

# THE COMPARATIVE ANALYSIS OF EARLY EDUCATION CURRICULUM IN THE REPUBLIC OF MOLDOVA AND ROMANIA REGARDING RESEARCH ACTIVITIES IN THE CONTEXT OF ENVIRONMENTAL EDUCATION\*

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## **Abstract**

*Environmental education at pre-school age is becoming essential in the formation of sustainable environmental awareness and the cultivation of responsible behavior towards nature. In this context, research activities carried out in the pre-school environment are not only an opportunity for interactive learning, but also a powerful tool for stimulating children's natural curiosity and developing the practical skills needed to conserve the environment. This article explores in a curricular context, through the analysis of educational documents from Romania and the Republic of Moldova, the role of environmental education among pre-school children, highlighting the benefits of research activities in the formation of a future generation of responsible citizens aware of the importance of protecting our planet.*

**Key words:** *Environmental education, Comparative analysis, Curriculum tangents.*

## **1. Introduction**

In the last decades, awareness of the impact of human activities on the environment has grown significantly, imposing the need for effective environmental education from the earliest stages of human development (Stoica Boltașu, Cojocari, Crivoi, 2020, p. 88). This necessity is based on two essential components – motivational value and effective knowledge.

The goal of the educational strategy is to encourage respect for nature and develop appropriate perceptions of the environment from an early age. Through this, it is intended to cultivate a deep ecological awareness and develop practical skills for protecting nature. Building a holistic system of environmental education is

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essential to achieving this noble goal, thereby preparing future generations to become responsible citizens aware of their impact on the planet.

Thus, we aimed to carry out a comparative study, by applying **the method** of analyzing curricular targets between Romania and R Moldova in the context of environmental education. The study was carried out during the years 2023-2024 in the context of doctoral research on aspects of realization of environmental education of pre-school children from the perspective of research activities. In this context we analyzed educational policy documents, highlighting similarities and differences in developmental domains; developmental dimensions; competences and behaviors with regard to environmental education; specific methods of environmental research and exploration activities.

## 2. Conceptual Framework of the Romanian and R Moldova Curriculum on Environmental Education of Pre-school Children

Early education in the education system in Romania, according to the "Remarks for the Design and Updating of the National Curriculum" (ISE, 2016; Curriculum, 2019) Curriculum, and in the Republic of Moldova, according to the "Standards for learning and child development from birth to 7 years" (Cutasevici, Crudu, *et al.*, 2019), is based on the holistic approach to child development and the child-centered approach in the educational process. According to these educational policy documents, a primary goal of early childhood education is to support all areas of child development including social-emotional, physical, cognitive, and language development, as these establish the basic architecture and function of the brain.

Development domains become, during the first years of organized life in the nursery and kindergarten environment, essential pedagogical tools to achieve the individualization of education and learning, allowing educators to identify both the predispositions and the inclinations with which the child came into the world, his "interests" or, better said, the domains, sequences, aspects or elements of the social and natural environment to which he is attracted and towards which he shows his curiosity, as well as the difficulties that each of them encounters during early development (MEN, 2019, p. 16).

The five areas of development are presented in Table 1.

**Table 1. Correlation of development domains in Romanian educational policy documents vs. Republic of Moldova on environmental education**

Development area Romania	Development area RM	Correlations with environmental education
➤ <i>The physical development of health and personal hygiene health strengthening</i>	➤ <i>Physical development and health strengthening</i>	From a physical point of view, L. McCurdy shows that physical activity is increasing, it develops more strongly and the myopia associated with children who spend more time in an indoor setting, decreases (McCurdy, Winterbottom, Menta, 2010). P. B. Loprinzi, K. Cardinal,

related to personal care growth and and H. Lee (2012) outline the and hygiene, nutrition, development benefits of experiencing nature and other practices to (Cutasevici, Crudu, *et* from a physical point of view: maintain security (MEN, *al.*, 2019, p. 10). positive changes in skeletal health, 2019, p. 17). psychological health, and motor skills are manifested, as well as stimulating the movements necessary for the development of gross motor skills.

