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Fruits of identity: environmental education in a rural school in Uruguay

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ABSTRACT

Fruits of identity was carried out at the beginning of 2021 in a rural school located east of Uruguayan territory. An interdisciplinary work of the identity concept was proposed to contribute to the transversal approach of the environmental education. Theoretically, didactic recommendations and curricular contents that are proposed by the official education program are analyzed. In the practical aspects, the protagonists were seventeen children from three to twelve years old, and their classroom teacher and guide. The main goal is to build knowledge around the identity concept from an environmental perspective. The methodology used stems from the creative thinking, is holistic and integral, and searches for dialogue and blending of diverse areas. At the end of this educational journey is concluded that identity is not static, it is an individual and a collective construction. The proposal of environmental education allowed the students to approach to environmental system continuous and recognize there traits of their own identity.

Keywords: Environmental education, Environmental identity; Interdisciplinary.

1. Introduction

The General Education Law No. 18,437, approved since 2009 throughout the Uruguayan territory (Senate and House of Representatives of the Eastern Republic of Uruguay, 2009), states in its Article 40 that Environmental Education (hereinafter EA) is a cross-cutting issue at all levels of education in the country. In

accordance with this legal provision, in 2014 the National Environmental Education Plan (hereinafter PlaNEA) emerged as a proposal of the National Environmental Education Network. The general objective of PlaNEA is to constitute a guiding framework for EE in Uruguay with scope to all levels of the educational system, governmental and non-governmental spheres and institutions of formal and non-formal EE that tends to

coherence, synergy and continuity as a whole in a medium and long term perspective. The General Environmental Protection Law No. 17283, passed in 2000, is also a legal precedent in the field of Environmental Education. Article 11 states that public entities must promote environmental education of the country's inhabitants through training, educational, informative and dissemination activities so that the community adopts conscious behaviors regarding environmental protection and sustainable development (Senate and House of Representatives of the Oriental Republic of Uruguay, 2000).

In society, EA is widely accepted and is perceived as a positive attitudinal orientation (Brailovsky, 2007), but in Uruguay it continues to face difficulties in its insertion into the formal education system. However, for more than a decade now, teachers have been wondering how to mainstream EA in schools and how to generate environmental education processes from primary school onwards. The answers to these questions are not to be found in current legislation or in the school curriculum. We teachers must face this difficulty in a self-taught way, like most environmental educators in Uruguay (Red Nacional de Educación Ambiental para el Desarrollo Sustentable, PlaNEA, 2014).

In accordance with this situation, it has been detected through surveys to seventy advanced teacher training students, great difficulty in conceiving the environment from a

systemic, complex and multidimensional perspective; most of them define the environment in dissociation with the human species, including a great part of those surveyed show understanding that EA can be approached in a disciplinary way, placing special emphasis on Ecology, ignoring the treatment that EA requires. Thus, there is a clear tension between the lack of training in this field of knowledge and the cross-cutting nature that the current Education Law grants to it. It is important to assume the need to build a specific didactic field for EA in which the various disciplines merge. If we want AE to be something more than a normative discourse, we will have to work more on psychoeducational and didactic aspects (García, 2004).

This work is positioned from the socio-critical current, insisting on the analysis of the social dynamics that form the basis of environmental realities and problems. It consists of an environmental pedagogy that aims at transdisciplinary work through which the development of a knowledge-action to think about local problems is sought, with due contextualization of the issues addressed (Sauvé, 2005). Simultaneously, this work also adheres to the cognitive-humanist approach, emphasizing the human dimension of the environment and the link between nature and culture. This approach to EA is cognitive, but beyond the rigor of observation, analysis and synthesis, this current also consists of the sensory, affective sensitivity and creativity. AD

is conceived in a processual way:

It is a permanent process that must attend to the formation of critical, creative subjects, respectful of human and environmental rights, who value the existence of different modalities of knowledge and interpretation of the world. It seeks the formation of social subjects, with an environmental ethic that is in solidarity with all manifestations of life, assuming a commitment to socio-environmental transformation. (Achkar et al., 2005, p. 9).

Educators are invited to think of the environment from a systemic perspective but also to feel the environment as a continuum of natural, modified natural and artificial elements that constitute the environment that surrounds us and in which we live (Reboratti, 2011). Recently, in the same direction, Danowski and Viveiros de Castro (2019) point out:

The relationship between humanity and world begins to be able to be thought as a relationship that unites the unique side of the Moebius strip with itself (...) where the inseparability of thought and being, of the animate and the non-animate, of culture and nature, is a complete and real uniqueness. "Humanity and world are on the same side (...) if one starts the journey from humanity (from thought, culture, language, "the inside") one necessarily reaches the world (being, matter, nature, "the great outside") without crossing any border and vice versa." (p. 203).

