



# Sensorial Gardens: How Students of Distance Learning Biological Sciences Graduation Course at UERJ “See” These Spaces

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## Abstract

The sensory garden, as a pedagogical instrument, facilitates learning and the development of environmental perceptions through the senses and their interaction with the environment for people with or without disabilities. There are no works, though, that relates the understanding of sensory gardens and distance learning students and this knowledge's possible reverberations in teacher education. In this perspective, the present work aimed to identify the perceptions of undergraduate students finishing the Biological Sciences course at UERJ/CEDERJ polo Magé. For this purpose, an online questionnaire was applied to 35 students of the target audience to know the perceptions about the sensory garden and the senses most acute there. Afterward, a content analysis of the answers was performed. Most students understand that the sensory garden activates the senses of the body for perceptions of the environment through interaction with the plants that compose it, and that it is an inclusion tool to assist in the teaching-learning process of people with disabilities. Among the different sources of information about the sensory garden, websites/social networks predominate, followed by the university. The sensory garden of the Botanical Garden of Rio de Janeiro stands out as the most visited by the interviewees. Although the public interviewed has some perceptions about the sensory garden, these perceptions do not cover its use in education as a tool to assist the teaching practice, being necessary to deepen the debate in academic education.

*Keywords:* undergraduates conceptions, Teacher Education, gardens

## Jardins Sensoriais: Como Alunos do Curso de Licenciatura em Ciências Biológicas EaD UERJ “Enxergam” Esses Espaços

### Resumo

O jardim sensorial, como ferramenta pedagógica, facilita a aprendizagem e o desenvolvimento das percepções ambientais através dos sentidos e suas interações com o meio para atender pessoas com ou sem deficiência. Contudo não existe trabalhos que relacione o entendimento dos jardins sensoriais e os alunos da Educação a distância e possíveis reverberações destes conhecimentos na formação docente. Nessa perspectiva, o presente trabalho teve como objetivo identificar as percepções dos licenciandos concluintes do curso de Ciências Biológicas UERJ/CEDERJ polo Magé sobre jardins sensoriais. Para tal, foi aplicado um questionário online a 35 alunos do público-alvo a fim de saber as percepções sobre o jardim sensorial e sentidos ali mais aguçados. Após, foi realizada análise de conteúdo das respostas. A maioria dos alunos entende que o jardim sensorial ativa os sentidos do corpo para percepções do ambiente por meio da interação com as plantas que compõem e que é um instrumento de inclusão para auxiliar no processo de ensino-aprendizagem de pessoas com deficiência. Dentre as fontes de informação sobre o jardim sensorial predominam os sites/redes sociais seguidas pela universidade. O jardim sensorial do Jardim Botânico da Grande cidade sobressai como o local mais visitado pelos licenciandos pesquisados. Apesar do público pesquisado ter alguma percepção sobre o jardim sensorial, essas percepções não abrangem sua utilização na educação como um instrumento para auxiliar a práxis docente, sendo necessário que se aprofunde o debate nas formações acadêmicas.

*Palavras-chave:* concepções de licenciandos, Formação de Professores, jardins

# Jardines Sensoriales: Cómo "Ven" Estos Espacios los Alumnos del Grado en Ciencias Biológicas de la EaD UERJ

## Resumen

El jardín sensorial, en cuanto instrumento pedagógico, facilita el aprendizaje y el establecimiento de percepciones ambientales a través de los sentidos y su interacción con el entorno para personas con o sin discapacidad. Sin embargo, no hay trabajos que relacionen la comprensión de los jardines sensoriales y los estudiantes de educación a distancia y las posibles reverberaciones de estos conocimientos en la formación de profesores. En esta perspectiva, el presente trabajo tuvo como objetivo identificar las percepciones de los estudiantes de pregrado que terminan el curso de Ciencias Biológicas en la UERJ/ CEDERJ — polo Magé. Para ello, se aplicó un cuestionario online a 35 estudiantes del público objetivo para conocer las percepciones sobre el jardín sensorial y los sentidos más agudos en él. Posteriormente, se realizó un análisis de contenido de las respuestas. La mayoría de los alumnos entiende que el jardín sensorial activa los sentidos del cuerpo para las percepciones del entorno a través de la interacción con las plantas que lo componen. Entre las diferentes fuentes de información sobre el jardín sensorial, predominan las páginas web/redes sociales, seguidas de la universidad. El jardín sensorial del Jardín Botánico de lo Rio de Janeiro se destaca como el más visitado por los entrevistados. Aunque el público entrevistado tenga alguna percepción sobre el jardín sensorial, estas percepciones no abarcan su uso en la educación como herramienta de ayuda a la práctica docente, siendo necesario profundizar en el debate en la formación académica.

