

Environmental education in the context of the Romanian education reform

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Author note

The teaching and research activities carried out currently as a Lecturer Ph.D., on the major field of education sciences, materialized in teaching / evaluation educational actions (for the initial training of the future teachers), preparation of training materials (courses, guides, etc.), but also in designing and implementing research / development / training projects (especially sighting the continuous training, the primary and secondary education teachers' improvement), and in carrying out researches on topics directly related to certain issues of school education, and also in a scientific contribution materialized in a series of articles, studies published in famous national and international journals, are especially focused on the following *areas of interest*: *General Pedagogy, School Counselling, Curriculum Theory, Pedagogy of Extracurricular Activities, Classroom Management, Educational Communication, Educational Policies, Theory and Practice of Evaluation.*

Abstract:

Environmental education is not just a form of education, a tool for solving environmental problems or for managing natural resources. It is a process of an essential dimension in recognizing the environmental values and in defining the environmental concepts, aimed at improving the quality of life. This type of education aims at inducing, especially within the educational institutions, social dynamics of education (knowledge, skills, motivations, values), which to stimulate personal development, collaborative and critical approach, but also the assumption of responsibilities for the decisions taken for maintaining the environmental quality. Environmental education sets its sights on the formation and development of problem-solving capabilities triggered with the social-scale application of the industrial and post-industrial technologies, which have recorded many negative effects in the nature and in the human existence.

Among the directions envisaged in the Romanian education reform, the curricular reform is an essential segment, which is now a distinct theme in the sciences of education. The new approach to National Curriculum has generated a different type of curriculum culture characterized by inter and trans-disciplinary approach to school curriculum. An integrated approach to the curriculum, as an alternative or complementary method of the disciplinary curriculum, is a constant of the recent curricular policies. Environmental education's integration into school curriculum can be achieved by the following four steps of designing the training content: the infusional approach, the modular approach, the disciplinary approach, the trans-disciplinary approach. It is estimated that *environmental education* can not be integrated in a single area of knowledge, but for being a complex process requires the involvement of specialists and researchers from different fields, namely an interdisciplinary approach.

Key words: environmental education, Romanian education reform, the curricular reform, an integrated approach to the curriculum

Zusammenfassung:

Die umweltfreundliche Bildung ist nicht nur eine Art von Bildung, ein Instrument zur Lösung der Umweltprobleme oder der Verwaltung der natürlichen Ressourcen. Es ist ein Prozess von wesentlicher Dimension in Erkennung der Werte und Definierung der Konzepte betreffend die Umwelt und hat als Ziel die Verbesserung der Lebensqualität. Diese Art von Bildung verfolgt eine Induktion, ins Besondere in das Schulsystem, der sozialen Dynamik betreffend die Bildung (Kenntnisse, Fähigkeiten, Motivation, Werte) durch Stimulierung der persönlichen Bildung, den zusammenwirkenden und kritischen Ansatz, aber auch die Verantwortungsübernahme für die schon getroffenen Entscheidungen für Erhalt der Umwelt. Die umweltfreundliche Bildung verfolgt die Erfassung und Ausbildung der Fähigkeiten zur Problemlösung, ausgelöst durch Verwendung der industriellen und nachindustriellen Technologien auf sozialer Ebene, die zahlreiche negative Effekte im Bereich Natur und menschliches Dasein erzielt haben. Zwischen den betrachteten Wegen der rumänischen Bildungsreform, beträgt der Lehrplan ein zentrales Hauptsegment, der sich jetzt als eine distinktive Thematik in Bildungswissenschaft gründet. Die neue Vorgehensweise des Nationalen Lehrplans hat einen anderen Typ von Lehrplan generiert, charakterisiert durch interdisziplinäre und transdisziplinäre Vorgehensweise. Die integrierte Vorgehensweise des Lehrplans, als Alternative oder komplementäre Methode ist heutzutage eine Konstante der Bildungspolitik der letzten Jahrzehnte. Die Integrierung der umweltfreundlicher Bildung in den Lehrplan kann man durch folgende vier Projizierungen der Lehrinhalte erreichen: Infusionsschritt, Modulschritt, Fachschritt und trans-disziplinärer Schritt. Man geht davon aus, dass die umweltfreundliche Bildung in ein einziges Wissensareal nicht integriert werden kann, da es ein komplexer Prozess darstellt und benötigt die Verwicklung der Fachleute und Forscher aus verschiedenen Fachbereichen, nämlich eine Interdisziplinäre Untersuchung.