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➤ **Socio-emotional development** aims at the beginning of the child's social life, his ability to establish and maintain social interactions and to respond to the emotions of others, as well as the development of his self-concept (MEN, 2019, p. 18).

➤ **Personal, emotional, and social development** is the foundation of relationships and interactions that give meaning to children's experiences, which influence children's social life (Cutasevici, Crudu, *et al.*, 2019, p. 11).

According to the researchers Wilson and Wilson (2014), the emotional development of early children is a consequence of a complex and dynamic interaction with nature. Omidvar, Wright, Beazley (2018) underlines that from the perspective of emotional development, by the age of 3, children regulate a wide range of emotions, from primary feelings, love, fear, and anger, to secondary emotions such as guilt, sympathy, empathy, and sadness. Similar to cognitive development, the development of emotions in childhood is under the influence of the child's environmental conditions. So learning in and through nature opens a valuable lens for a child's social and emotional development.

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➤ **The development of language, communication and the premises of reading and writing** aims at the development of language under the aspects of vocabulary, grammar, and syntax, but also understanding the meaning; of communication and listening skills (MEN, 2019, p. 17).

➤ **The development of language, communication, and the premises of reading and writing** aims at the development of language, the mastery of oral and written expression, and the ability to understand oral and written communication (Cutasevici, Crudu, *et al.*, 2019, p. 11).

It involves familiarizing children with environmental education literature. Some research (Ballouard, Provost, Barre, Bonnet, 2019) has demonstrated that children's relationship with nature can be influenced by time spent outdoors and by the aversion or affinity towards nature that adults and other individuals model or display in the presence of children. The researchers' conclusions emphasize the role of children's direct experience with the environment, as well as interactions with adults and playmates in a gradual progression from aversion to affinity with nature

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<p>➤ <b>Cognitive development and knowledge of the world</b> - the child's ability to understand the relationships between objects, phenomena, events, and people, beyond their physical characteristics</p>	<p>➤ <b>Cognitive development refers to the processes through which children acquire the ability to think</b>, assimilate and use the information received (Cutasevici, Crudu, <i>et al.</i>, 2019, p. 12).</p>	<p>It aims at the formation of basic ideas about the objects of the surrounding world, about their properties and the relationships between them (shape, color, size, causes and effects), about the Earth, the peculiarities of its nature, the diversity of countries, etc. The ecological orientation of children's cognitive activity consists in the formation of ideas about the harmonious integrity of nature, the uniqueness of objects and phenomena, the ability to highlight the properties of the environment, the qualities, the connections, the physical laws existing in nature; multisensory perception of nature; selection of criteria for the environmental assessment of natural objects (durability, integrity, identity) (Ionescu, <i>et al.</i>, 2010; Ворошилова, Новикова, 2012; Gînju, Carbet, <i>et al.</i>, 2012).</p>
<p>➤ <b>Development of learning capacities and attitudes</b> - how the child gets involved in a learning activity, how he approaches the tasks and learning contexts, and his attitude in the interaction with the environment and the people around him.</p>	<p>➤ Missing</p>	<p>From the perspective of environmental education, optimal conditions are created for the child's development: by creating cognitively stimulating activities, transdisciplinary activities (Dumitru, 2004), opportunities to experience the natural environment, systematic observations of objects from living and inert nature, stimulating interest in observing natural phenomena, assigning questions and searching for answers (Gînju, Crabet, Haheu, 2013; Stan, 2016).</p>

The areas of development, reflected in the Curriculum from Romania and ȘIDC from the Republic of Moldova, emphasize the importance of physical, socio-emotional, language, knowledge of the world, and learning capacities for preschool children and highlight similarities regarding the emphasis placed on the physical and mental development of children, with specific mentions on cognitive development and the integration of environmental education in the educational process. Thus, both regulatory documents converge towards a recognition of the natural environment as an essential framework for the holistic development of children, emphasizing the multiple benefits that the integration of environmental education in early education brings.

