

## Practical activities in distance teaching: students' perception of learning and their professional future

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**Abstract:** This study aimed to analyze students' perception, through an electronic questionnaire, of the Hands-on Environmental Management course in Distance Learning, in order to assess their understanding of the scope of the discipline and its contribution to their professional development. Approximately half of the students grasped the comprehensive nature of the practical discipline, which goes beyond the discussed topic and contributes to other skills required for the education of an environmental manager.

**Keywords:** environmental management; distance education, practical course.

### Atividades práticas no ensino a distância: a percepção do estudante sobre o aprendizado e o futuro profissional

**Resumo:** Este estudo objetivou analisar a percepção dos estudantes, por meio de um questionário eletrônico sobre a Disciplina Prática de Gestão Ambiental na EAD, a fim de verificar a compreensão sobre a abrangência da disciplina e a sua contribuição para a formação profissional. Aproximadamente metade dos alunos compreendeu a abrangência da disciplina que extrapola o tema abordado e contribui com outras habilidades necessárias para o gestor ambiental.

**Palavras-chave:** gestão ambiental; educação a distância; disciplina prática.

## Actividades prácticas en la educación a distancia: la percepción del estudiante sobre el aprendizaje y el futuro profesional

**Resumen:** Este estudio tuvo como objetivo analizar la percepción de los estudiantes, a través de un cuestionario electrónico, sobre la materia Práctica de Gestión Ambiental en EAD, con el fin de evaluar su comprensión del alcance de la materia y su contribución al desarrollo profesional.

Aproximadamente la mitad de los estudiantes captaron la naturaleza comprensiva de la materia, la cual va más allá del tema discutido y contribuye a otras habilidades requeridas para la formación de un gestor ambiental.

**Palabras clave:** gestión ambiental; educación a distancia; materia práctica

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## 1 INTRODUCTION

In distance education, practical activities can be understood as synonymous with professional education, that is, they aim to integrate theoretical and operational training, enabling students to exercise their professional skills in the future (Ferreti, 2010). With the constant changes in the world of work, these activities become essential for the development of interpersonal relationships, teamwork, and communication.

Fictitious situations that simulate reality are good ways to include practical activities in distance learning. It is well known that in the practice of their profession, individuals need to demonstrate knowledge that goes beyond the basic and conceptual. According to Ramos (2014), theories and concepts in isolation are very abstract and only make sense when inserted in concrete contexts. For this reason, combining conceptual learning with practical activities promotes the development of skills that include: analysis, synthesis, diagnosis, and the search for plausible solutions to the problems presented (Kuenzer, 2010).

Although practical activities are very important for the development of students' critical sense and technological and scientific thinking (Moreira; Aires; Lorenzetti, 2017), shared learning is one of the biggest challenges in distance education. This is because it requires many interactions between the participants involved to satisfactorily understand problems and identify their causes and effects. To develop these skills, students need to be constantly motivated to participate in discussions and share their ideas, values, and experiences with teachers and colleagues (Santos, 2007).

The need to provide students with a professional qualification that is even more oriented toward the labour market has led to the inclusion of a practical subject in the curriculum of a higher education institution in 2020, in the course Technology in Environmental Management in Distance Education (EAD) modality (PPC Gestão Ambiental, 2020). Considering the concept of educational intentionality, this subject was designed to promote the development of skills that contribute to the formation of active subjects in society, not only the act of teaching and learning (Rigon; Asbahr; Moretti, 2010). The main objective of the proposal was to develop skills and competencies to deal with complex, real-life situations that many students may encounter in the labor market. Also, the ability to integrate multidisciplinary knowledge by applying in practice the theoretical content learned throughout the course is noteworthy.

Although several studies advocate the development and implementation of practical activities as active methodologies (Araújo, 2009; Buss; Mackedanz, 2017; Duarte; Brod, 2021), it is not known how students perceive these initiatives in distance education. Therefore, this study aimed to analyze the students' perception of the possibility of applying their learning in different areas of the environmental manager's field of work, as well as the development of skills during online practice. The question that guided this study was: Do students of the distance learning course in Environmental Management perceive the importance of the subject Practice for their future professional performance?

