
THE CROSS-CURRICULAR INTERRELATIONSHIPS AT PRE-SCHOOL AGE IN LIGHT OF THE PRINCIPLE OF UNITY BETWEEN NATURAL-SCIENTIFIC AND AESTHETIC KNOWLEDGE**Victoria Veleva**Primary Training School "M. Lakatnik", Burgas, viktoaliq@abv.bg

Abstract: Globalization and the development of consumer societies, climate change, biodiversity loss (due to the extinction of species), and the disturbance of the balance in nature have led to the development of a new philosophy in the relationship man - society - nature.

The main paradigm of our everyday life is creating increasingly complex environmental issues, mostly with regard to our interaction with the surrounding world.

This, in turn, determines the establishment of a stable relationship between the individual and its environment, where it can express environmentally-friendly relations toward:

- ❖ „its inner space (physical and spiritual)”;
- ❖ „its immediate surroundings - natural, residential, social”;
- ❖ „the other people and their surrounding environment - natural, residential, social; toward nature as the habitat of all living creatures” (E. Yanakieva).

Today, pedagogical science faces the difficult, yet vital task of "seeking new ways to build human's relationships with its surroundings and to introduce them into the pedagogical reality even before the relevant changes in society have taken place" (E. Yanakieva).

This article examines the cross-curricular relations in pre-school pedagogy in light of the principle of integration of natural-scientific and aesthetic knowledge (E. Yanakieva). It explains the need to apply interdisciplinary relations during pre-school childhood.

We carry out a methodological analysis of the cross-curricular interrelationships in the pre-school training aids approved by the Ministry of Education and Science.

The article reveals and justifies the pedagogical potential of the cross-curricular relations through the prism of the principle of unity between natural-scientific and aesthetic knowledge, their organizational and methodological structure, as well as concrete ways of implementing them in the different educational fields.

As a result of the established lack of methodological recommendations for the application of cross-curricular relations at pre-school age, we make recommendations for the integration of cross-curricular relations with the purpose of applying the principle of unity between natural-scientific and aesthetic knowledge.

Keywords: eco-pedagogy, natural-scientific, aesthetic knowledge, interdisciplinary.

1. INTRODUCTION

Globalization and the development of consumer societies, climate change, biodiversity loss (due to the extinction of species), and the disturbance of the balance in nature have led to the development of a new philosophy in the relationship man - society - nature. The main paradigm of our everyday life is creating increasingly complex environmental issues, mostly with regard to our interaction with the surrounding world.

This, in turn, determines the establishment of a stable relationship between the individual and its environment, where it can express environmentally-friendly relations "toward its inner space (physical and spiritual); toward its immediate surroundings - natural, residential, social; toward the other people and their surrounding environment - natural, residential, social; toward nature as the habitat of all living creatures" (E. Yanakieva).

This is precisely why it is not only necessary but imperative that the application of innovations in education be closely linked with the successful traditions of our social culture in order to build competences, which motivate children toward environmentally-friendly actions. The system of competencies should cover informational, socio-cultural, educational, health-related and environmental aspects, subject to environmental interpretation. This determines the integration of the planned educational material in the different educational fields at pre-school age.

Under this aspect, cross-curricular relations become a necessary, essential and particularly imperative principle for the performance of subject synthesis, through which knowledge and skills integrate, creating sustainable habits.

2. IMPORTANCE OF CROSS-CURRICULAR RELATIONS IN PRE-SCHOOL PRACTICE

Contemporary pedagogical theory and practice strongly prove that the effect on children is most fruitful and effective when it is comprehensive, when children perceive the same idea presented in different ways. Cross-curricular (called also interdisciplinary - M. Andreev, P. Nikolov, E. Petrova) relations in educational work are a direct reflection of inter-scientific relations. According to pre-school pedagogy, the cross-curricular relations are a particular, mutual coherence between programs, which is conditioned by the system of science and didactic

goals. The reasons behind the lack of a unified classification of cross-curricular relations is the application of different indicators and criteria for structuring them.

Considering the imperative need to implement environmentally-friendly actions as early as pre-school age, from a pedagogical point of view, gives rise to the question: "What are the principles that promote a successful implementation of cross-curricular relations?" In response to this question, we focused on the principles of building an environmentally-friendly model of education, elaborated by Prof. Yanakieva:

- ❖ The principle of direct contact with nature;
- ❖ The principle of integration of natural-scientific and aesthetic knowledge;
- ❖ The principle of cultural conformity.

3. CROSS-CURRICULAR RELATIONS AT PRE-SCHOOL AGE IN LIGHT OF THE PRINCIPLE OF NATURAL-SCIENTIFIC AND AESTHETIC KNOWLEDGE

The basis of the principle of integration of natural-scientific and aesthetic knowledge is the formation of "relatively accurate natural-scientific ideas about nature and the most universal patterns in its development" [10]. The unity between the natural-scientific and aesthetic in the "child - surrounding world" interaction process helps children to see nature as a "source of inspiration" in order to acquire "humanistic notions" about the surrounding reality.