Disciplinarity, interdisciplinarity and transdisciplinarity can also be conceived as a

continuum from coordination to fusion (Pombo, 2013). This ethical positioning supposes considering human interest as a configurator of the environment "(...) human activity is part of nature, which implies a differential relationship by sectors, classes, nations, etc., with responsibilities and interests that are sometimes opposed, and with a historical determination" (Foladori, 2011:89). (Foladori, 2011:89). The environment is no longer understood from the domain of nature but from its production; it collaborates in the transformation of the dominant vision of capitalism by a conception of dialectical integrality between nature and society (Montañez, 2009).

In the space of time in which I have dedicated myself to being an elementary school teacher, I have sought to approach EA in a transversal way from a socio-critical and sensitive position in the southeastern region of the country. Building EA with special attention to its didactic approach. All this effort allows to evidence action guidelines and possible paths in the great uncertainty that brings with it the transversalization of EA in Uruguay. These works have been used as didactic resources, catalysts of new environmental practices in the teaching context and were published by educational magazines of reference among teachers in the country. All these environmental practices summarize the persistent insistence on providing more certainty regarding the didactic approach to EA in elementary school. Briefly, we will point out part of the journey carried out

together with great colleagues: *Los pastizales en el Batllismo. Towards an environmental approach to the curriculum in 2017*; *What Environmental Education do we want?* in 2018; *The soundscape. An invitation to empathize with the environment in 2019*; *(Re)valorizando al maíz criollo in 2019*. A didactic-environmental approach to the weather in 2020. All these environmental and interdisciplinary practices summarize the persistent insistence on making contributions and developing a constructivist didactics of EA at school. As García (2004) states: "For the constructivist, knowledge is relative and in continuous evolution, being very relevant the processes of shared construction of knowledge, negotiation of meanings, elaboration of a common discourse and, therefore, social interaction and the learning environment" (p. 94).

In this opportunity we seek to present an environmental didactic experience developed in the year 2021 in the Primary School N°86, a rural public institution located in the Sierras de Rocha in the east of Uruguay, in the department of Rocha. The school has a centennial history in the territory and is currently characterized by having a high and fluctuating school population; most of the families are families of urban origin who decide to live in rural areas. They thus describe a flow that goes against the depopulation of the countryside, as evidenced by national statistics. In addition, many families are foreigners and travelers. At the

time of this experience, we worked with Uruguayan, Costa Rican, Argentinean and Spanish children.

Seventeen students lived together in a single large classroom, forming a diverse teaching and learning community. The *Frutos de la identidad* proposal was developed contemplating the multigrade dynamics, the age range contemplated from three to twelve years old. In Uruguay, this implies an education from kindergarten through primary school. The school's budgetary modality assumes a single teacher in charge of all the teaching work. Multigrade didactics and single-teacher teaching fostered interdisciplinary and cooperative work, which is key to the construction of EA (Rugracía, 1997).

As the title announces, the concept of environmental identity was structuring. Environmental identity as an emerging self that is situated in a determined space-time (Varela, 1996); characterized by the construction of meanings and arguments (Plantín, 2014). We seek to reflect on our identity in the Sierras de Rocha from the fruits present in the environment, in food, in our daily and school life. The development of this article is manifested in a first theoretical part, inquiring about the traditional school approach to the concept of identity, compiles and analyzes the didactic recommendations proposed in the official primary school curriculum in terms of the approach to this category and its presence in the contents to be taught according to each

area of knowledge. This is followed by a second section which includes a narrative on the set of environmental practices carried out; the educational purposes, the contents addressed, the description of the activities and the didactic resources used. This description is accompanied by an analysis of the Frutos de la Identidad (Fruits of Identity) proposal in relation to the contributions made by the children during the didactic journey and the harvests offered by the process; finally, a brief reflection is included in relation to the current program and the opening to the transversal approach of EA in elementary school.

