Teaching and learning Botany with a democratic and collaborative teaching approach:
A report with undergraduate students

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Introduction

Botanic knowledge is as important for student training as knowledge from other biological areas, such as Zoology and Microbiology (Wiggers & Stange, 2013). Plants and organisms alike are present in many routine contexts: the air we breathe, the food we eat, the clothes we wear, and the ecological processes that sustain our ecosystems (Silva *et al*., 2006). However, such botanic knowledge seems to be given little relevance when students learn about plants and other related organisms.

Teachers face difficulties when learning and teaching contents of the immense Kingdom Plantae (mostly due to deficient training and educational experiences acquired during their Undergraduate courses), or, in some cases, report it as being uninteresting, which may lead to inefficient or inadequate learning and teaching processes; in contrast, teachers with solid botanical knowledge may lack the practice to supplement their teaching practices by feeling unable to deal with living organisms on class (Krasilchik & Trivelato, 1995; Linhares *et al.,* 2002).

Methodology

The methodology focuses on botany and seeks better teaching and learning conditions by developing teaching skills through democratic and group decisions, thus fostering the interest of undergraduate students in improving the teaching of botanical content.

The first phase of the project was carried out during the second semester of 2016 with a group of 20 students at the IFSP campus Sao Roque (4th, 6th and 8th semester students) based on a methodology that aimed at promoting interaction among students of different semesters, the sharing of knowledge among the participants, and the promotion of the active voice of each and every member.

Freedom of expression provided throughout the course was essential for each one to work on specific botanical areas of his/her own interest in the way they thought to be appropriate, producing didactic materials to his/her own learning, to other teachers and to current and future students whom he/she will be responsible for.

Results

During the elective course, all participants produced and presented a variety of didactic materials, namely: a teacher's guidance booklet, a "Why should I study botany?" booklet, a botanical curiosities booklet, a slide collection of botanical structures, a magazine about seeds, fruits and trees, and botanical Pokémons®. All materials were validated and reviewed collaboratively (Figures 1, 2 and 3).

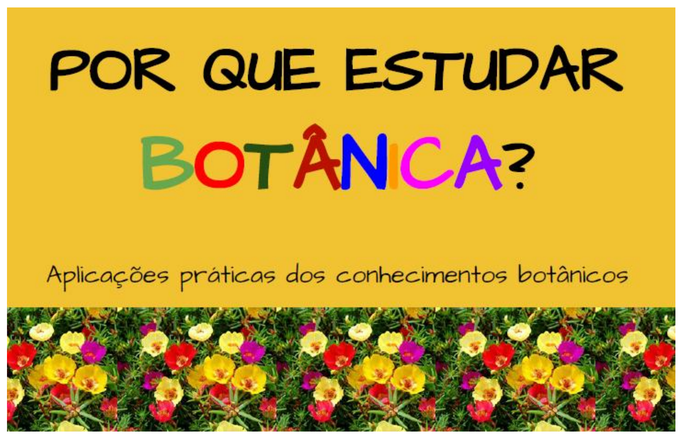

Figure 1. "Why should I study botany?" booklet. It aimed at increasing students' curiosity by giving them reasons and situations where botany is part of the daily routine.

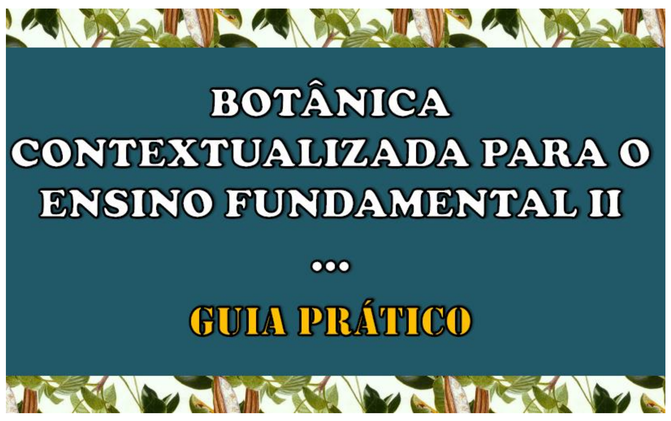

Figure 2. "The teacher's guidance" booklet. It was produced to serve as orientation. With hints and scripts, teachers will be able to enhance students' learning with practical activities and experiments.

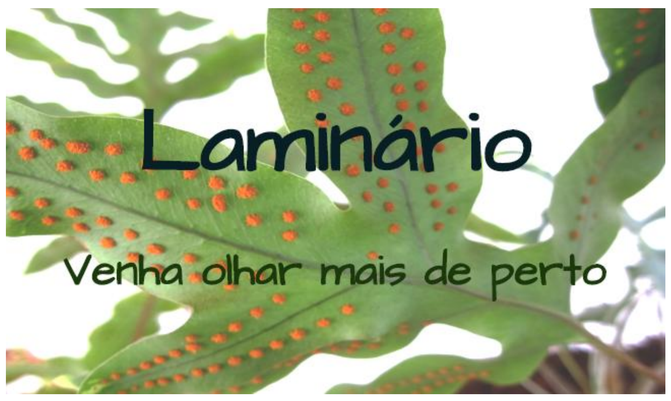

Figure 3. "Slide collection of botanical structures". This material was made aiming at presenting botanical structures with which students have difficulties to visualize and understand , usually due to their small size.

At the end of the activities, such productions were presented to the general public in an event called "Mostra Botânica+Legal" held at the IFSP campus Sao Roque (Figure 4). The event was registered as an institutional extension project, reaching 103 participants in ten hours of activities. A second version of the event occurred in the first semester of 2017 (Figure 5), reaching over 300 visitors.

Figure 4 (above). Logotype of the event "Mostra Botânica +Legal".

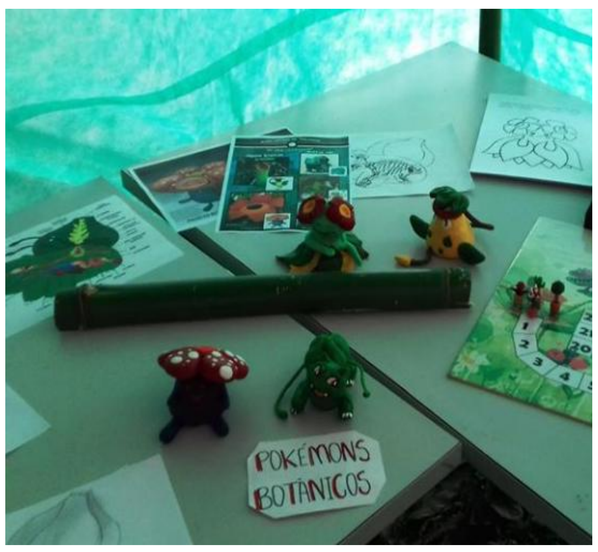

Figure 5 (right). Materials produced and exposed during the event.

Final Considerations

Preliminarily, we conclude that it is possible to let students be protagonists and produce didactic materials without the attachments of a traditional teaching system that emphasizes lectures, tests and tasks focused merely upon momentary, ranking-based examinations and formal evaluation papers.

References

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