CHALLENGES AND IMPORTANCE OF ENVIRONMENTAL EDUCATION IN THE EDUCATION SYSTEM IN PORTUGAL

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CHALLENGES AND IMPORTANCE OF ENVIRONMENTAL EDUCATION IN THE EDUCATION SYSTEM IN PORTUGAL

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Abstract: The present work aims to analyze themes that address the importance of Environmental Education, in schools, today, facing the problems of the contemporary world. There is a consensus around the importance of Environmental Education in the school community, which requires environmental training for citizens and also training that better trains professionals linked to education. Sometimes the current model of Environmental Education seems to be deficient and does not satisfy the current training needs, either due to the lack of qualified teachers and the ability to articulate the set of knowledge, attitudes and environmental sensitivity in the existing disciplines. This article seeks to discuss the challenges of Environmental Education as a transversal theme in Portuguese reality.

Keywords: Environmental Education; School; Importance; Teacher Education; Gaps.

Resumo: O presente trabalho tem como objetivo analisar temas que abordem a importância da Educação Ambiental, nas escolas, hoje, diante dos problemas do mundo contemporâneo. Há um consenso em torno da importância da Educação Ambiental na comunidade escolar, que requer uma formação ambiental para os cidadãos e também uma formação que melhor capacite os profissionais vinculados à educação. Por vezes, o modelo atual de Educação Ambiental parece ser deficiente e não satisfaz as atuais necessidades de formação, seja pela falta de professores qualificados e pela capacidade de articular o conjunto de conhecimentos, atitudes e sensibilidade ambiental nas disciplinas existentes. Este artigo procura discutir os desafios da Educação Ambiental como tema transversal na realidade portuguesa.

Palavras-Chave: Educação Ambiental; Escola, Importância; Formação de Professores; Lacunas.

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Introduction

The unbridled exploitation of natural resources that started with the agricultural revolution and then, on a larger scale, with the Industrial Revolution, as well as the development model that capitalist society has been manifesting, led Humanity to the “ecological crisis” with that we face today.

Currently facing several and serious environmental catastrophes, which are becoming stronger and more frequent, of a more unstable climate, among many other changing environmental aspects, the world seems to be finally waking up and realizing that we have no more time to lose. In the face of situations that seem to have no turning back, it is more urgent than ever to take urgent and global measures, starting by acting and taking actions that benefit everyone, universally. One of the ways to minimize the effects of this crisis is, without a doubt, Environmental Education. According to UNESCO (2005, p. 44), "Environmental education emphasizes the relationship between men and the natural environment, the ways to conserve it, preserve it and manage its resources properly".

Currently, it is recognized that the factors of the environmental crisis are closely related to a cultural crisis of standards of values that govern the behavior of Man in relation to the environment. In this context, it is considered urgent to reorganize the curriculum in order to awaken a conscience of citizenship that actively guides itself towards the preservation of the future of Humanity. In this sense, we intend, with this article, to defend the idea that Environmental Education is essential in the training of teachers and students for a better environmental literacy of a community and must be rooted in the education system, despite being a transversal area it can also be very well also a discipline.

Environmental Education in Schools

In Portugal, the publication of the Basic Law of the Educational System, in 1986, recognizes environmental education in the training objectives of students, a comprehensive definition at all levels of education. However, only with the last reorganization of the Science curricula, in 2001, a theme entirely directed towards the environmental issue called “Sustainability on Earth” emerged in the 3rd cycle of Basic Education (GALVÃO, 2001).

Sustainable Development is essential to develop an environmental education in schools that provides students with the tools necessary to make rational and coherent decisions in relation to different environmental issues. The school, as a space for socialization, must contribute to the formation of citizens who are aware and concerned about the environment and its problems. According to Mayer (1998), it is important that young people are aware of current problems and the discussions that are generated in society, that they have the opportunity to explore arguments, choose the most relevant ones, offer alternatives and make their own decisions. Thus, education should be

directed towards problem solving, in an interdisciplinary educational perspective, integrated into the community and with a permanent character facing the future.

The school must prepare young people to insert themselves in a creative, critical and intervening way in an increasingly complex society, in which the flexibility of reasoning, perseverance, the ability to adapt to new situations, to interact and cooperate are fundamental qualities. Education should contribute to a correct perception of the state of the world and prepare citizens for decision making, as well as allowing them to develop environmental awareness and adopt attitudes and values that promote Sustainable Development (VENTURA, 2007).

It is necessary to understand the environment, the dynamic relationship between ecosystems and social systems, being concerned with the sustainable management of natural resources, the fate of future generations and the survival of species.

From the above, it is understood that this is one of the areas of extreme importance today, not only for educators, but for all those who play an important role in education for citizenship. Schimdt *et al.* (2010) refers that with the approval of the Basic Law of the Educational System (LBSE) in 1986, all curricular reforms and adaptations started a continuous process of changes. With regard to Environmental Education, educational concerns focus on thematic information and its objectives aimed at knowledge of educational issues and problems.