2. Development

2.1. From where to approach identity?

Identity is a concept that traditionally in Uruguayan schools is linked to the teaching of social sciences; this coincides in the school program with the high presence that this conceptual category has in the curriculum; in the current school program, Social Sciences call for the teaching of Geography, History and Construction of Citizenship. In the didactic foundation that heads this official document, the concept of identity is highlighted on several occasions. In the area of artistic knowledge, identity is specifically presented in the section dedicated to visual arts, as well as in the section corresponding to corporal expression. In the rationale for this area, in 2008, the General Directorate of Initial and Primary Education

points out:

We live in a society filtered by aesthetic references of all kinds that are present in our processes of socialization, identity construction and elaboration of ideas that we are building about the world and about ourselves (...) To signify is to express through a work (visual, musical, scenic, literary) the freedom, desire, passion of a creator and in turn the identity of the human group of which it is a part. (DGEIP, 2008:70).

In the area of language knowledge, the document explains that:

It is the teacher's task to know the linguistic identities and the communication situations in which their students participate in their family and social environment as well as that language constitutes a fundamental component in the construction of the identity of speakers (p. 50).

Finally, in the area of social knowledge, he defines identity as a process tending to self-knowledge and knowledge of and respect for others. And reference is made to this category when it is made explicit that diversity is manifested in the identity of social groups and also when establishing guidelines to address sex education at school by pointing out the importance of working on gender identity (DGEIP, 2008). Likewise, the discipline that gathers more presence of the category under study is History.

The teaching of history contributes to the construction of identity, taking into account the

collective history of a community, without forgetting any of the times or the contributions that have forged its construction" "The understanding of the present and the past implies the recognition of the cultural variety that shapes the identity of peoples. (p.105).

The concept of identity appears—with greater and/or lesser presence—in the didactic foundations of each of the areas mentioned. It can be clearly seen that most of the time the term is included within the social disciplines and the second place is shared, with a much lower percentage, by the area of language knowledge and the area of artistic knowledge.

With regard to the contents proposed to be taught, most of the identity contents are also found in the area of knowledge of social sciences; there are contents in the area of artistic knowledge and it is striking that there is no content of this nature in the area of knowledge of language when it was mentioned in its didactic foundation. It is important to point out that in the area of knowledge of natural sciences there is no presence of the concept of identity either in its didactic foundation or in the set of contents proposed to be taught for these disciplines. The same situation is found in the area of mathematical knowledge.

Identity turns out to be a common denominator among some areas of knowledge and yet it does not summon the natural sciences, why? Is it possible to approach identity from an environmental perspective? integral? Couldn't

identity act as a central axis of environmental educational processes capable of contributing to the mainstreaming of EA at school? The following is a description of a processual pedagogical experience in which an attempt was made, through practice, to approach environmental identity.

2.2. Description and analysis of the proposal

The general objective of this work was to contribute to the pedagogical construction of an environmental identity within the framework of the current curricular program for primary education in Uruguay. The contents addressed involved several areas of knowledge; from the natural sciences, Chemistry dealt with the different states of matter, and from Biology with the identification and differentiation between exotic and native flora. As expected, the social sciences were involved, as well as history, addressing the Latin American identity and the vision of the Rio de la Plata region during the 19th century. As far as mathematics is concerned, we work on the measurement of a given magnitude, sensory estimation, and the use of measuring instruments. We also address, especially with the youngest children, different classification criteria according to different variables. And from Geometry we work on symmetry with respect to a straight line. From the area of language knowledge, we approach the reading of descriptive texts, differentiating them from narrative and poetic texts. Last but not least, the area of artistic knowledge; from Literature, the nativist current is approached

through the verses of rioplatense and local poets and from a ludic structure, riddles in verses; from visual arts, the national art represented by Pedro Figari and the Latin American composition by Roberto Fontanarrosa were worked on.

The beginning of this experience is based on a triggering question: What fruit identifies you? The majority of the students comply with the slogan by identifying themselves with native fruits. The three most frequently mentioned species are the Pitanga (*Eugenia uniflora*), the Butia (*Butia capitata*) and the Guayabo del país (*Acca sellowiana*). It turns out that the native species are perceived as a symbol of identity, the children demonstrate a very deep prior knowledge about these species, they make drawings, know their aromas, are able to identify them in nature and even provide medicinal uses that can be made with them. Games are proposed with the common and scientific names, and the Guaraní language is explored to find out how else these fruits can be named. Once the information has been systematized, we return to the question, now instead of answering individually, we go out to the schoolyard and collectively look for fruits that identify us. We made riddles and ended the day harvesting two fruits: quinces (*Cydonia oblonga*) and watermelon (*Citrullus lanatus*).

