



Potentiality of virtual trails as a pedagogical activity that triggers aesthetic-environmental reflection

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ABSTRACT

This paper aims at introducing the potentiality of the use of virtual trails as an innovative and sensitizing pedagogical activity that triggers aesthetic-environmental reflection in Basic and Higher Education. One hundred and seven students that attend the Instituto Federal Sul-rio-grandense (IFSul) in Pelotas, Rio Grande do Sul (RS) state, Brazil, and the Universidade Federal do Rio Grande (FURG), in Rio Grande, RS, Brazil, participated in the study. After carrying out the pedagogical activity which consisted in following three virtual trails, they filled out an online form about the use of virtual trails as pedagogical activities to discuss socioenvironmental issues. The corpus was analyzed by the Thematic Analysis which led to two categories of analysis: a) Virtual trails as a strategy for encouraging aesthetic-environmental reflection; and b) Connection with nature. Results showed an innovative pedagogical activity that enables contact with the natural environment, encourages aesthetic-environmental reflection and develops human sensitivity, creativity and criticality by means of whole Education.

KEY WORDS: Aesthetic-Environmental Education. Trails. Whole Education.

1 INTRODUCTION

In the 1990's, Renato Russo stated that “we should love people as if there were no tomorrow” and made us think about “what will you be when you grow up?” About thirty years later and facing a global socioenvironmental crisis, we resort to Russo's song to reflect not only on the need to love people and the other forms of life to be able to live a happy tomorrow but also on Education, the way of being what we want to be and what we can be.

Therefore, we believe that one of the challenges of contemporaneous society in the educational dimension is to promote innovative pedagogical proposals whose methodologies encourage the development of sensitivity and creativity and, thus, contribute to the whole education of human beings, both to foster care for themselves and the other forms of life and to practice full citizenship.

According to Vasconcellos (2021), when pedagogical practices are critical, they are designed as innovative activities that contribute to the humanization process. The author states that innovation derives from want and the need for resilience by means of knowledge and material conditions in every context aiming at transformation. He points out that schools must commit to effective learning, whole-person development and critical joy. Thus, this role must be taken on individually and collectively,

[...] by means of critical, creative, significant and long-lasting appropriation of needed knowledge (concepts, procedures and attitudes) aiming at potentialization of conscience, character, citizenship and education for work based on solidarity, autonomy, justice, peace and responsibility. (VASCONCELLOS, 2021, p. 35-36).

Alvarez, Schmidt and Estévez (2017) highlight the importance of the development of Aesthetic-environmental Education in educational settings where sensitizing and emancipatory practices may promote whole Education and encourage people to face and overcome socioenvironmental issues. According to Silveira, Freitas and Estévez (2020, p. 34), the Aesthetic-Environmental Education, “principles and objectives of Aesthetic-environmental Education carry the whole development of human beings in their individualities, including the use of empathy, sensitivity, creativity, otherness, solidarity”.

Thus, we believe that Aesthetic-environmental Education is education that aims at developing human sensitivity and perception by means of pedagogical practices that not only promote contact with the environment – natural or constructed one –, but also encourage sensations and feelings to establish harmonious relations among all beings and comprehension of socioenvironmental phenomena in the search for social transformation.

Estévez (2015) analyzes the Greek origin of the word aesthetic (*aisthesis*) and states that it refers to two basic senses related to sensitive and corporal knowledge: esthesia refers to the faculty of feeling while aesthetic relates to sensitivity, i. e., sensation and perception. As a result, aesthetic education promotes articulation and integration between cognitive and sensitive knowledge.

Aesthetic-Environmental Education agrees with principles and objectives of Environmental Education and advocates the development of educational processes that contribute to promote individual and collective awareness raising by means of dialogical, sensitive and affective educational practices. As a result, it becomes an important way of human beings' whole education since it fosters the use of empathy, sensitivity, creativity, otherness, solidarity. Therefore, the methodological presupposition of Aesthetic-Environmental Education is transdisciplinarity as a strategy for integrating concepts, methods and investigative and pedagogical practices. Transdisciplinary practices incorporate elements, such as sensitive and aesthetic knowledge, that are sometimes rejected by the traditional model and become significant ways of whole education since they enable problematization of life in all relations by encouraging and favoring better reading of the world, as advocated by Paulo Freire (2011a).

The need to insert the aesthetic dimension into educational processes is mentioned by Duarte Jr (1998) as a requirement of processes of human education, since feeling precedes thinking; thus, human beings are emotions before thoughts. The author states that the aesthetic dimension of Education enables “to make students create senses and values that underlie their actions in their cultural environment so that there is coherence and harmony among feeling, thinking and doing” (DUARTEJR, 1988, p. 18).