The aesthetic attitude toward the surrounding world, by the power of its comprehensiveness, can be successfully interpreted in all educational fields at pre-school age, as it is not a standalone task in a system of pre-school education but a priority in each separate educational field. This determines that the predominantly anticipated results in the provided educational material are subject to the formation of such behavioral patterns that provoke pre-school children not only to acquire environmental knowledge but also to perform environmentally-friendly actions (both in pedagogical situations and in their free time - mostly during play-time).

The successful application of cross-curricular relations at pre-school age in light of the principle of the natural-scientific and aesthetic knowledge can be achieved under the following conditions:

- ❖ Gaining knowledge about actually existing objects, processes and phenomena;
- ❖ Chronological synchronization of the planned topics in the different educational fields (objectives, tasks, expected results, methods, techniques);
- ❖ Existence of methodological recommendations related to the acquisition and deepening of the child's natural-scientific ideas about the surrounding world and integration of the acquired knowledge into the different educational fields;
- ❖ The acquisition of knowledge about "nature as a cultural value" should not tend toward "academism" but be tied to the development of environmentally-friendly skills with practical relevance for the children.
- ❖ The practical use of analytical methods in order to achieve a synergic effect and a synthesized consideration of issues subject to environmentally-friendly solutions.

4. ORGANIZATIONAL AND METHODOLOGICAL STRUCTURE OF THE CROSS-CURRICULAR RELATIONS AT PRE-SCHOOL AGE THROUGH THE PRISM OF THE PRINCIPLE OF NATURAL-SCIENTIFIC AND AESTHETIC KNOWLEDGE

In the tables below, we apply an organizational and methodological structure to the cross-curricular relations between the different educational fields and their specific ways of implementation. (Table No. 1)

Table No. 1

Interrelation between the different fields	educational	Method of implementation
1. Interrelations according to the methods of mastering specific knowledge, skills and habits		→ reproducible → creative

2. Interrelations according to the direction of implementation	→ intra-scope → inter-scope → horizontal → vertical
3. Interrelations according to the time of implementation	→ preceding → parallel (concomitant) → subsequent (prospective)
4. Interrelations according to the time of realization	→ episodic → permanent but not systematic → systematic
5. Interrelations according to the forms of the educational process	→ regulated → unregulated
6. According to teachers' and children's work organization methods	→ individual → group (frontal, teamwork)

5. METHODOLOGICAL ANALYSIS OF CROSS-CURRICULAR RELATIONS IN THE PEDAGOGICAL SYSTEMS APPROVED BY THE MINISTRY OF EDUCATION AND SCIENCE

The methodological analysis of the cross-curricular relation in the aids, approved by the Ministry of Education and Science,

for pre-school education and training ("*Izkustva*" [*Arts*], "*Molivko*", "*Moite prikazni patechki*" [*My Fairy Paths*], "*Priyateli*" [*Friends*], "*Raka za raka*" [*Hand in Hand*]) allows the following conclusions to be drawn:

- ❖ Lack of methodological guidelines for the integration of planned topics and expected results;
- ❖ The topics that allow for integration in light of the principle of unity between the natural-scientific and aesthetic knowledge are examined fragmentarily;
- ❖ Lack of chronological synchronization between the planned topics in the different educational fields;
- ❖ the idea of applying cross-curricular relations is set out clearly but there are no specific recommendations about its practical implementation.

We could note that only the cognitive books "*Viki i Niki*" [*Vicky and Nicky*] (publishing house "*Anubis*") are consistent with the application of cross-curricular links in the different educational fields. The analysis of "*Viki i Niki*" shows that:

- ❖ the educational material intended for adoption by children, in each different field, contains natural-scientific knowledge about nature and its dependencies;
- ❖ in chronological terms, the planned topics and the expected results in the educational fields are synchronized;
- ❖ the purpose of the educational material is not to acquire knowledge of theoretical nature but quite the contrary - it provides for the acquisition of specific knowledge to be related to the development of environmentally-friendly skills with practical relevance for the children.

6. CONCLUSION

The lack of methodological recommendations for the application of cross-curricular relations at pre-school age allows to give the following recommendations:

- ❖ up-to-date synthesis of the cognitive content of pre-school training aids;
- ❖ Synchronization of the planned topics (objectives, tasks, expected results, methods, techniques) in each educational field with the purpose of successfully applying cross-curricular relations in light of the principle of unity between natural-scientific and aesthetic knowledge;
- ❖ Leading objectives in each different field should be the acquisition of "relatively accurate natural-scientific ideas about nature and the most universal patterns in its development."

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