Schlagwörter: Umweltfreundliche Bildung, Reform des rumänischen Bildungswesens, Lehrplanreform; integrierter Ansatz der Inhalte.

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Priorities of the Romanian education reform

The evolution and development of society, of the contemporary world, depends on the way in which the educational system meets the socio-economic requirements, through their transformation into educational approaches, and the extent to which it produces competences and develops human resources, both from the perspective of professional formation and the perspective of the development of creative, self-formative abilities which will allow the integration and continuous adaptation of the labour force to the scientific and technological evolution.

The conditions of the contemporary society, characterized by fast development of science and technology which results in a strong dynamics of world social life, calls for the necessity of education for stability and desirable social change that should give an answer to the challenges of the 21st century, education which is founded on: the real democratization of education, ensuring equal opportunities to education for all children, creation of conditions for educating all citizens, achieving a high quality education at all levels, affirming and respecting the principles of lifelong learning at all ages and all forms of education; cultivating sensitivity towards human issues, growing respect for nature and for environment.

After 1990, there have been a lot of changes within the Romanian educational system, which concerned the transition from a centralist and authoritarian educational system to an adequate system of a democratic society which should match the European educational system. Therefore, reform priorities after 1990 in the pre-university system, have focused on the following dimensions: curricular reform (focusing on skills, abilities and skills, flexibility and individualization of school routes, adapting the educational offer to individual needs, compatibility of content with social and economic needs); creation / development of continuous education for adults; restoring links between schools - community, school - the economic environment; improving access and quality education for groups at risk; increasing participation in education; linking education system in Romania with the objectives and standards; the development of guidance and counselling; decentralization.

The compatibilization with the European structures and systems involves the following courses of action (Marga, 1999, p.10): converting reproductive education into creative education; improving infrastructure and widespread electronic communications; educational management oriented towards competitiveness and performance; creation of productive partnerships between the

educational institutions and the economic, administrative and cultural environment; reducing the amount of information of the education programs in the European curriculum and their compatibilization.

The democratization of the Romanian education system, the improvement of the quality of education, the valorisation of the social role of education, the development of Romanian cultural values, the promotion of Romanian cultural identity within the world culture, the formation of active, responsible citizens, contributing to the development of a democratic society, are priority objectives of the Romanian education policy and these have been highlighted after 1990, being convergent with the objectives of the European dimension.

The Undergraduate Education reform program has provided: modern forms of a new National Curriculum (1998) for primary and secondary schools, implemented since 1998-1999, to review the list of subjects and optional subjects, development of new curricula; restructuring education and training of teachers in terms of introducing new curriculum and new textbooks, based on a rigorous methodology; development of alternative textbooks for all subjects and all classes; improving the quality and objectivity of the assessment and examination system by establishing standards for assessing and linking knowledge assessment with professional standards.

According to the reform articles, compulsory education aims to build the child's personality, highlighting and linking the four dimensions of personality: expressive, communicative, action-experimental and civic.

The expressive dimension involves: the knowledge and use of mind and body, mediated by expressivity; the knowledge and application of cultural, national and universal information.

The communicative dimension involves: the ability to communicate own thoughts and feelings in a certain social context; the ability to directly communicate with his/her natural and social environment.

The action-experimental dimension involves: the ability to creatively integrate in the environment, developing certain skills; the ability to initiate experiences in any daily situation and to appreciate the individual and social experience as they understand it; the ability to develop action and decision making models specific to an active man in a dynamic world.