*Palabras clave:* concepciones de los estudiantes universitarios, Formación de Profesores, jardín

## Introduction

The first sensory gardens appeared in Great Britain in the 1970s from the treatment of vegetable garden cultivation in health homes (Hussein, 2012). In the 1980s, they began to be used as tools in inclusive education in schools, serving blind people (Hussein, 2012). The sensory garden is a space designed in order to activate and promote the use of the five senses through the appreciation and interaction of the human being with the environment, establishing settings for fun, distraction, rest, socialization, treatment of diseases, and teaching (Leão, 2007).

Sensory gardens are addressed in education as non-formal teaching spaces and can be used as a place for scientific dissemination and a tool for practical classes inside or outside the school. These gardens provide Inclusive, Environmental Education and the teaching of Botany, acting to streamline the teaching of Biological Sciences (Borges & Paiva, 2009; Santos, 2019). The sensory garden can promote the rescue of memories, especially when it consists of plants that are, or were part of the lives of students, and thus encourages participation in activities and fixation of content (Borges & Paiva, 2009; Silvério, 2017).

The studies that relate sensory gardens and teaching, in general, focus on inclusive education, learning, therapy, leisure, and the well-being of people with disabilities and/or special educational needs (SEN), especially for those with visual and hearing impairments (Leão, 2007; Carvalho, 2011; Silva, 2018). It is observed, in the works,

the use of sensory gardens for teaching botany (Silva, 2014; Ferreira, 2016; Silveira, 2018; Santos, 2019), in the expansion of plant diversity, awareness of environmental issues, with emphasis on interdisciplinarity (Venturin, 2012; Spazziani & Oliveira, 2014; Carrasco-Dionísio & Santos, 2016; Silvério, 2017; Osório, 2018).

Inclusive education teachers have seen the sensory garden and its applicability in teaching, as an effective learning method for the educational development of students (Silva, 2018). Given that it allows students to assimilate the concepts learned in the classroom through interaction with the environment, awakening their senses and enhancing their skills (Silva, 2018). There are reports in the scientific literature that the sensory garden can provide relaxation, produce interest and desire in students to participate actively, helping in activities (Venturin, 2012; Spazziani & Oliveira, 2014; Carrasco-Dionísio & Santos, 2016; Silvério, 2017; Osório, 2018; Silva, 2018).

In academia, the contact of undergraduates with sensory gardens usually happens through projects carried out through university extension (Osório, 2018) or through the *Programa Institucional de Bolsas de Iniciação à Docência* (PIBID) (Institutional Program for Teaching Initiation Scholarship) (Spazziani & Oliveira, 2014). Some of these projects carry an interdisciplinary approach to the arts (Spazziani & Oliveira, 2014). However, there is no work that relates the understanding of sensory gardens and distance learning students, and the possible reverberations of this knowledge in teacher education. From this context, it is intended to understand the perception of students of the undergraduate course in Biological Sciences at UERJ/CEDERJ polo Magé about the sensory garden and its use in education, in order to assist future teaching practices.

## Methodology

### Field of Study

The Center for Distance Higher Education in the State of Rio de Janeiro (CEDERJ) has the objective of promoting public higher education of excellence in the model of Distance Learning (DL) to people who live far from large centers and far from public universities campus, through undergraduate courses, scientific dissemination and continuing education courses (extension) for teachers of basic and higher education, in agreement with Article 2 of the Supplementary Law No. 103 of March 18, 2002.

The polo CEDERJ Magé was founded in 2008 and has four undergraduate courses in the semi-attendance modality and each one is offered by one of the public universities of the state associated with the consortium: degree in Biological Sciences — Universidade do Estado do Rio de Janeiro (UERJ), degree in Mathematics — Universidade Federal do Estado do Rio de Janeiro (UNIRIO), degree in Pedagogy — UERJ and Bachelor in Administration — Universidade Federal Rural do Rio de Janeiro (UFRRJ) (CEDERJ, 2020).