The Quince

We inquired about its origin, is it a native fruit? does it identify us? Several children agree and argue their position, stating that they have

seen many quince trees near the school, in the area of the sierras. Besides, the Martín Fierro is considered a creole dessert in our country, also in Argentina, and it is prepared with quince and cheese. José Hernández with his lyrics and Roberto Fontanarrosa with his illustrations help them to understand more about their Río Platense identity. We watch the 2007 film *Martín Fierro* directed by Romero and Ruiz.

We discover that the origin of the quince is Asian but that it is very present in our environment nowadays. We work on axial symmetry based on the work *Dulce de membrillo* (Figure 1) by the renowned Uruguayan painter and educator Pedro Figari; representative of our national identity and cultural artistic heritage.



Figure 1. 1.a Frutos de membrillo; 1.b Dessert consisting of a slice of dulce de membrillo together with a slice of cheese, known in Uruguay and Argentina as Martín Fierro. 1.c "Dulce de membrillo" (Uruguay, 1927) oil painting by the artist Pedro Figari; 1.d Photograph of the moment when the dulce de membrillo was cooked at the school.

Together with the school cook, they work with the recipe for quince jelly (descriptive text); they process the fruit with special attention to the different states through which the fruit passes from the tree to the table (solid - liquid - gaseous). The youngest children make impressions of quince with paint and classify the quinces according to their size: small, medium and large; peeled and shelled; raw and cooked. They all work on the elaboration of the candy and together they cook pasta frola that is shared with the rest of the educational community.

Watermelon

Simultaneously, the watermelon is harvested, this is possible thanks to the work in the school garden done by the children the previous year, the effort brought its fruits, in fact, it presents a large size, the emerging question was how much does the watermelon weigh? And the challenge begins: estimates are made, data are recorded in a table, and different criteria are established to order them. Pre-school level makes observations of the harvested fruit, their visual attributes are written together, and drawings of the observation are made. Primary level, they record the summarized characteristics in their notebooks and it is proposed that they represent them by working on fine motor skills. A sewing workshop is developed where they make key chains that summarize the characteristics of the fruit; the aim is to break with gender stereotypes associated with daily

tasks (Figure 2).



Figure 2. 2.a and 2.b Primary school children making their key chains in the sewing workshop; 2.c Children in kindergarten 3, 4 and 5 observing and illustrating the harvested watermelon. On the blackboard the list of weights that each child was encouraged to estimate.

They inquire about which measuring instrument is needed to solve the question "How much does the watermelon weigh? They conclude that they need to use a scale.

They mass the fruit and analyze which estimates were closest and which were farthest off. They look at different types of scales—pan scales, digital hanging scales, Roberval, kitchen scales—(Figure 3). Then the history of the balance is investigated, and it is discovered that its origin is the same as that of the watermelon, both come from Egypt. This country is located in the African continent and the students in the higher grades analyze tables and study which are the major watermelon exporting countries

in the world.



Figure 3. 3.a and 3.b Photograph of the children chewing the watermelon using a digital hanging scale and a kitchen scale.

Finally, on a warm afternoon the watermelon is cut up and shared for eating (Figure 4). As this happens it is noted that watermelon is a fruit that is eaten a lot in the summer season, that everyone likes it but that it is not a native fruit. This reflection arises there from them, from their exchange sitting at the door of their school while eating the harvested watermelon.



Figure 4. Photograph of the primary school children sharing the harvested watermelon.

Identity is not static, it is a noun that is constructed and nourished, in this case by different fruits that are present in our patio, on our dining table and in our house. Daily life in

the sierras is made up of a continuous relationship with different species, some of them native, typical of the mountain range, and many others exotic. Their knowledge, care and conservation opens the way to the possibility of identifying oneself from the singularity belonging to a collective identity, to a biological but also cultural community. The didactic experience comes to an end with the appearance of the first volume of *Pitanga la Revista de la Escuela* 86. It identifies us and in times of pandemic, it is useful for children who do not have connectivity in the area to have access to the educational material proposed by the school (Figure 5).



Figure 5. Primary school boys and girls make the page layout of the school magazine they have just finished printing.

The rioplatense perspective allowed us to recognize that the cultures of Uruguay and Argentina were closer in historical processes. However, this perspective also places in the center the capitals of both countries: Buenos Aires and Montevideo, being these two perspectives a little foreign to the context of Rocha. However, the spatial scale of the

approach is relevant because most of the children knew both cities and even other world capitals.

