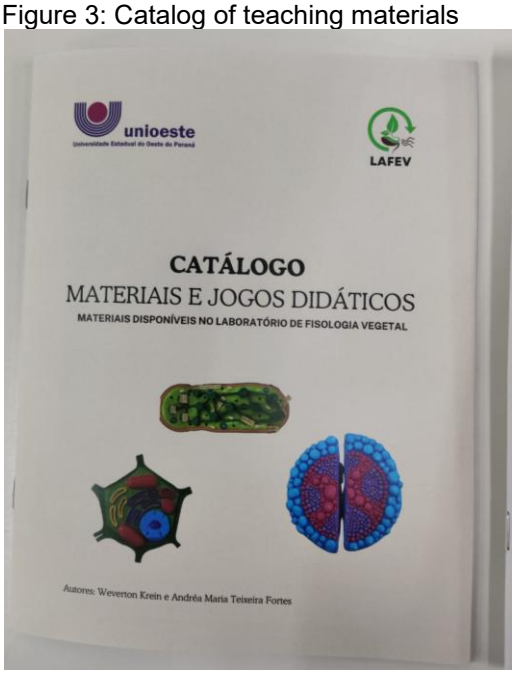
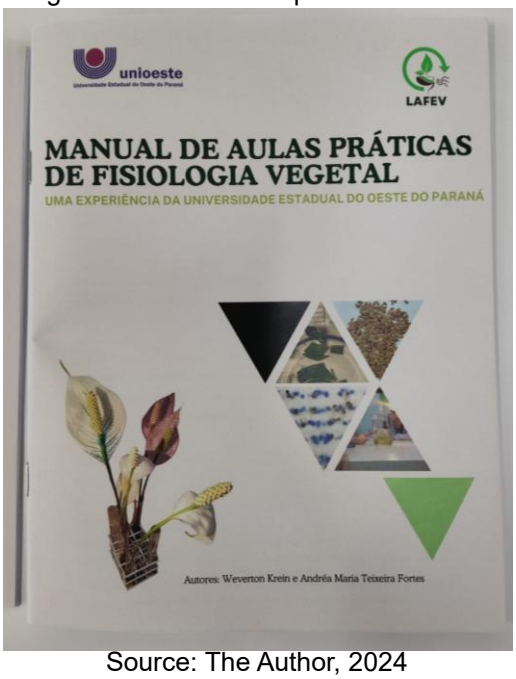
Figure 3: Catalog of teaching materials



Source: The Author, 2024

Figure 4: Workbook of practical classes



Source: The Author, 2024

The materials were exhibited and distributed in the community and in the participation in the Southern Region Extension Seminar (SEURS), which took place in Porto Alegre in September 2024. The participation of the extension in UNIOESTE's guided tours and events values demonstrating the research areas of the Plant Physiology Laboratory and uncomplicating botanical topics, enabling the visualization of plant slides or through simple practices such as "Pigment separation by paper chromatography" "Permeability of soil types and influence of root types" (Figure 6).

Figure 5. Laboratory prepared for visits and reception of schools

Source: The author, 2024

Revista ARACÊ
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Figure 6: Participation of undergraduate students in the event "University in the community"

Source: The author, 2024

DISCUSSION

Extension along with the use of materials has proven to be a tool of great importance for fixing the contents of the participants of the visitation, in the supervised internships and in the curricularization of the extension, together with the dialogued explanation, in addition to providing facilitation of visualization of microscopic structures, working creativity, manual activities, motor coordination, approximation of reality thinking about social contexts, accessibility, transformation of lives, inseparability.

The lack of interest in Botany and the absence of research focused on the study of plants in both elementary and high school is notorious, and this is of great concern (Pinto *et al*, 2009), taking into account the importance of plants for the maintenance of life on the planet.

Thus, there is a need to seek strategies so that this teaching is lighter and that the teaching of Science and Biology, which has been carried out through lists of scientific names, of words far from reality, is transmitted with concepts closer to everyday life, for a better understanding of both students and teachers (MINHOTO, 2003).

Revista ARACÊ
ISSN: 2358-2472

This difficulty is related to several factors, such as the difficult language with which such content is presented (39%), the absence of practical classes (16%) and the lack of connection with reality (15%), in addition, 28% stated that they did not have any aspect that hindered learning and only 2% of the students mentioned the teacher's didactics, demonstrating that didactic relationships are not always the main factors that hinder learning (MELO *et al*., 2012)

Thus, practices such as visits to laboratories and the use of didactic models have been shown to be of great help to demystify the aversion of students and professors to botany topics, and to bring the university closer to the community, materializing the curricularization of extension in undergraduate courses.

It is visible that teachers seek improvement, and that the main challenges encountered by them are a consequence of the lack of training for these contents, material, laboratories, associated with the lack of concentration, understanding of scientific concepts, terms and names, lack of interest and inattention of students (OLIVEIRA *et al*., 2022). And these points make the curricularization of extension even more important, because undergraduate students can bring this update, and also provide the experience with the practical part, which is lacking in schools, and the approximation of Botany with the daily lives of students.

CONCLUSION

Curricularization plays an important role in the formation of students, enabling the development of skills obtained through curricular disciplines and brings sensitivity when working with the population, developing cultural, personal, scientific and professional baggage.

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Revista ARACÊ
ISSN: 2358-2472

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