## 2 DEVELOPMENT

### 2.1 Method

In 2020, the subject of Environmental Management Practice was introduced as a component of the curriculum matrix of the Environmental Management Technology course, as a mandatory requirement for obtaining the degree. The activities proposed in the Environmental Management Practice course were reported in the study by Pina and Marin (2022), who described the methodological proposal, as well as the lessons learned by the teachers in monitoring the course.

To evaluate the students' perception of the importance of the internship for their professional training, the survey was carried out through an electronic questionnaire using Google Forms and sent to each student who took the course in the second semester of 2021. The survey link was also made available on the course forum. The questionnaire included three discursive questions and three objective questions. The responses were anonymous.

The data were tabulated and analyzed in an Excel spreadsheet. In order to analyze the students' perception of the importance and scope of the Practical Course, classification criteria were established, divided into three categories: (i) Category 1 (Comprehensive) - understood the scope of learning and the importance of the Practical Subject for their training and professional career; (ii) Category 2 (Restricted) - did not understand the scope of learning, focusing only on the subject, but understood and recognized the importance of the Practical Subject; (iii) Category 3 ( Did not perceive) - did not understand the importance of the Practical Subject for their training and professional performance.

### 2.2 Results

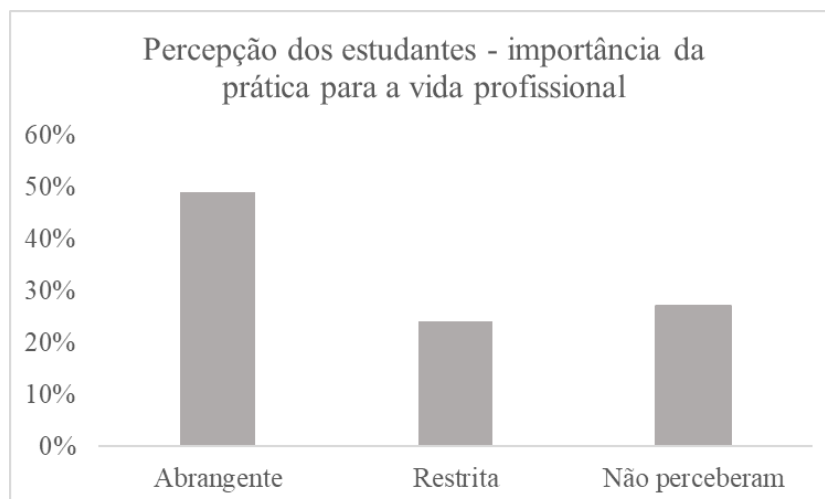
The 2021 practical class had 200 students regularly enrolled. The questionnaire about this activity was answered by 59 students, i.e. 29.5%.

According to the established classification criteria, 48% of the students understood the scope of learning and the importance of the Practical Course for their training and professional career (Category 1, corresponding to Comprehensive), perceiving the essence of the activity (Figure 1). This analysis included responses with keywords such as: professional life, profession, career, and integration of knowledge acquired during the course. According to Rodrigues (2006), practical activities are essential for the professional and intellectual training of students, and it is up to them to produce knowledge. The basis for the development of professional skills is related to the ability to transform theoretical content into solutions to everyday problems. The experience gained by these students will certainly be used in their professional lives, as they have seen other ways of applying the knowledge acquired through practical activities.

Students in Category 2 (Restricted) accounted for 24% of the total (Figure 1). In this group, the topic of the practical was the focus of the learning, showing that they did not understand the scope of the proposal. The keywords chosen for this category were: Conservation Unit, learning more about the topic, and learning more about the topic. For Freire (2012), the use of problematization through meaningful experiences could lead students in this category to construct knowledge through the discovery learning process. Practical activities aim to prepare students to experience real-life situations, as they stimulate critical thinking, share experiences, and allow discussions to arrive at one or more plausible solutions (Paiva et al., 2016). Although students were aware of the importance of the topic for environmental managers, they did not see other ways to use the knowledge acquired through the practice in their professional lives.