The correlation of developmental domains with environmental education is supported by research that highlights the benefits of physical activities and contact with nature on children's physical and psychological health. Studies highlight that children's direct experiences with the natural environment are essential for their development, influencing their future attitudes and behaviors toward the environment.

### **3. Reflecting Research Activities in Early Childhood Environmental Education**

Other curricular tangents between Romania and Moldova can be found in types of learning activities, suitable for environmental education, outdoor games and activities, carried out by means such as walks, games in the sand, sports games and competitions, and activities in experiential fields, reflected through exercises with individual material, experiments, constructions, reading after images, observation, conversation, stories created by children, as well as other didactic-specific means, depending on the educational needs of preschool children (MEN, 2019, pp. 8-9).

In the CET of the Republic of Moldova, these are seen again in recreational and relaxation activities, which aim to activate preschoolers, to awaken interest in knowledge and free action: outdoor games, walks, shows, relaxation breaks, etc. (Vrânceanu, Cutasevici, *et al.*, 2019, p. 121) Special attention is paid to the organization of the educational space, as they have been called over time, of zones/centers of activity/areas of interest, to equally stimulate all areas of development and allow the design of interdisciplinary thematic units The centers / open corners (MEN, 2019, p. 8) or centers of interest/simulation areas (Vrânceanu, Cutasevici, *et al.*, 2019) are an important dimension of the integrated approach to the curriculum. The center of interest designates the space intended for activities of a certain profile from the perspective of the materials and stimuli it contains, serving a certain field of activity. In ensuring environmental education, an important role in the development of children's research activities can be represented by the "Sciences" Center. It makes it possible to create the optimal conditions, at all age groups, for the formation of children's cognitive interest in the world around them and the development of research skills, solving problem situations during which the ability to analyze, to look for solutions is formed, to conclude and argue (Cutasevici, Crudu, *et al.*, 2019, p. 24, p. 44).

On the strategic dimension, the curriculum in both countries includes dimensions that directly refer to the development of curiosity, translated into clear behaviors regarding the realization of environmental research activities through specific methods of direct and indirect exploration: experiments, experiences, observation, case study, demonstration, modeling, etc. (Vrânceanu, Cutasevici, *et al.*, 2019, p. 125). These methods create situations that the child solves through experimentation and, analyzing, independently concludes certain laws or phenomena.

In conclusion, both Romania and the Republic of Moldova adopt similar approaches regarding the integration of environmental education into the educational curriculum for preschool children. Both countries recognize the importance of outdoor activities, play, and scientific exploration as essential means for the holistic

development of children and the formation of a responsible and respectful attitude towards the environment.

In the context of environmental education, the development of the young person's later skills, on different dimensions of the development domains, provides a detailed picture of the comprehensive development of the child in different aspects, presented in Table 2.

**Table 2. Correlation field of development - dimensions of development - behaviors regarding environmental education**  
(MEN, 2019, pp. 18-24)

<b>Size of development</b>	<b>At the end of the preschool period (0-3 years), the child will show a series of behaviors</b>	<b>At the end of the preschool period (3-6 years), the child will display a series of behaviors</b>
<b>Area of development A. PHYSICAL, HEALTH AND PERSONAL HYGIENE DEVELOPMENT</b>		
Gross motor skills and fine motor skills in familiar life contexts	1.1. Actively participates in games, dances, outdoor etc. 1.2. Uses hands and fingers in proper manipulation of objects/tools	1.1. Uses hands and fingers to perform various activities
Sensory-motor conduction, movement orientation	2.1. Imitates animals by movement, appearance. 2.2. Explores and uses different textures and surfaces playing (sand, water, leaves, plush, plastic, sponge)	2.1. Uses the senses (sight, hearing, touch, smell, etc.) in interaction with the immediate environment 2.2. It orients itself in space based on the senses
<b>Area of development B. SOCIO-EMOTIONAL DEVELOPMENT</b>		
Prosocial behaviors, accepting and respecting diversity	1.1. Anticipates and follows simple rules/routines, with supervision and if reminded	1.1. It expresses the recognition and respect of the similarities and differences between people
<b>Area of development C. ABILITIES AND ATTITUDES TOWARDS LEARNING</b>		
Activation and manifestation of creative potential	1.1. He pretends to be someone, uses imagination in play 1.2. Finds new uses for objects, with/without adult guidance	1.1. Demonstrates creativity in his various activities
<b>Area of development D. DEVELOPMENT OF LANGUAGE, COMMUNICATION AND THE PREMISES OF READING AND WRITING</b>		
Oral messages in various communication situations	1.1. Verbalizes gustatory, olfactory or visual experiences 1.2. Ask to know the names of objects, events, people	1.1. Demonstrates ability to clearly communicate ideas, needs, curiosities, actions, own emotions (expressive communication)