The name given to the magazine is a result in itself: it was born from a consensus among students who, when we approached the Pitanga (*Eugenia uniflora*) in the schoolyard, spent time observing the species in nature, we exchanged about its names: scientific and common. We wondered if this species was found in the other countries where they were from. Is there Pitanga in Costa Rica? Is there Pitanga in Spain? It turned out that Pitanga is a myrtacea native to Uruguay and Argentina, an exotic species but present in Costa Rica and Spain, especially for ornamental use. Finally they were convinced that this was the best name, a species with presence in their native countries. It is important to point out that this talk and subsequent consensus was held under a *Butia* palm tree (*Butia capitata*) at the entrance of the school while they ate its fruits.

Another noteworthy result of this work is that, in addition to recognizing plant species in nature, primary school children now add whether they are exotic or native species, i.e., they use the classification studied, as well as they problematize their origin with specificity and develop searches in reliable sources. There is also a child in the fourth grade who also identifies the species of plants and trees in nature. He is the only one in the initial level and is also a consequence of this didactic pedagogical approach.

It is considered that a possible projection for this work could be to focus—after this collective proposal—on the more individual level of the subject with respect to his identity. Working with mirrors, observing his face, recognizing his features, representing emotions through his face and making self-portraits. Thus including artistic expression from a more productive level to express themselves. Complementarily, in primary school they can work with the ID card, ID card and/or passport as identity documents, approaching the different scales, studying the numbering of these documents, encouraging reflection on what it means to have a document of these characteristics, thus approaching the concept of national, regional and global citizenship.

3. Final reflections

The constructivist model made it possible to approach identity from a creative and different perspective. At the primary level, it is a content that, as previously mentioned, is usually taught only from the Social Sciences. In this opportunity, Chemistry was linked to Visual Arts, manual work and daily life, Mathematics, Language, Poetry, Biology, History and Geography. The constructivist environmental didactic approach allows us to cross illusory frontiers present in thought, but non-existent in reality. In some way, childhood corresponds to this integrality. Bringing the complex reality closer to the school, to the classrooms; promoting EA from a critical, integral, sensitive perspective, in the search for

a transdisciplinary approach allows to approach the relationship between society and nature, promoting the construction of an environmental identity. "The boundaries between disciplines remain because it is not a matter of suppressing them but of empowering them through dialogue, collaboration for the emergence of new horizons." (Medina, 2006:98). Approaching identity from an environmental perspective from the complex and systematic uniqueness represented before with the Moebius strip.

With Fruits of Identity we sought to think, but also to feel contents from each area of knowledge with special attention to the environmental perspective; to transform information into knowledge and in the construction of skills regarding some identity fruits present in the daily environment. Introducing exotic species, recognizing their historical presence in the territory, locating their origin, their presence or absence at present, their link with other species, including humans—with their culture, their economy, their food—turned out to be a good possibility to work on EA in a childhood that was quite familiar with the native species present in their environment.

It is thus intended that this work can show one more form of transversality in EA in a rural elementary school. It is not intended to be a recipe, but an invitation to review the programs that delimit our work in the search for structuring concepts—such as identity in this case—that motivate the environmental

approach in elementary school. The intention is to make a contribution that helps to answer how to transversalize EA. It is understood that Time is an example of another of these great enabling concepts to build transversal EA. How many of these inclusive concepts are there in the current Program? Conceptual networks help in this task. From which areas are these contents usually approached? How many allow an environmental approach?

We are invited to reflect and propose other concepts, other contents and/or themes that generously collaborate with a significant EA in the school; work that tends to transdiscipline capable of building a social, integral, sensitive and contextualized critical thinking regarding the environment that it configures; contributing to the construction of an environmental citizenship (Barcia, 2013). Identity turned out to be a fertile germinator for the presence of art in the didactic path and this contributes to value, from the environmental, the diverse not only from the biological but also from the cultural. The fusion between disciplines and the artistic interdisciplinary approach are considered key aspects in the construction of a specific field of AE didactics.

We hope to discuss these ideas with other educators concerned about the development of EA at school, focusing on teacher training, with the need for an in-depth re-reading of school programs, in the search for environmental clues that allow us to develop transversal didactic approaches, respectful of the integrality of

childhood and that contribute to the construction of a socio-critical and sensitive environmental thinking. On this occasion, identity proved to be a fertile germinator for this purpose.

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