EA and its policy take a new perspective, when in 2001 there is a new curricular reorganization in Basic Education and Secondary Education (Decree-Law No. 6/2001), where three new curricular areas are institutionalized in Basic Education disciplines, the Project Area, Accompanied Study and Civic Education. That same year, Decree-Law no. 7/2001 was published, which establishes a new reorganization of Secondary Education in terms of its curriculum, determining the creation of the Project Area in general courses. This restructuring, which allows flexibility in curriculum management, has given schools a new autonomy and aims to put Environmental Education back on the shoulders of teachers (SCHMIDT *et al*., 2010).

According to Schmidt et al., (2010), the educational restructuring that started in 2001 and that gives schools greater curricular autonomy, namely with regard to the Project Area, allows the EE (Enviromental Education) to become to develop “in a more dispersed way and more dependent on the initiatives and resources present at each moment in the schools or that they manage to mobilize”. To highlight programs of pedagogical projects of Environmental Education / Education for Sustainable Development allows students to develop their environmental awareness, as well as to exercise their critical spirit, creativity and capacity of organizations necessary to fulfill the objectives of an environmental education. The projects must also promote the active participation of students and make real assumptions. Fernandes (2008) also

stresses that Environmental Education projects, once centered on students, must start from their representations of the environment, creating situations of personal learning and socialization. In this way, the carrying out of Environmental Education projects should favor “the development of dynamic qualities, such as initiative, autonomy, responsibility and creativity based on students' experiences” in partnership with entities outside the school, promoting and supporting them and contributing for a “better understanding of the environment by students and their citizenship action” (Fernandes, 2008). In order to characterize the dynamics of AE in Portugal, Schmidt et al. (2010) applied surveys to different organizations promoting

Environmental Literacy

Being literate scientifically means knowing how to read the language in which nature is written. It is a scientific illiterate person who is unable to read the universe. It is advisable to emphasize that this must be a very significant and rooted concern in the education system (CHASSOT, 2003).

Environmental literacy has been the primary objective of environmental education for some time, in addition to being an essential prerequisite for insuring and improving environmental quality (DISINGER; ROTH, 1992). Disinger and Roth (1992), argue that environmental literacy would be fundamentally the capacity to understand and interpret the relative balance of environmental systems and to take appropriate actions to maintain, restore or improve the health of those systems. Currently, it is common understanding that environmental literacy must encompass knowledge and understanding of environmental concepts, problems and issues, affective and cognitive dispositions, (HOLLWEG *et. al*., 2011). As a simplified definition, environmental literacy can be understood as the possession of four interrelated components: knowledge, dispositions, competences, and environmentally friendly behaviors (HUNGERFORD; VOLK, 1990; HOLLWEG *et. al*., 2011).

The training given by schools, until the end of compulsory schooling, should be intended to be used in everyday life, not intending to prepare all citizens for scientific and technical careers. There is a wide variety of experiences and knowledge that can be approached in a different way, but equally valid, providing citizens with scientific knowledge useful in their daily lives. The school is a privileged place to approach environmental problems, data that can and should be provided to students with diverse and meaningful activities that allow them to act as catalysts for conceptual changes in relation to the local and global environment. Consequently, there is also a need to adopt new teaching perspectives, which go beyond the simple acquisition of content and provide students with the mastery of skills such as problem solving and critical thinking, and for some time the massive transmission of content was what mattered. One of the teacher's efficiency indexes - or of a content transmitter - was the number of pages passed on to students. It was necessary for students to become familiar with the term knowing by heart with theories,

concepts and scientific processes. From the botanical classifications, zoological families whose names roam only in the students' memories as unburied corpses, how many electronic configurations of chemical elements, how many physics formulas decorated until the day of an exam and then forgotten. Today, it is no longer possible to design proposals for science education without including in the curricula components that are oriented towards the search for social and personal aspects of students (CHASSOT, 2003).

The interests of students are very much conditioned by their experiences. Therefore, it is imperative that schools, local authorities, teachers, have the ability to decide what to teach, have the freedom to pay special attention to the students' interests (OSBORNE; COLLINS, 2001) and are therefore not restricted to the themes / contents that can be evaluated in international tests. The interventions carried out in the curricula to ensure scientific literacy for all, by defining mandatory content, deprive teachers of the freedom to select relevant content at the local level, or the most suitable for the group in charge. Teachers become technicians, losing control of their teaching activity and, consequently, gratification, in the exercise of their functions. They structure their classes and the contents taught accordingly, not only with the end-of-year exams or the end of the cycle, but now also according to international assessments. (Vieira, 2007). Scientific literacy is linked to the way adults position themselves in relation to science. And, of course, what students learn today will condition their attitude in the future. However, there are very few who finish school with a knowledge of science such that it can be said that they are scientifically literate from the environmental point of view (VIEIRA, 2007).