The number of students who did not understand the importance of the Practical Subject for their training and professional performance (Category 3, corresponding to Did not understand) was 28% (Figure 1). The set of answers in this category included meaningless answers, complaints about the way the course was conducted, negative phrases about the practice, and even general phrases. Within this group, there were complaints about the development of the practical activity. This was to be expected as these students did not understand the proposed objectives and were not used to developing more complex activities. The proposal brought a new challenge as it required students to think critically and discuss solutions to the problems presented. According to Pina and Marin (2022), activities like these are different methodological strategies that help students experience part of the functions required in the job market.

Figure 1- Percentage of students' perception of the importance of practice for professional life, according to the categories established



Source: elaborated by the authors (2022).

In the chart below, some answers have been compiled to exemplify each of the categories (Chart 1).

Chart 1- Example of student responses grouped into each of the categories

Category 1	Category 2	Category 3
<p>"It was useful for us to be an excellent professional, regardless of the professional's work it is necessary to go through this subject, among other cases the professional will not use their knowledge of the subject in favor of the work. So it's always good to have knowledge of the area, regardless of the job you do."</p>	<p>"With this practice, it was possible to evaluate and learn a little more about the subject, I considered the work very useful."</p>	<p>"Because it's a distance learning course, it's become difficult."</p>



<p>"It is through challenges that we become richer as people and as professionals. The subject Practice in Environmental Management provided me with immeasurable personal and professional learning through research into current environmental laws"</p>	<p>"I really enjoyed the opportunity and the experience of being able to see the development and creation of the conservation unit in practice."</p>	<p>"I didn't find the content very useful."</p>
<p>"The exercise is very important because it directly addresses relevant issues in the management profession."</p>	<p>"Yes, because conservation units depend on great technical care, which we need to know in order to make good use of them."</p>	<p>"In my opinion, this subject should have more examples, I found it very difficult."</p>
<p>"I find "Creation and Management of Conservation Units" extremely useful because I was able to do more research on the subject, read some management plans, learn about many units in our country through research that I didn't even know existed, make a projection for the short, medium and long term, practice my resource management skills and list priorities. In short, it has only increased my knowledge."</p>	<p>"Just the practical course to learn how to create a UC was very productive."</p>	<p>"A topic that wasn't covered during the course and without any presential assistance due to the difficulty we had."</p>

Source: elaborated and translated by the authors (2022).

The analysis of the student's perception of the usefulness of the content of the practical course for environmental managers showed that 54% considered the content extremely useful, followed by 36% very useful, 6.8% more or less useful, and 3% not at all useful. Considering these results, it is possible to conclude that the methodology favored the process of knowledge building, as the instructor

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accompanied and guided the discussions, strengthening the link between theoretical and practical aspects and promoting the development of critical thinking (Lopes et al., 2010). However, when analyzing these data, we have to take into account that it was an objective question, so the final analysis did not allow us to refine the students' perception of the essence of the proposed activity.

It is interesting to note that if we look at the answers to the objective questions, 81% of the students who did not understand the objectives and scope of the practice for their professional life, considered the activity to be of great relevance for their future professional work. From these results, it could be concluded that many students had difficulties in expressing their opinion when answering the discursive question, or simply chose an alternative that might be more agreeable and welcomed by the teacher. Writing and interpretation skills should be improved during academic life (Barbosa; Ramos; Ciríaco, 2009). Despite teaching that prioritizes reading and writing throughout students' lives, many students arrive at higher education with many deficiencies (Yamaguchi; Furtado, 2018). It should be remembered that reading and understanding a text is not only about what is written, but also how it is critically interpreted and socially applied (Freire, 1989). Among the students who did not consider the practical activity relevant, 57% responded that the knowledge gained from this experience could be useful in the future. These contradictory responses may confirm these difficulties.