## Target Group

Participated in the research, through a questionnaire, students of the degree course in Biological Sciences at polo CEDERJ Magé who were studying from the eighth period onward were treated in this work as concluding students. In October 2020, there were 240 students with active enrollment in the course of Biological Sciences, and of these, 105 students were enrolled in the periods that make up the group of completers, according to data from the academic system (SISTACAD)<sup>1</sup>.

The type of research of this work, as to the approach, is qualitative-quantitative, with descriptive objectives (Gerhardt & Silveira, 2009). An investigation was conducted considering the previous knowledge of the students of the Degree Course in Biological Sciences at UERJ/CEDERJ — Magé about the sensory garden and its use in education. This investigation was carried out through the collection, analysis, and interpretation of data to describe them without interference and manipulation of the researcher in the results (Lakatos & Marconi, 2003; Gerhardt & Silveira, 2009).

## Questionnaire

A questionnaire was applied in the year 2021 to investigate the perceptions of the graduating students about the sensory garden and its application in teaching. The Informed Consent Form (ICF), containing the necessary information about the research, preceded the questionnaire. The students participated in the questionnaire only after the acceptance of the Informed Consent Form and approval of the project by the Research Ethics Committee of UERJ, number: 50549321.8.0000.5259.

The questionnaire was online, designed in Google Forms, and sent by e-mail, through the Virtual Learning Environment of the course (Platform CEDERJ), to the Biological Science degree students from UERJ/CEDERJ — Magé who were part of the focus audience of this work. The formulation of the questions of the questionnaire for this research was developed from readings of works that deal with the sensory garden in education, such as Borges & Paiva (2009); Venturin (2012); Silva (2014); Spazziani & Oliveira (2014); Carrasco-Dionísio & Santos (2016); Ferreira (2016); Silva (2018); Silveira (2018) and Santos (2019).

A pre-test of the questionnaire was conducted with a total of 07 students concluding the degree course in Biological Sciences at the UERJ/CEDERJ — Magé to check and correct possible flaws that may occur in the formulation of the questions, to avoid inaccurate results and double interpretation (Gil, 2002; Lakatos & Marconi, 2003; Gerhardt & Silveira, 2009). After the pre-test, there were no changes in the questions of the questionnaire, and the answers of the students participating in the pre-test were included in the analyses.

The content analysis of the questionnaire answers was performed from the separation and division of data into categories presented in charts, prepared in Excel to find out how the analyzed group perceives and understands the sensory garden (Bardin, 1977).

<sup>1</sup> <https://sistacad.cederj.edu.br/>

## Participants Profile

The questionnaire was answered by 35 concluding students of the degree course in Biological Sciences at UERJ/CEDERJ — Magé, which represents 33.4% of the total number of students concluding this course. In addition, it represents 14.6% of the total number of students registered in the Biology course UERJ/CEDERJ — Magé. The profile of the participating public, considering the city of residence, age range, gender, graduation period, and whether they already had previous graduation (Table 1). The participants were named in this paper by order of questionnaire submission.

Most of the public surveyed (30%) lives in Magé, where the polo is located, and in Itaboraí, a neighboring city. Regarding the age bracket, there is a prevalence of a young public (74%), under 40 years old. The largest participation of the target audience who answered the questionnaire was 77% female and 23%, male. Among the different periods studied by the graduating students, there was high participation in the questionnaire (74%) of students who were studying from the 10th to 15th periods, and from the 17th and 18th periods, there was no participation from any respondent. The degree course in Biological Sciences at the CEDERJ in Magé predominates as the first graduation of the highest percentage (83%) of the undergraduates surveyed.

**Table 1**

*Profile of undergraduate students in Biological Sciences at UERJ/CEDERJ — Magé polo who answered the questionnaire*

City of residence	Percent (%)
Magé	30
Itaboraí	28
Guapimirim	11
Rio de Janeiro	11
Duque de Caxias	8
São Gonçalo	3
São João de Meriti	3
Maricá	3
Teresópolis	3
Age group (years)	Percent (%)
21 - 30	40
31 - 40	34
41 - 50	23
Over 60	3
Genre	Percent (%)
Female	77
Male	23

**Table 1**

*Profile of undergraduate students in Biological Sciences at UERJ/CEDERJ — Magé polo who answered the questionnaire (continuation)*

<b>Biological Sciences graduation period at UERJ/CEDERJ</b>	<b>Percent (%)</b>
8	6
9	9
10	14
11	17
12	6
13	17
14	6
15	14
16	3
19	8
<b>Is this your first degree?</b>	<b>Percent (%)</b>
Yes	83
No	17
<b>What was your first degree?</b>	<b>Percent (%)</b>
Environmental Management	5,7
Accounting Sciences	2,9
Nursing	2,9
Biological Sciences (Bachelor)	2,9
Logistic	2,9

Source: The authors, 2022.