1.3. Use new words in everyday experiences		
Development domain E. COGNITIVE DEVELOPMENT AND KNOWLEDGE OF THE WORLD		
Relations, operations and logical deductions in the immediate environment	<p>1.1. Experiment to observe the effects of your actions on objects and others</p> <p>1.2. Determines and describes the similarity or difference between two objects of the same type</p> <p>1.3. Use trial-and-error exploration to solve problems</p>	<p>1.1. Identifies the characteristic elements of some phenomena/relationships in the immediate environment</p> <p>1.2. Compare experiences, actions, events, phenomena/relationships from the immediate environment</p> <p>1.3. Build new experiences, starting from past experiences</p>
Elementary mathematical representations, for solving problems and knowing the immediate environment	<p>2.1. Identifies by comparison, the size or quantity of objects of the same type</p> <p>2.1. Identifies, with support, categories of objects, beings (cat, fox and dog are animals) and groups them according to a criterion</p>	<p>2.3. Identifies and names the shapes of objects in the environment</p> <p>2.4. Performs operations of serialization, grouping, classification, measurement of objects</p>
Structural and functional features of the surrounding world	<p>3.1. Notice details or differences between objects, beings, phenomena they are interested in, when they examine them</p> <p>3.2. Observe and understand that living things need water and food to grow and develop</p>	<p>3.1. It highlights the characteristics of objects located in the surrounding space</p> <p>3.2. It identifies and exploits some characteristics of the living world, of the Earth and Space</p> <p>3.3. It describes some characteristics of the living world, of the Earth and Space</p> <p>3.4. It demonstrates knowledge of man's position in the universe, as part of the living world and as a social being</p>

These expected behaviors reflect a complex set of skills and competencies that children should acquire at different stages of their preschool development. According to the analysis carried out, we deduce that environmental education at the preschool level, in a curricular context, is carried out from birth to 6 years by acquiring basic knowledge and skills of knowledge of the immediate environment, in all areas of development. However, emphasis is placed on the field of Cognitive Development and World Knowledge, where children form their first environmental research skills. These are fundamental for understanding and respecting the environment, and promoting a responsible and conscious attitude towards its conservation and protection.

The approach of an integrated curriculum represents the correlation of the areas of development with the areas of activity, which constitutes child-centered

education, the importance of the child's needs, interests, and own learning style being paramount (Vrânceanu, Cutasevici, *et al.*, 2019; Cutasevici, Crudu, 2019). According to the CET of the Republic of Moldova, learning units are covered by activity domains, which represent directed learning activities that allow the organization of learning experiences, starting from the needs identified at the level of the group of children (Vrânceanu, Cutasevici, *et al.*, 2019).

The fields of activity are correlated with the fields of development, provided in the Standards of Learning and Development of Children (Cutasevici, Crudu, 2019). Environmental education mainly falls within the "Sciences" field of activity, the "Environmental education" dimension. Following this, the specific skills are formed (Vrânceanu, Cutasevici, *et al.*, 2019, p. 70).

1. Recognizing and describing the components, phenomena, processes, and relationships, from the environment, demonstrating correctness in the use of specific terminology;

2. Applying the methods and tools of exploration and investigation of the environment, demonstrating interest and curiosity in collecting the results;

3. Adopting appropriate behavior in the environment, showing responsibility, and a positive attitude towards it.

To generalize the competencies expected at different ages in environmental education, we can observe the evolution of children's knowledge and skills according to the age range. The competence units that facilitate the training of specific competencies in this field of activity are structured during the three age periods, displayed in Table 3.