Some of the different obstacles that certain students encounter in their academic life and, in the future, in their professional life, are related to a lack of comprehension and difficulties in reading and writing, which significantly affect the acquisition of new information and new knowledge (Yamaguchi; Furtado, 2018). These obstacles are the result of a mismatch or delay in the development of different knowledge systems, such as linguistic, textual, encyclopedic, and interactional (Koch; Elias, 2007; Koch; Elias, 2011; Koch; Elias, 2016). Thus, such deficiencies in text interpretation and the ability to express opinions through reports may have directly interfered with the student's ability to relate theoretical concepts to the proposed practical activity.

Despite the deficiencies and problems identified during the practical activity, 63% of the students were very satisfied with their participation in the experience (Chart 2). There are some textual elements of satisfaction presented by the students, such as: the opportunity to experience work related to the daily practice of an environmental manager, the service provided by the tutors at the Center, and the interaction between the student and the teacher-supervisor. Checking the level of satisfaction of those involved in academic activities makes it possible, among other things, to outline improvements in the methodology to meet the needs of the students (Ishida; Stefano; Andrade, 2013).



Chart 2- Students' satisfaction with the Practical Subject activity

"It was a very good experience as if I was there doing a job for a company or something. very good"

"At the beginning, I have to admit that I was quite scared, for me it was a lot of information at the same time, a lot of fronts to tackle, I didn't know where to start, but I went to the center, they gave me some very encouraging advice (...). ) In the exchange of messages with the counselor, I saw that I could achieve my goals, I became more confident, and little by little ideas emerged, I took a liking to the activity that previously seemed like an insurmountable obstacle and gradually became a challenge to be overcome, I felt that I was mastering the subject, I sought a lot of information in constant research and I achieved the goals I had set (...)"

"It was certainly a challenge, but with a lot of research and dedication, I managed to complete the internship. This subject has prepared us for future professional situations".

"I was already dreaming about the project for my city, it seemed real, but it was fictional."

"Of course, I was a little nervous at the beginning, but when the teachers and tutors presented the guidelines at the end, I felt very satisfied and confident with the result of the work that I can present every day in my current role and soon as an environmental manager".

Source: elaborated and translated by the authors (2022).

The overall perception of almost 50% of the students, as well as the satisfaction rate of 63%, shows that the practical activity was relevant and partially achieved the proposed objectives, which went beyond the question of content and prepared them with new skills for the job market. This and other practices can contribute to the formation of active individuals in society.

### 3 CONSIDERATIONS

About half of the students who took the course "Practice in Environmental Management" understood the scope of the subject, in other words, they understood the essence of the activity, so the students will certainly apply the acquired knowledge regardless of their specific field of activity. The skills developed during the course will enable them to deal with real situations in the labor market.

Those students who perceived the activity as limited or did not realize its importance were unable to apply the content covered to different situations they might encounter in the labor market. This is an existing challenge in the qualified training of academics, where they need to develop the

ability to apply theoretical/conceptual content in a practical and interdisciplinary way, as real solutions in the labor market are integrated.

Since difficulties in interpretation and writing accumulated during the years of basic education may have interfered with the perception of other students, it would be interesting if colleges, university centers, and universities offered pedagogical proposals to remedy these deficiencies. Despite this commitment on the part of higher education institutions, it would be necessary to carry out accompanying actions in the schools of basic education, giving priority to interpretive, textual, argumentative, and behavioral skills. In this way, students can enter higher education better prepared to face academic challenges and, in the future, to practice their professions with mastery and resourcefulness.

The inclusion of practical activities that bring students closer to the realities of the labour market should be strongly encouraged in distance learning. In addition to the skills and competencies that can be improved, the study showed that this type of activity generates satisfaction among students, giving them more confidence for their professional future.

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