## **Results and Discussion**

### **Perception About the Sensory Garden**

The question about the student's understanding of the sensory garden was grouped into four categories, which are presented in Table 2. The largest portion of the target audience (74%) has some conception of the sensory garden and 26% of this same sample answered having no understanding of a sensory garden.

The category "Activation of the senses" presents the highest percentage of responses (63%) among the four categories (Table 2). This category includes the answers from undergraduates who perceive the sensory garden as a space to develop the body's senses for understanding the environment by interacting with the plants that make up the garden. In this category, it is possible to verify that the participants understand that the main purpose of a sensory garden is to stimulate the five human senses through

interaction with the plants and other components that make up the garden to activate the perceptions. However, in this category, it is possible to observe in the reports that the participating undergraduates also understand that, for there to be an activation of the senses, the organs of the sensory system need to be used in a deeper and more detailed way within an environmental sensitization. In this way, the students researched understand that information about the space in which they are inserted is received through the senses, and thus they perceive the environment. In this category, the responding students perceive that the sensory garden awakens other senses besides sight. This perception is corroborated by the walk through the sensory garden performed with bare feet and the momentary restraint of vision, usually through blindfolds (Matarezi, 2006; Borges & Paiva, 2009).

**Table 2**

*Undergraduates understanding of the sensory garden in Biological Sciences at the UERJ/CEDERJ polo Magé*

Category	Description	Example	Percent (%)
Senses activation	Work the body's senses for perceptions of the environment through interaction with the plants that compose the garden.	<p>“Gardens that stimulate the 5 senses.”</p> <p>Respondent 15</p>	63
		<p>“A garden that awakens and stimulates the senses of the human body (touch, smell, taste, sight, and hearing).”</p> <p>Respondent 28</p> <p>“A garden that allows people to touch the little plants to stimulate senses other than sights, such as touch and smell.”</p> <p>Respondent 30</p>	
No comprehension	Never heard of a sensory garden	<p>“I didn't know the term before the form, so I don't have any definition of it.”</p> <p>Respondent 08</p> <p>“I have no idea what it is.”</p> <p>Respondent 16</p> <p>“Forgive my ignorance, but I am 'hearing' about this subject now.”</p> <p>Respondent 17</p>	26

**Table 2**

*Undergraduates understanding of the sensory garden in Biological Sciences at the UERJ/CEDERJ polo Magé (continuation)*

Category	Description	Example	Percent (%)
Inclusion	To assist in the teaching-learning process of people with deficiencies.	<p>“It’s a space with plants to make it easier for visually deficient people to understand and feel.”</p> <p>Respondent 3</p>	8
		<p>“Plants with various textures and smells, for people with some “disability” as in vision, for example, know how to differentiate”</p> <p>Respondent 5</p> <p>“Sensory contributes a lot to inclusion, whether in the school environment or other spaces [...]”</p> <p>Respondent 27</p>	
Curiosity awakening	Plants that spark interest and curiosity	<p>“Garden with eye-catching plants.”</p> <p>Respondent 6</p>	3

Source: The authors, 2022.

The second category “no understanding” corresponds to 26% of the participant’s answers. In this category are grouped the answers of undergraduates who do not know what a sensory garden is. In this category, the participant reports that they have never heard about the subject or only heard about it for the first time through the questionnaire of this research. Although several places in Brazil have sensory gardens (Leão, 2007), the narratives of the participants in this category present that they are still not easily accessible, and not as well known or disseminated to all people.

In the third category, “Inclusion”, 8% of the answers were representative. In this category are included the answers that understand the sensory garden as a facilitating tool in the construction of knowledge for people with disabilities. In their answers (Table 2), the surveyed students reported the sensory garden as a place with the purpose of inclusion. This relationship with inclusion may be associated with the term sensory garden, which is widely applied to characterize gardens designed to serve people with disabilities (Silveira, 2018). In this category, it is observed that undergraduates recognize the sensory garden as a pedagogical resource in inclusive education in regular education.