**Table 3. Analysis of competence units by age periods, dimension "Education for the environment"**

(Vrânceanu, Cutasevici, *et al.*, 2019, p. 87)

Age 3-5 years	Age 5-7 years
1. Recognizing and describing the components, phenomena, processes, and relationships, from the environment, demonstrating correctness in the use of specific terminology	
2.1. Recognition of objects, phenomena, and beings based on observations;	3.1. Recognition of environmental protection rules based on images.
2.2. Distinguishing similarities and differences between objects using the senses.	3.2. Maintaining order in the environment.
2.3. Formulating questions about the surrounding world;	3.3. Manifestation of positive attitude towards plants, animals
2. Applying the methods and tools of exploration and investigation of the environment, demonstrating interest and curiosity in collecting the results	
2.1. Determining and explaining the relationships/interactions that cause certain effects.	3.1. Recognizing the basic needs of the human being (water, air, food, shelter, light).
2.2. Observing different processes, phenomena, relationships, and components of the environment.	3.2. Determining the role of plants and animals in human life.
	3.3. Identification and description of human activities in nature (agricultural, household activities, etc.).



2.3. The use of specific tools (magnifying glass, ruler, etc.) and the senses in exploring the components and phenomena of nature.	3.4. Identification of environmental care rules.
2.4. Carrying out simple experiences to understand the environment	3.5. Maintaining a clean environment by applying care rules
2.5. Modeling bodies from different materials	
3. Adopting an appropriate behavior in the environment, showing responsibility and a positive attitude towards it	
2.1. Using environmental investigation methods and tools to gather information about the world around us.	3.1. Distinguishing and describing conditions specific to human life.
2.2. Explaining and generalizing the results of observations and investigations.	3.2. Identifying and arguing the role of man in maintaining an ecological environment.
2.3. Body modeling, natural phenomena from various recyclable materials	3.3. Active participation in the care and protection of the environment
	3.4. Explaining, in your own words, the role of plants, animals, and natural phenomena in the environment

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These skills reflect children's understanding and interaction with the environment, starting with simple observations and reaching a deeper understanding of relationships and responsibilities related to its protection and conservation. So, according to the CET at preschool age, children must: distinguish the interaction of man with the natural environment; characterize groups of living and inert objects in nature; identify the seasons and their specific phenomena; specify the particularities of adaptation of some groups of animals and plants to their living environment, to seasonal changes and the day-night sequence; to show a caring and participatory attitude towards the environment.

#### 4. Conclusion

In terms of environmental education and research activities based on the curriculum in Romania and the Republic of Moldova, there are specific approaches and distinct objectives, but both countries share a common concern for the formation of a strong ecological consciousness among children from an early age tender.

In the context of the present research, we highlight the following ideas:

- The curricular benchmarks in Romania and the Republic of Moldova emphasize the benefits of physical activities and contact with the natural environment for children's physical and psychological health;

- Both countries recognize the importance of social interactions and the formation of personal identity in the context of environmental education, stimulating empathy and respect for the environment;

- The curriculum in both countries promotes understanding of relationships and phenomena in the natural environment, encouraging research and learning experimentation;

- Both countries support environmental research and exploration activities as effective learning methods for developing cognitive and problem-solving skills.

Environmental education in Romania and the Republic of Moldova is a priority in the educational curriculum for preschool children, offering them ample opportunities for exploration and learning through direct experiences with the natural environment. The holistic approach to child development, integrating environmental education in all aspects of its development, reflects the commitment of both countries to the formation of a generation responsible and aware of the protection of the environment.