Regarding the transformation of educational settings to enable the aesthetic-environmental dimension to take part in their everyday life, Freire and Shor (1986) pointed out the need to reshape classroom environment. They added that “reinventing visual and verbal aspects in class are two ways of opposing destructive ways of passive education” (FREIRE; SHOR, 1986, p. 144).

From this perspective, we reflect on educational processes developed in the school environment and highlight the need to propose pedagogical strategies for developing the aesthetic dimension. It requires effort, flexibility, creativity, empathy and the explicit intention to break with the so-called banking model of education (Freire, 2011b) to move towards more affective and sensitive Education, as shown by Estévez (2012; 2015).

We advocate that it is necessary to invest in educational processes that break with the logic of fragmentation of both contents and places and even of the hierarchy found in educational settings. Dichotomies, such as reason-emotion, intellect-sensitivity and body-mind, must be broken. We need integration, fraternal dialogue, empathy, compassion.

To do so, we need sensitization to awaken numb senses or, in Duarte Jr's words (1998), anesthetized senses. According to the author, anesthesia hinders and, at times, prevents

interaction with other human and nonhuman beings. When Duarte Jr (1998) advocates aesthetic education, he highlights that limiting our understanding of the world merely to the intellectual development is denying the potentiality of affectivity and sensitivity.

In order to contribute to people’s whole education and to incorporate the aesthetic dimension into our teaching, we resort to virtual trails as pedagogical tools to promote aesthetic-environmental reflection in Educational Institutions. According to Andrade (2021, p. 152), such reflection broadens “possibilities of comprehending the world based on emotions, feelings, things that touch our bodies and minds and connect reason and emotion”.

Trails which have pedagogical aims are called interpretive trails. Paiva and França (2007) point out that have recreational and/or educational aspects which not only encourage curiosity, creativity and sense of collectivity but also broaden possibilities of discovering and rediscovering.

Montiel and Andrade (2022, p. 239) add that “since interpretive trails enable immersion in the natural environment, they broaden possibilities of understanding socioenvironmental phenomena and become a strategy for facing social inequalities”. Such trails may be carried out either in-person, i. e., *in loco*, or virtually, i. e., remotely, with the use of technological resources, such as smartphones, computers and 3D glasses.

Therefore, we carried out virtual trails to provide experiences that stimulate the connection among corporal, aesthetic, social and environmental dimensions and that trigger reflection on environmental themes. This paper aims at introducing the potentiality of the use of virtual trails as an innovative, sensitizing pedagogical activity that triggers aesthetic-environmental reflection in Basic and Higher Education.

2. METHODOLOGY

The pedagogical strategy for using virtual trails was planned as the result of the need for physical distancing imposed by the COVID-19¹ pandemic. It aimed at developing the content trails and at potentializing the development of Aesthetic-Environmental Education in the following courses: Physical Education and Ecotourism Activities in High School at the Instituto Federal Sul-rio-grandense (IFSul) in Pelotas, Rio Grande do Sul (RS), Brazil; and Environmental Education in Formal Teaching in the Post-graduate Program in Environmental Education (PPGEA) at the Universidade Federal do Rio Grande (FURG), in Rio Grande, RS, Brazil. Despite the end of the pandemic, it has still been used as a pedagogical resource to develop the theme trails in in-person educational activities.

Material resulting from records of such activity comprise the corpus of analysis of the study entitled “Aesthetic-Environmental Education in environmental technicians’ and environmental educators’ development”, which was approved by the Ethics Committee at the Universidade Católica de Pelotas, in Pelotas, RS, Brazil (no. 46601121.0.0000.5339).

To write this paper, we used the corpus produced by 107 students who attend Environmental Education in Formal Teaching taught at FURG and Physical Education taught at

¹ COVID-19 is a disease caused by the coronavirus called SARS-CoV-2 which has killed thousands of people since 2019 (MINISTÉRIO DA SAÚDE, 2021).

IFSul (campi Pelotas and Pelotas-Visconde da Graça) in 2021. All participants were identified by codes after having signed the Free and Informed Consent.

After the debate about the theme interpretive trails as a pedagogical strategy for developing Aesthetic-environmental Education, students were asked to experience three virtual trails² on the Parque das Neblinas, in Mogi das Cruzes and Bertioga, São Paulo (SP) state, Brazil, available at YouTube-Instituto Ecofuturo. While using the 360-degree image, students could experience the route autonomously and perceive the environment individually.