Also in this category, the sensory garden is mentioned as a facilitator in the understanding and perception of people with visual deficiencies. However, as a teaching method, it favors the interest and deeper experimentation through the senses by the elements that compose it, for people with different disabilities (Silva, 2018). In the third category, it was possible to observe the participants perception of the sensory garden attending to people's disabilities as an accessible and inclusive space. One of the answers in Table 2 mentions that the sensory garden caters to people with some disabilities. In this sense, the sensory garden is an inclusive mechanism and space that covers much more than welfare and recreation, being accessible to all people, especially to those with different disabilities and limitations, therefore, it differs from conventional gardens (Bins-Ely et al., 2006). However, promoting accessibility in these types of gardens is a contemporary issue and must be designed based on people's limitations, whether physical or sensory, to eliminate obstacles that may hinder the access of these visitors (Leão, 2007).

The fourth category "Curiosity awakening" has the lowest participation of the public surveyed (3%) and involves understanding that the sensory garden is composed of plants that excite interest and curiosity. However, the choice of plant species to compose a sensory garden is based on the safety they can offer to their visitors (Silva, 2014), and on their specificities that in the interaction with plants allow greater perception, stimulating more the human senses known as "organoleptic" properties (Borges & Paiva, 2009). However, as understood by the undergraduates surveyed and by the authors Borges & Paiva (2009), it is the plant diversity that makes up the sensory garden, through interaction with the visitor that arouses curiosity activating the interest and active participation of the learner in the practice of the exercise. Other researches on learning using a sensory garden also bring this same perspective of its diverse nature, sharpening curiosity and awakening the interest of the student, working perceptions through the senses (Carrasco-Dionísio & Santos, 2016; Ferreira, 2016). The curiosity awakened through the sensory garden plants is portrayed as an essential agent in the process of learning and knowledge construction (Borges & Paiva, 2009).

### **Visitation and Information Sources About the Sensory Garden**

More than half of the undergraduates (59%) mentioned that they had not had the experience of visiting a sensory garden. All respondents (100%) who have visited a sensory garden said they enjoyed the experience very much. Table 3 displays the sources from which the target audience had access to information about sensory gardens and the locations where visits to these gardens took place.

**Table 3**

*Access to information and Sensory Gardens visited by graduating students in Biological Sciences UERJ/CEDERJ polo Magé*

<b>How did you hear about the sensory garden?</b>	<b>Percent (%)</b>
Never heard about it	29
Websites/social networks	23
University	20
Friends	11
Botanical garden	11
Monographs	3
Museums/art spaces	3
<b>Where did you visit a sensory garden?</b>	<b>Percent (%)</b>
Botanical Garden/Rio de Janeiro	35
Schools/some residences	3
Gramado-RS	3

Source: The authors, 2022.

Websites/social networks added to the University are the sources of dissemination about the sensory garden that reached the highest percentages (43%) among this target audience (Table 3). Websites and social networks (23%) predominate over all other means indicated that are currently internet resources widely used to spread information and communication among various audiences of different ages (Costa, 2019). Websites and social networks help mainly, in academia, to spread knowledge in the areas of Education and Science, enabling a more democratic and easily understood vocabulary using the sensory garden (Costa, 2019). Following stands out the university (20%) that usually, promotes the contact of people and students with the sensory garden through projects carried out through university extension (Osório, 2018) or institutional programs as in the case of the Teaching Initiation Scholarship (PIBID) (Spazziani & Oliveira, 2014).

The categories monograph and museums/art spaces obtained the lowest percentages (3% each) as a source of disclosure about the sensory garden by the surveyed public (Table 3). The sensory garden is a contemporary environment that has recently emerged in museums (Finck & Pugliese, 2019). In them are rare events that allow and propose the interaction of the public with the plants displayed in these enclosures (Camacho et al., 2013).

The largest percentage of the surveyed public who had already visited a sensory garden (35%), said they had done so at the Botanical Garden of Rio de Janeiro (Table 3). This space has had a sensory garden since 1995, which was created, in principle, to provide people with visual impairment, with contact with the environment through their other senses. However, its route and the choice of plants that compose it were planned so that people with other disabilities could interact with and enjoy nature (Leão,

2007). The sensory garden of the Botanical Garden of Rio de Janeiro contributes to the construction of knowledge through the active, therapeutic and inclusive participation it provides to its visitors (Santos, 2019).