The civic dimension involves: the knowledge and application of a democratic society's rules and values ; the understanding of and the conformation to the fundamental human rights; the ability to initiate and to engage in social action; treating and maintaining a natural and social environment conducive to life; the ability to quickly adapt in a multicultural society.

Among the directions envisaged in the Romanian education reform, the curricular reform is an essential segment, which is now a distinct theme in the sciences of education. The Curricular reform program represents a coherent approach to the educational national policy, designed and developed in line with current European trends and practices.

The new approach to National Curriculum has generated a different type of curriculum culture characterized by: focusing the learning process on training skills, transformation of the teacher-centered school to a student-centered school by promoting student-centered interactive learning methods, cultivating students' creative skills and the creation of various learning situations (the teacher is responsible for the way he/she organizes the learning syllabus, the students' performance confirming or infirming the efficiency of the didactic strategies) inter and trans-disciplinary approach to school curriculum, approaching the curriculum in correlation with the school performance issues and evaluation of initial and continuous teachers training (M. Korca, 2000, p. 35).

Environmental education - a way of ensuring an integrated approach of the curriculum contents

Environmental education was defined in 1970 at the conference organized by the International Union for Nature Conservation in Nevada (USA), as: *"...the process by which values are recognized and concepts are clarified in order to develop skills and attitudes necessary to understand and appreciate the relations between human, the culture he is part of and the biophysical environment. Environmental education also includes the practice of deciding and the formulation of a proper code of conduct concerning the environmental quality"*.

The concept of environmental education is based on the following fundamental concepts: natural environment, environmental quality and degradation. Natural environment, as the fundamental concept underlying the ecology as a science is defined in the Environmental Protection Law no.137/1995, as being "the assembly of natural elements and conditions of the Earth: air, water, soil, subsoil, the landscape's characteristic aspects, all atmospheric layers, all organic and inorganic materials, and also the living beings, the interacting natural systems, including the items listed above, inclusively the material and spiritual values, the quality of life and the conditions that may affect human health and welfare".

The two terms, *environmental quality* (pointing its essential characteristics, in relation to the quality of natural conditions) and *environmental degradation* (defined as affecting the ecological balance and the quality of life, mainly due to anthropic pollution) interact, influencing each other.

During the development of the education system, environmental education has gone through several stages:

1. Conservative education: highlights the importance of intelligent use of natural resources and the need to prevent environmental degradation;
2. Progressive education: applies the “learn by doing” principle, leading to a curriculum reform that has holistically deepened the concept of learning;
3. Outdoor education: emphasizes the importance of the methods that encourage the use of natural space as an alternative to the classroom space.

Environmental education has three main approaches (Bucovală C., Cândea M., 2003). Education about the environment ensures the understanding of how natural systems work, of the impact of human activities on natural systems; it develops the investigative skills and the critical thinking; it underlies the formation of a cognitive support which to enable the participation in the environmental decision making. Education in the environment provides the learning practical experience through direct contact with the environmental components; it develops skills of data collection and field investigation, it stimulates the environmental concern. Education for the environment completes the education in and about the environment; it strengthens the sense of environmental responsibility, the motivation and the skills to participate in improving the environmental condition; it promotes the desire and the ability to address a lifestyle compatible with the sustainable development’s concepts; it gives teachers the opportunity to help students with the proper management of natural resources approaching thus components of the moral, aesthetic and political education.

Environmental education is not just a form of education, a tool for solving environmental problems or for managing natural resources. It is a process of an essential dimension in recognizing the environmental values and in defining the environmental concepts, aimed at improving the quality of life. This type of education aims at inducing, especially within the educational institutions, social dynamics of education (knowledge, skills, motivations, values), which to stimulate personal development, collaborative and critical approach, but also the assumption of responsibilities for the decisions taken for maintaining the environmental quality.