After experiencing the virtual trails, students reported their perceptions in an online form with open questions about the activity. The form encouraged them to write reflectively about sensations, emotions and socioenvironmental themes that they perceived throughout the experience. This study focused on questions related to the use of virtual trails as a pedagogical strategy to discuss socioenvironmental issues.

The Thematic Analysis was used for understanding the corpus, since its core is the theme under investigation, as pointed out by Gomes (2007). According to Souza (2019, p. 54), the process of thematic analysis starts when the researcher searches for “patterns of meanings and issues that may interest the study” in the corpus. After this process, we reached two final themes or categories: a) Virtual trails as a strategy for encouraging aesthetic-environmental reflection; and b) Connection with nature. Such categories are developed in the next item.

3. DISCUSSION OF RESULTS

As mentioned before, we resorted to the use of virtual trails in school settings to promote whole education of autonomous, sensitive and critical students so that, based on learning constructed in their educational processes, they may become agents that transform reality. In students' reports, we identified evidence that support our belief that contact with the natural environment is an efficient way of promoting aesthetic-environmental reflection and, consequently, of contributing to whole education. Based on the analysis of data on both categories, such evidence is described in the next items.

3.1 Virtual trails as a strategy for encouraging aesthetic-environmental reflection

According to Estévez (2012), contact with the natural environment is essential for whole education. The author states that pedagogical practices should be carried out in open spaces to enable direct approximation to natural beauty and trigger the development of cognitive and sensitive dimensions. He adds that contact with the natural environment potentializes the development of Aesthetic Education, considering that when we perceive the beauty of the natural environment, we develop our senses.

Due to the situation, i. e., the context of the COVID pandemic, contact with the natural environment took place in virtual trails and was significant to sensitize and mobilize students to reflect on socioenvironmental issues, as shown by the following excerpts: *“I believe that*

² The trails may be accessed at YouTube-Instituto Ecofuturo in the following link: <https://www.youtube.com/user/institutoecofuturo>.

experiences with trails are excellent strategies for thinking about socioenvironmental issues” (ESTFURG05); “Based on the trails, we may start a dialogue about environmental preservation, deforestation, animal extinction and other themes” (ESTPELO2); “Trails are an excellent way of discussing socioenvironmental issues since they enable us to locate and discuss these problems and make people understand them practically and clearly, stimulating them to learn more” (ESTCAVG50).

Thus, considering the imminence of an environmental collapse caused by climate and social emergencies, we believe that interpretive trails, even virtual ones, contribute to problematize socioenvironmental issues and to develop citizenship. Lima-Guimarães (2010) highlights that interpretive trails:

Not only stimulate perceptive and interpretive accuracy, but also enable connections among new exploratory environmental experiences, destabilization of old experiential knowledge and levels of previous information which often carry incongruences and distortions related to a mistaken comprehension of images of environmental realities and directly influence the development of participants’ ecological awareness and conditions of self-esteem and welfare [...]. (LIMA-GUIMARÃES, 2010, p. 11).

Therefore, we urge that school syllabuses should include interpretive trails because they are “extraordinary ways of teaching, mainly in investigative teaching, since they are not merely recreational but able to develop learning” (SOUSA, 2021, p. 58). The following excerpts confirm such statement:

“Educational institutions should provide experiences that influence people to reflect about them, the planet must be preserved because we are going through an environmental crisis but the society has not learned to respect it yet because it doesn’t have socioenvironmental knowledge. Or it ignores studies and evidence of the climate crisis because they just think about producing profit. [...] In my opinion, taking students to a place surrounded by green influences thoughts about preservation and valuation of life as we know it, before it is too late to reverse the situation”. (ESTPEL23).

“To implant trails in teaching projects may be a good way of showing students the importance of preserving nature and encouraging them to preserve and observe several species that exist in a small part in the forest and that each one is part of an important cycle in our ecosystem”. (ESTCAVG40).

The proposal of innovative pedagogical practices, such as virtual trails, promotes the development of sensitivity, creativity and human aesthetic perception, which are assumptions of Aesthetic-Environmental Education (ESTÉVEZ, 2011) and tools to face socioenvironmental conflicts since they raise awareness of the importance of taking care of ourselves and of everything that surrounds us.

“I believe that participating in trails, having contact with nature, observing everything that surrounds us, we may learn more and search for and find solutions to socioenvironmental problems, besides really instigating us to wish to preserve the environment”. (ESTPEL12).