In October 2019, the Biological Sciences course at UERJ/CEDERJ polo Magé held a field class at the Botanical Garden of Rio de Janeiro with students taking the disciplines of Extension Activities and Botany, most of these students were undergraduates. This activity allowed the undergraduate students to learn about the history of the park, and visit and interact with its Sensory Garden. In addition, one of these undergraduate students answered that he had visited the sensory garden of the Botanical Garden more than once, as can be seen in this brief report:

*“The two times I visited a sensory garden, both were at the Botanical Garden. The first time I already reported in the previous answer and the second time was during a college tour (CEDERJ).”*

Respondent 30

The field activities are relevant to complement the undergraduates academic education, especially when the content is not presented in graduation, because they relate theory to practice, enabling experiences and interactions between students, teachers, and the environment in a real and meaningful teaching-learning environment (Dobler et al., 2011).

In Table 3, colleges/some residences and the city of Gramado-RS appear as places to visit the sensory garden with the lowest shares (3% each) in the answers of the undergraduates surveyed. Some regular education schools have sensory gardens, commonly through projects implemented by universities (Spazziani & Oliveira, 2014; Ferreira, 2016; Silveira, 2018). Regarding residences, spaces with these gardens can currently be found. There are works that deal with projects using sensory gardens for residential landscaping, demonstrating the concern with the inclusion of people with disabilities and their families, elaborated with the purpose of offering safety, well-being, and improvement of the quality of life of these people (Masutti & Chiele, 2018). One of the undergraduates surveyed mentioned having visited a sensory garden in Gramado-RS. However, in Rio Grande do Sul there is only a sensory garden in Nova Petrópolis, known as *Jardim da Percepção* (Leão, 2007). Thus, it is not possible to know if such a space exists, but it is not publicized, or if the participant identified another space as a sensorial garden.

The response of one of the graduating undergraduates cannot be counted as a sensory garden visitation location:

*“There is a beautiful one in the Bradesco building in Rio de Janeiro. Every time I pass by, I look at it because it is very beautiful. I have already made one in my house with flowers in 11 hours.”*

Respondent 27

In the student's answer, it is possible to observe that he confuses about the concept of a sensory garden because in the Bradesco building in Rio de Janeiro there is a vertical garden. The student still reports that he saw it, not that he visited it. In addition, at the end of the sentence, he makes it clear that he made a garden in his house of only one plant species. The sensory garden can be built vertically (Silva, 2014), but the elements that compose it, among them, the plant species, must have characteristics to awaken in their visitors the interaction and environmental perception through the five senses (Leão, 2007; Borges & Paiva, 2009). In addition, to have this interaction, the sensory garden must be composed of very varied plant diversity, categorized as "trees, shrubs, herbs and grasses" (Leão, 2007,) which can be ornamental, medicinal, aromatic, spices and vegetables (Bezerra, 2020; Silva, 2018). Through the observation in the above reports, it becomes important to invest in a real presentation of the sensory gardens for the students, so that they can have a better understanding of their structure and functioning.

### Final Considerations

The perceptions of the final year students of the Biological Sciences graduation course at UERJ/CEDERJ polo Magé consider the sensory garden as a specific garden to activate the five human senses in a way that awakens the interaction with the plants that compose it. These perceptions include the sensory garden as a space of inclusion that helps in the teaching-learning process of people with disabilities and as a place composed of plants that arouse interest and curiosity. However, a portion of the surveyed students had never heard about the sensory garden. Thus, it can be seen that the students who finished their undergraduate degree in Biological Sciences did not know the importance of the sensory garden in education.

Through this work, it was possible to notice that the main means through which the undergraduate students of the undergraduate course in Biological Sciences at the UERJ/CEDERJ polo Magé have to know about sensory gardens were the websites/social networks. The university was the second most mentioned source by undergraduate students. The public surveyed mentioned other sources, such as friends, botanical gardens, monographs, and museums/art spaces in less relevance. Given the above, it is observed that the university still does not adequately work on the construction of perceptions about the sensory garden during the period of teacher education in the undergraduate course in Biological Sciences at the UERJ/CEDERJ polo Magé.

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No potential conflict of interest was reported by the authors.

**Compliance with Ethical Standards**

The authors declare this study was conducted following ethical principles.

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