The school must enable actions that allow access to scientific information, seeking to interact with spaces considered non-formal (museums, zoos, television programs, internet, living science centers), going beyond school and public libraries, although these are equally important. It must also develop pedagogical activities such as practical classes, field trips, science fairs, among others (LORENZETTI, 2001).

For teachers, it is up to them to develop strategies that allow the understanding of science as part of the students' reality, that is, to make the student realize that science is not a distant subject from their world and that they can understand and apply basic scientific concepts. in daily life, developing habits of a scientifically educated individual (LORENZETTI, 2001). For (FOUREZ, 2003), these are interesting strategies for teachers to try to reduce the distance between the world of scientists and popular culture, provide experiences with the practice of debates and develop skills to transpose one situation to another. Scientific disciplines are marked as the world's dominant and rational managers, which is at odds with the contextualized view of science. The author argues that the sciences need to consider more the differences in contexts related to social positions and the interconnected external aspects, as well as to overcome teaching that accumulates results.

Teachers will have to find a balance between the theoretical scientific content taught and the remaining questions, which must also be addressed. Currently, there is a great concern with scientific content, in a teaching supported by school manuals, sometimes the debates on current and motivating themes for students are not privileged. This attitude is perpetuated and reinforced by scheduling national examinations.

In other words, “teachers should be free to be able to organize, in the way they feel most comfortable, their science classes, around the largest possible number of education objectives, selecting the content they consider to make the most sense. There is nothing wrong with teachers who teach all the scientific content they want, as long as they have meaning, are important, and are taught in a way that students understand and appreciate them.

Education based on traditional methods inhibits the autonomy and creativity of students and teachers. “*If the traditional gives teachers the feeling that it is an important guide for curriculum development, then it is beneficial. But if an excessively limited environment is created, then the content and form must be rethought to become a vehicle that pursues the objectives of scientific literacy for all* ” (DeBOER, 2000, p. 599). Because students continue to arrive at higher education (including teacher training courses) with serious deficiencies, both at a conceptual, instrumental, and language level, even those who, in secondary school, had scientific training (RAMOS, 2001). In view of the difficulties experienced by the teachers on the ground, what should the role of the National Council for Continuing Education be? And, will not the teachers themselves have a part of the responsibility in the search for a training more adequate to the current needs? Considering that science is in constant progress and constant updates, wouldn't it be up to certain teaching professionals to update themselves too?

Challenges of transversality and interdisciplinarity in Environmental Education

In 1997, the Ministry of Education developed and suggested National Curriculum Parameters (PCN), in which, the Environment was considered a Cross-cutting Theme and, therefore, must be integrated at all levels of formal education, in a transversal relationship, so that soak up the entire educational practice and, at the same time, produce a global and broad view of the environmental issue, visualizing the physical and historical-social aspects, as well as the articulations between the local and planetary scale of these problems.

According to Brasil (1998), Transversal Themes are social issues and belong to disparate conventional areas. These are processes intensely experienced by society, being debated in different social spaces, in search of solutions and new alternatives and which give different positions, both in relation to intervention in the broader social sphere, as well as personal action.

They are urgent questions that question about human life, about the reality that is being built and that lead to macrosocial transformations and also personal attitudes, requiring, therefore, teaching and learning content related to these two dimensions.

There are several discussions about transversality and interdisciplinarity, however, the greatest difficulty for educators is in practicing them. The Environment theme is seen by some as a theme without its own space, so the need to be present in all disciplines, and by others, it is seen in an integrative way, and therefore, it must be part of all disciplines, or that is, to have a space in each of them.

The creation of a mandatory discipline in basic education, dedicated to environmental education, contradicts the understanding of the scientific community, which has repeatedly rejected this hypothesis. Affirming that the environmental theme requires an interdisciplinary approach, bringing together professionals from different areas of knowledge. The offer of a “discipline” in the curriculum of the final years of elementary school called “environmental education” would require what type of professional? With what basic training? What are the conceptual contents considered to belong to this “discipline” and which would be essential for an interpretation of contemporary socio-environmental problems? There is a Degree in Environmental Education in Portugal, where it prepares professionals who could be used. One could follow the example of Spanish secondary schools, in addition to maintaining the environmental theme as a transversal axis, environmental education was instituted as a discipline. This initiative represents an effort to ensure the presence of environmental education in both ways, which also expresses the existence of doubts about the effectiveness of its application through transversality and interdisciplinarity (GARCIA-GOMEZ, 2000).