Environmental education sets its sights on the formation and development of problem-solving capabilities triggered with the social-scale application of the industrial and post-industrial technologies, which have recorded many negative effects in the nature and in the human existence.

An integrated approach to the curriculum, as an alternative or complementary method of the disciplinary curriculum, is a constant of the recent curricular policies. While there is no general consensus on the definition of the curriculum integration, the majority of the authors who have addressed the issue of integrated curriculum, have revealed the following features: inter-relating school disciplines from the same domain or different domains, in order to harmonize, unify, establish cohesion; establishing relationships between knowledge, abilities, skills, values from different fields; linking the learning experiences with the everyday life situations, with the own needs and interests; organizing the contents on topics, issues, concepts, principles; managing school time and grouping students in a flexible way.

Summarizing the many approaches to curriculum L. Ciolan (2008, p. 118) gives the following meaning to the term: "... creating meaningful connections between topics or skills that are usually formed piecemeal in various disciplines. These themes or skills have a strong connection to students' daily life, and directly or indirectly aim at contributing to the formation of values and attitudes".

The arguments justifying the need for an integrated curriculum regard the following aspects: the lack of a correspondent in traditional disciplines, for many discoveries, new knowledge, new education issues (environmental, demographic, nutrition, etc.), the need to establish bridges, correlations between separate discipline departments to cover the breaks between them, the construction of mental structures, which are flexible, dynamic, integrated, able to support the most appropriate decisions in situations as diverse as problem-solving capacity, building of professional, social and personal life.

Intra-disciplinarity: it involves organizing the contents in different disciplines, by implementing the sciences panel in the curriculum. Interdisciplinary integration consists in "the conjugation of two or more interrelated contents within the same field of study, in order to solve a problem, to study a subject or to develop a skill" (R. Legendre, 1993).

L. Ciolan (2008, pp.121-122) examines two ways of achieving integration at this level: inserting a fragment in the content of a matter of study, serving to bring additional information, to clarify the issue, the problem addressed; harmonizing and linking different contents of a discipline, for a more complete understanding of the phenomenon, of the topic being studied.

Multi-disciplinarity (pluri-disciplinarity): it refers to the situations in which a theme, a problem (disciplinary) is analyzed, addressed from the perspective of several disciplines, while they remain independent of each other. It is a correlation, a juxtaposition of the efforts of several disciplines, for clarifying the theme. Each discipline will help, by its characteristic, to clarify the theme / issue under review. Pluri-disciplinarity alludes to correlate the efforts of related disciplines, and multi-disciplinarity – the juxtaposition of some disciplines which have no obvious links.

Inter-disciplinarity: it is also a thematic approach, as with the multi / pluri-disciplinarity, assuming, unlike them, a crossing of different fields of knowledge in order to clarify the investigated theme or problem, a higher level of contents integration. Approaching reality, the contemporary world's problems, and also the integration of all types of contents in lifelong learning perspective, requires an interdisciplinary approach.

D'Hainaut (1981), analyzing the problems of organizing contents, shows that inter-disciplinarity involves a degree of integration between the fields of knowledge and the use of a common language, fostering the conceptual and methodological exchanges. Inter-disciplinarity does not imply abandoning the notion of discipline, for the disciplines are necessary both for a systematic intellectual training, and for a better understanding of the world (UNESCO, 1975, according to M. Manolescu, 2004).

In essence, inter-disciplinarity is the selection from the natural and social environment of an area / issues / problem and grouping the relevant knowledge from different scientific disciplines for the full knowledge of the field / that theme and of the development of integrated skills, key skills.

L. Ciolan (2008) identifies and describes two levels in the application of interdisciplinary approach in education: structural inter-disciplinarity (integration is accomplished in the study programs' structure and organization) and functional or operational inter-disciplinarity (integration takes place in the curriculum implementation, in the learning activities' design and conduct).