## REFERENCES

1. Ballouard, J. M., Provost, G., Barr, D., Bonnet, X. (2019). Influence of a field trip on the attitude of schoolchildren toward unpopular organisms: An experience with snakes. *Journal of Herpetology*, 46(3), 423-428. <http://www.jstor.org/stable/23326917>
2. Ворошилова В. М., Новикова, Т. А. (2012). Эколого-валеологический подход к созданию развивающей предметной среды в дошкольном образовательном учреждении. In: *Pedagogical Education in Russia*. <https://pedobrazovanie.ru/authors/v-m-voroshilova-t-a-novikova>
3. Cutasevici, A., Crudu, V. (2019). *Ghid de implementare a Curriculumului pentru Educație Timpurie, a Standardelor de învățare și dezvoltare a copilului de la naștere până la 7 ani din perspectiva Cadrului de referință pentru educație timpurie*. [https://mecc.gov.md/sites/default/files/ghid\\_ro.pdf](https://mecc.gov.md/sites/default/files/ghid_ro.pdf)
4. Cutasevici, A., Crudu, V., Guțu, V., Vrânceanu, M., Pavlenco, M., Musteață, E., Stratan, N., Șargarovschi, S., Luțic, L., Paladiciuc, A., Prepelită, E., Ușurelu, S., Spânu, T., Arman-Rotar, V., Mocanu, L., [et al.] (2019). *Standarde de învățare și dezvoltare a copilului de la naștere până la 7 ani*. Lyceum.Publishing House.
5. Dumitru, A., Dumitru, V. G. (2004). *Activități transdisciplinare pentru grădinițe și ciclul primar*. Pitesti: Paralela 45 Publishing House.
6. Gînju, S., Carabet, N. ș.a. (2012). *Didactica educației preșcolare*. Summaries. UPS „Ion Creangă”.
7. Gînju. S., Carabet. N, Haheu. E. (2013). *Activități investigațional-practice de cunoaștere a mediului*. UPS „Ion Creangă”.
8. Ionescu, M., Anghelescu, C., Boca, C. (2010). *Repere fundamentale în învățarea și dezvoltarea timpurie a copilului de la naștere la 7 ani*. Vanemonde.
9. Loprinzi, P. D., Cardinal, B.J., Loprinzi, K. L., Lee. H. (2012). Benefits and Environmental Determinants of Physical Activity in Children and Adolescents. *Obesity Facts*, 5, pp. 597-610. <http://dx.doi.org/10.1159/000342684>
10. McCurdy L., Winterbottom, K., Mehta, E. (2010). Using nature and outdoor activity to improve children's health. *Current problems in pediatric and adolescent health care*, 40(5), pp. 102-117. DOI: 10.1016/j.cppeds.2010.02.003
11. Omidvar, N., Wrigght, T., Beazley, K (2018). Investigating Nature-Related Routines and Preschool Children’s Affinity to Nature at Halifax Children’s Centers. *The International Journal of Early Childhood Environmental Education*, 6(2), 42-58. <https://naturalstart.org/research>

12. Stan, L. (2016). *Educație timpurie. Probleme și soluții*. Iasi: Polirom Publishing House.
13. Stoica (Boltașu), G., Cojocari, L., Crivoi, A. (2020). Educația pentru mediu – una din prioritățile contemporaneității. In: *Issues of socio-humanistic sciences and modernization of education. International conference 80 years of the State Pedagogical University „Ion Creanga” from Chisinau*. UPS „Ion Creangă”, 2, pp. 88-91.
14. Vrânceanu, M., Cutasevici, A., Crudu, V., Guțu, V., Bodrug-Lungu, V., Pavlenco, M., Mocanu, L., Clichici, V., Duminiță, S., Dascal, A., Straistari-Lungu, C., Musteață, E., Arman-Rotaru, V. (2019). *Curriculum pentru educație timpurie*. F.E.P. Central Tipography.
15. Wilson, R. L., Wilson, R. (2014). *Understanding emotional development: providing insight into human lives*. Routledge, 290 p. DOI: 4324/9781315849331
16. \*\*\*M.E.N. (2019). *Curriculum pentru educația timpurie*. [https://www.edu.ro/sites/default/files/Curriculum%20ET\\_2019\\_aug.pdf](https://www.edu.ro/sites/default/files/Curriculum%20ET_2019_aug.pdf)