In the context of professional training, it is necessary to distinguish the specificity of teacher training. The acquisition of an environmental conscience, through the EE allows the students to learn about the promotion of an environmental citizenship, either at the individual level or at the community level. Reasons such as environmental protection, recycling, contributions to a better world demonstrate the importance and relevance given by students to Environmental Education projects. The environmental awareness acquired by the students during the implementation of the projects in question and revealed by the analysis of the responses to the questionnaires, can be an awareness that can be considered momentary, and cannot be generalized for the following years. There is talk of momentary awareness, since it remains when the projects are carried out and for some time afterwards, but not maintained, unless there is a continuous promotion of these projects. This is because, with regard to the environment and its problems, if it is not continuously fed, it is something that fades away (DIAS, 2015).

In the questionnaires made by several investigations about the students' knowledge on a certain topic, they have to be analyzed with caution,

because in some cases there is an attempt to answer the desirable, that is, to meet what is considered to be the desirable point from a social point of view. In other words, the respondent can try, in a more or less conscious way, to adopt a more correct posture in relation to the problem of the subject in question, giving form to the so-called effect of social desirability. In other words, with the environmental crisis it became socially reprehensible not to separate waste and unnecessary energy expenditures at home. The truth is that we must approach these responses with caution, not falling into the naivety of a less experienced researcher, be led to believe that this is really the recurrent practice of respondents in their daily lives.

According to Schmidt et al., (2010) after a study that focused on AE in the country, there was a fragile performance due to the accumulation of several failures, such as the "… lack of training and specialization of teachers in this area, lack of professionalization of the educators of this educational activity, scarce and few effective organizational resources, deficient articulation and integration of the environment in the school curricula of the different levels of education and an absence of effective evaluation of the activities of EE ".

Teachers, educators, need to be aware, updated and have pedagogical skills from an environmental point of view, in order to transmit and decode expressions and meanings about the environment and ecology in their multiple determinations, to educate their students, and may contribute, and a lot, for building citizenship and improving the quality of life on the planet.

There is a gap between factual knowledge and the understanding of phenomena on environmental issues, which obviously interferes with the practical relevance of acquired knowledge. If students learn about the problem of solid waste, in the classroom, they discuss possible solutions, and then they go to the canteen where all the remains of food are thrown directly into the trash, they can be confused (BOERSCHIG, 1993).

Thus, this inattention to this ecological dimension, leads to the fact that transversality is often a relatively isolated experience, not contributing to the practice in real situations of the capacities it aims to promote. (RICKINSON, 2001). There is no body that supervises environmental programs in schools. What good is it for children at the carnival to wear "guardians of nature" if the material they impregnated in the construction of the costumes was bought in stationery, encouraging materialism and the consumption of paper and other materials?

As for the EE projects involving Schools according to Fernandes (2008), some students consider the actions and projects as something secondary due to not being part of the curricular areas. Although they find the experiences rewarding, they end up detecting deficiencies in the structuring and execution of activities. With regard to the analysis of school textbooks, in general it can be said that students begin to come into contact with the issues of increasing greenhouse effect, depletion of the ozone layer and depletion of natural resources, in the textbooks of 4. 1st year of the 1st Cycle, although it is

verified that in this cycle of schooling the manuals rarely explain these phenomena and most of the time they make scientific errors (ROQUE 2011). However, it is necessary to rethink teacher training in order to consolidate this need, which constitutes a decisive factor in people's critical and citizen education. In this light, it is worth mentioning that the qualification courses for teachers is a relevant alternative for them to have methodological mechanisms to achieve the population's environmental awareness.

Final Considerations

With the objective of developing awareness of the environment in human beings, as a place for future generations to exercise their citizenship, Environmental Education is present in the curricular contents.

Environmental Education is a process that requires new knowledge to understand increasingly complex social processes. Environmental Education encourages social actors to problematize and think about the environment, taking a critical view.

Working with the Environmental Education discipline is a great stimulus for any school. The school does not always have teachers, specialists in the field of Biology, Ecology, generally this work is done by teachers who seek in a timid way the knowledge in the area, hence the need for continuing teacher education. Schools generally work with formal activities, with generative themes predominantly such as waste treatment, protection of forests, degradation of green spaces, to make interdisciplinarity happen, but what is intended with Environmental Education at school is that it be a process of permanent learning, which values different forms of knowledge and constitutes citizens with local awareness and a vision of the planet, with activities far beyond formal ones. Transversality does not always work in particular cases, Environmental Education could be represented in two ways, whether transversal, either as a discipline, optional or not, given the contemporary environmental problems, it is urgent to root Environmental Education in education systems.

The current environmental problems of today requires that Environmental education is taught by competent professionals who already exist in the market, but are being ignored. Since there is a misunderstanding about interdisciplinarity and transversality, which result in an apparent low effectiveness of Environmental Education actions in school environments. In this sense, also education in higher education should not do without Environmental Education, as a specific discipline, when necessary for the training of teachers or other future professionals from engineering to social sciences.

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