In the light of the socioenvironmental crisis, when pedagogical practices are carried out in a natural environment, they must lead to collective thoughts and go beyond doing something for the sake of doing it. Thus, as a pedagogical proposal, virtual trails show the need we have to connect with ourselves and our surroundings in order to trigger reflection on our way of being

in this environment and, as a result, to break and/or open gaps in the model of exploration of natural resources that rules us these days.

In a student’s opinion, virtual trails “*may be a way of pedagogically teaching people how to preserve nature and its beauty, how not to pollute and how to take care of both flora and fauna*” (ESTCAVG24). Another student added that “*by means of trails, we may problematize and raise people’s awareness of impacts caused by lack of respect and of care for nature on the environment we live in*” (ESTFURG06). When people are sensitized by contact with the natural environment, such reports reinforce their understanding of the need to preserve the natural environment and incite them to reconsider and even change their attitudes.

The pedagogical strategy – virtual trails – collaborates with whole education because it enables participants to raise their comprehension of how their actions affect socioenvironmental issues. It means “to make individuals perceive that environmental issues cannot and must not be treated neutrally but must be solved by changes in the relation between the society and nature” (BUZATTO; KUHNNEN, 2020, p. 222).

Experiencing a virtual trail,

“[...] may also be a method of entering awareness and learning about the importance of preserving the environment and thinking about more sustainable development which ensures that future generations have access to resources we have today and that are essential for life”. (ESTCAVG25).

Therefore, we infer that experiencing interpretive trails is a pedagogical strategy which sensitizes and triggers actions that favor care for the environment and value it. Besides, this activity enabled participants to reflect on the natural environment, think about themselves, about others and about the world. Such findings encouraged us to write about the following category.

3.2 Connection with nature

We start from the assumption that decrease in the capacity for feeling results from our current way of life, in which we do not stop to observe, contemplate and reflect on ourselves and on our surroundings anymore (DUARTE JR, 2004; ESTÉVEZ, 2012). Thus, we believe that to promote pedagogical activities that aim at developing sensitivity by awakening human senses is fundamental to people’s whole education.

According to Brandão (2007, p. 145), to feel is related to “emerge from ourselves. To know is to feel that we emerge from ourselves. To learn is to know and to feel with the other, the others in our lives”. Everything we learn gets meaning through sensitivity.

Because our sensitivity gives sense to what we know and because of what we know enables us to give meaning to what we feel, we can learn and lead our lives by experiencing interactive situations with ourselves (self-reflection), with our others and with life. (BRANDÃO, 2007, p. 144).

Contact with the natural environment, such as the one that takes place when we experience a trail, awakens our senses, makes us feel and think about life as a whole, as shown by the following excerpts:

“I believe that trails may provide moments of socioenvironmental reflection because, when we discuss how the environment and human beings interconnect, we can think about everything that is happening to nature as the result of human actions and about everything that is happening to human beings as the result of their behavior in the environment, where they belong. It would be a discussion based on the natural environment seen and experienced in the trails and everything that might be better if human beings had correct and coherent attitudes instead of using those waters shown by the trails, those trees, those birds we listened to, those animals we did not find in the route... to reach economic and greedy goals to favor ‘growth’ of society”. (ESTFURG09).

According to Estévez (2012), nature is still an unexplored way of developing aesthetic education. Perception of the beauty of its sceneries potentializes the development of human senses. The following excerpt shows us how necessary it is to promote contact with the natural environment and that immersion into this environment is essential for interaction between human beings and other forms of life. *“Even though this ride may have seemed artificial, I noticed how far we are from what we belong to, how far we keep from moments that could mitigate this dichotomy imposed by present times” (ESTFURG03).*

When we propose interpretive trails – virtual and/or in-person ones – in educational settings, we enable people to experience moments in which they pay attention to themselves and to others – human and nonhuman beings – from an aesthetic perspective, as reported by participants in the study. In their opinions: *“The trails made us think more about the role humans play in nature, significant self-knowledge” (ESTCAVG17); “It is an excellent experience for students, it certainly changes students’ views of their connection with the environment” (ESTPEL31); and “When we experience trails, we create a stronger connection with the environment; when the connection is established, we can better understand what’s going on in that place and its importance” (ESTPEL34).*

Such reports corroborate Estévez’s thoughts (2015) about the importance of contact with the natural environment to broaden our perceptions of ourselves and of the world. The author states that the quality of relations we establish with human beings and with the world that surrounds us is associated with our capacity for feeling and with the development of our sensitivity. Thus, to encourage contact with the natural environment by means of virtual trails stimulates human senses and triggers processes of self-knowledge, strengthening of affective ties and the feeling of co-responsibility for the other forms of life.