Trans-disciplinarity: it is the highest degree of contents integration, making a particular change in the relationships between the learning content and student. Trans-disciplinarity approach puts in the center of the learning experiences the student's steps (cognitive, affective, and psychomotor) and not the matter, the contents, the disciplines. Placing students' individual learning processes in the center of the learning experiences determines a students' accountability in relation to their learning.

Trans-disciplinary approach includes other levels of integration (intra-, pluri-interdisciplinary), proposing an approach based on the interaction between them. The training

specific to the curriculum's trans-disciplinary approach is focused on the important issues of real life, of everyday life, on the contemporary world issues, and the learning results demonstrate their meaning and value by the contribution they make to the young's personal development and professional and social success.

Environmental education's integration into school curriculum can be achieved by the following four steps of designing the training content. *The infusional approach* involves the environmental education approach within certain school disciplines (for example, environmental education is simultaneously addressed in biology, chemistry, geography, physics, etc.) but also in the various dimensions of education (for example: in the intellectual - moral - technological - aesthetic - physical / sanitary education). This type of approach raises two important pedagogical and social methodological problems: the need to integrate the information brought from the "environmental education" in the curriculum structure and the need to effectively achieve a curriculum synthesis between the two categories of information.

The modular approach involves the environmental education approach within certain school disciplines, integrated in some educational levels and also in some dimensions of education (for example, environmental education addressed as a "module" within biology, in high school, with objectives specific to intellectual education's dimension). This type of approach raises the question of the correlation that exists between the different "modules" introduced in some education disciplines.

The disciplinary approach involves the environmental education approach as a distinct school discipline integrated in the curriculum. The methodological problem that the disciplinary approach raises, aims at the special status of school disciplines promoted in this way, which do not have the academic basis specific to particular sciences, which also give the title of most school disciplines. Their design involves overcoming the mono-disciplinary trends in favour of the pluri-disciplinary strategies simultaneously focused on the informative scientific contents, but also on the social effects, formatively processed in an intellectual, moral, technological, aesthetic and physical sense.

The trans-disciplinary approach involves the environmental education approach in some "scientific synthesis" annually or quarterly / half-yearly proposed by "teams of teachers" (for example, addressing the environmental education's global issues from the perspective of a team of biology, chemistry, physics, geography, economics, sociology, philosophy teachers etc., within some synthesis lessons, ethical seminars, thematic debates, school competitions, etc.).

The methodological difficulties inherent in this approach employ the educators' sensitivity and social responsibility: their ability to globally approach (moral, intellectual, technological, aesthetic, and physical) the formation-development activity of the educators' personality; their openness to the lifelong learning issues; their desire for continuous professional self-improvement.

Regarding the issue of professional education of those entitled to teach environmental education in primary and secondary education institutions, besides the teachers of natural sciences and geography thought to be specialized in this field, teachers from other specialties can also get involved (math, physics, chemistry, mother tongue, religion, drawing, sports, etc..) and also members of environmental NGOs, of some foundations or associations of environmental actions, who want and support the promote of environmental education. This process requires the knowledge and the acquisition of considerable *environmental* information, the understanding of the connections between circumambience, natural environment, surroundings and the influence (positive or negative) of the anthropic factor, the making of viable programs in order to support the environmental education.

Thus, it is estimated that *environmental education* can not be integrated in a single area of knowledge, but for being a complex process requires the involvement of specialists and researchers from different fields, namely an interdisciplinary approach.

The practical problems that today's society and humanity are facing: the limitation of natural reserves and resources, the environment's continuous deterioration, the global warming effects etc., have determined the outlining and the definition of the "problems of the contemporary world" concept, and they impose their approach by the whole community. Environmental issues are recognized as part of the contemporary world problems. In this sense, starting from the assumption that environmental education's aim is to prevent *environmental deterioration*, and that individuals should be educated to act consciously in order to continuously maintain and improve its quality, we believe that education at school made towards protecting the environment, would be a viable solution. Given these problems' system character, for their resolution is necessary to shift emphasis from the specific approach, to the global and interdisciplinary approach.

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