“Trails make people connect with the natural environment, make you perceive that it is not only you and your routine, it helps people abandon anthropocentric thoughts and raise awareness of what may be happening to the natural environment and other species of living beings, mainly if this experience is shared”. (ESTCAVG49).

According to Rios (2010), when pedagogical activities focus on affectivity and sensitivity and are developed interdisciplinarily, they may contribute to face current educational challenges and demands, i. e., the search for whole education. *“Not only reason, but also imagination, feelings and senses are instruments of action in reality and development of knowledge and values” (RIOS, 2010, p. 61).*

Therefore, we advocate the belief that, when we experience an interpretive trail – virtual or in-person ones –, we encourage creativity, affectivity and emotion, potentialize

commitment to the educational process, encourage the search for conflict management processes and trigger individual and collective feelings, such as joy and freedom.

When we enter and experience a trail that puts us in direct contact with the natural environment, we feel peace and tranquility and awake the sense of belonging and commitment to preservation and conservation of the place, as shown by the following excerpt:

“This contact with the trails may improve this abusive relation between us, human beings, and nature, where we live and suck its natural resources; they are ours and should be taken care of so that the next generations also have the opportunity to know them”. (ESTCAVG33).

“To take part in this experience awakens unique feelings and consequently the wish to know and to be closer to it. When we experience a trail, we are observers and exercise the respect which we must show to both fauna and flora”. (ESTPEL37).

Neiman and Mendonça (2020) point out that to be in a natural environment and to get involved in it, deeply and affectively, is a way of evolving, of becoming better, since “we nearly always feel good, we perceive that something changes” (NEIMAN; MENDONÇA, 2020, p. 99). Evidence of such thoughts is found in the following excerpt:

“A trail goes much beyond walking in the middle of the woods; to feel the trail, the fauna, the flora, is what changes it, to pay attention to details which a normal eye cannot see and a normal ear cannot hear. I think that trails could change people’s minds much and value what matters”. (ESTCAVG 5).

To experience a trail in the natural environment in a safe and planned way incites our bodies to new sensations and emotions and favors the development of the capacity for feeling, perceiving and reflecting on the environment where we live. Montiel *et al.* (2022, p. 134) highlight that “contact with the natural environment not only stimulates human feelings but also contributes to the development of aesthetic perception and human sensitivity and broadens the possibility of constructing a harmonious, respectful and balanced way of life”. According to a student, “*contact with nature tends to awaken people’s sensations of tranquility and welfare, thus, trails collaborate pedagogically because they enable real and fun insertion of human beings into natural spaces*” (ESTPEL21).

We believe that the activity agrees with the sense of education for liberation, as proposed by Freire and Guimarães (2011) when they refer to the need for pedagogical processes developed by “pedagogy that would mainly emphasize beauty, aesthetics of life and ethics. Pedagogy that would not separate cognitive from artistic [...] from affective, from sentimental, from passionate, from wish!” (FREIRE; GUIMARÃES, 2011, p. 38).

Thus, findings of our study show the potentiality of the pedagogical proposal which was developed to encourage aesthetic-environmental reflection. When we enabled contact with the natural environment, even though remotely, we contributed to awaken human senses and sharpen the wish and effort to preserve the natural environment and constitute a way of reaching global happiness.

4 FINAL REMARKS

Having kept Russo’s words in mind – “what will you be when you grow up?” – we wrote this text about the need for whole education that broadens our ways so that we can be what we want to be while being sensitive, affectionate, aware and committed to maintenance of life on the planet. We introduced learning experiences that resulted from a pedagogical proposal which aimed at that education, i. e., virtual trails.

We know that virtual trails do not replace in-person ones and that to experience a virtual journey has limitations, such as lack of stimuli of some human senses, mainly touch and smell, and the need for electronic resources. However, results of this study have shown the potentiality of the proposed activity since it develops human sensitivity, creativity, aesthetic perception and criticality.

We believe that to experience virtual trails is an innovative pedagogical activity since it makes students think about themselves, about relations they build with the world and about their responsibility for lives of all beings. Since virtual trails trigger aesthetic-environmental reflection, they contribute to the process of humanization and to social transformation. Consequently, they should be part of Basic and Higher Education.

By means of contact with the natural environment enabled by the pedagogical activity, we highlight that virtual trails incite us to feel that, paraphrasing Russo, we are waterdrops, we are sand grains, we are nature. Therefore, we reinforce that we should love all forms of life as if there were no tomorrow!

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