
**THE ECOLOGICAL EDUCATION OF THE 5- TO 6- YEAR-OLD CHILDREN IN THE
CONTEXT OF THE COMPETENCE PARADIGM**

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Abstract: The elaboration presents conceptual and content aspects of an author's model for educating ecological culture in introducing 5- to 6- year-old children into the natural world. The need for new interactive systems for environmental education in childhood is being defended. The vectors of pre-school ecological education and schooling are brought forth, they are addressed through the cognitive-information, personal, cultural and competence paradigms. The structure of the competence conceptual idea in pre-school ecological education is specified. In the context of the European educational priorities for early preparation and presentation of natural science competences, the basic principles that make up the model of "Molivko – I play and I know. Environmental studies" are brought out; it is designed to introduce 5- to 6-year-olds into the world of nature. They require cognitive and informational stimulation of personal experience in orientation in the natural world, empirically-active behavioural and communication regulation in the socio-environmental surroundings, model-situational systematization of ideas for maintaining a sustainable environment, reflexive-emotional attitude to the picture of the world of nature of the individual. Accordingly, the goal of the pedagogical interaction "child – nature", which is referred to the initial stage of compulsory pre-school education, is set out. The integrative aspects of the author's model related to game, socialization, knowledge, communication, safety, health, physical culture, labour and artistic creativity are set. The content accents of the model system, built up by adapting key concepts and skills related to bio-ecology, social and applied ecology, which in their unity guarantee the cognitive basis of the children's ecological culture, are specified. Methodological ideas and solutions, laid down in the applied-educational provision of the author's system are interpreted. Emphasis is placed on the inclusion of an accessible practice-transforming research activity, participation in modelling activities, children's presentation and discussion with environmental content, collection, project activity. They are achieved through viewing, demonstration, multimedia presentations, talk, storytelling, reading of artistic works, didactic games, exercises, elementary experiments, modelling, staging, etudes, cases, etc. They are guaranteed by educational interaction, which presupposes the achievement of educational trends for key natural-science competences in the third age group, theoretically set and covered in applied-education field.

Keywords: environmental education, competence paradigm, natural science competences, ecological culture

TOPICALITY ANNOUNCEMENT

To a significant extent, the prosperity of contemporary society is determined by the level of the ecological culture of its citizens and this culture guarantees for the maintenance of a sustainable and healthy environment. The social expectations related to the formation of a new type of ecologically and humanely oriented perception of the world have their own specific projections in the system of preschool education in Bulgaria. They are projected within the frame requirements relating to ecological education during childhood, which are systematized in Regulation 13, dated 11.10.2016. Their guarantee in the practical educational plan shall be achieved through an interdisciplinary complex which is concentrated on acquiring competencies related to health and maintaining a sustainable environment. Ecological education is a part of this complex. Within the contemporary educational context, 'ecological education is oriented towards the formation of ecological culture, ecological awareness and ecological behavior in their interconnection with a view to knowledge of ecological laws, protection, improvement, management and reasonable use of natural resources, as well as preservation of the environment and ecological balance'(Regulation 13, 2016).

The prospective achievement of the mentioned aim is bound by the construction of contemporary models for the realization of preschool ecological education in Bulgaria and these models shall guarantee the early training and expression of natural science competencies as a basis for the achievement of a new type of ecological and humanitarian mindset and behavior. Their structuring, scientific substantiation and applied educational protection are one of the challenges for our pedagogical community in the terms of reforming the educational policy in our country. Educational priorities and values in the environmental field shall be the initial guidelines here. In light of them, the educational technologies for orientation of the child in the world of nature shall be brought up-to-date by considering the established traditions in the national system and the opportunities for their innovative upgrade.

In the sense of this context, the present elaboration aims to present conceptual and instructive focuses in the author's model 'Molivko – I play and I know' which is intended for realizing the ecological education during the first year of the mandatory preschool education and training of Bulgarian children.

A NECESSITY OF NEW INTERACTIVE MODELS FOR ECOLOGICAL EDUCATION IN CHILDHOOD WITHIN THE CONTEXT OF THE COMPETENCE PARADIGM

According to Thomas Kuhn, the paradigm is '... an established model, pattern and standard' (Kuhn, 2008, p. 17). Sv. Golosova and L. Fedorenko clarify that the paradigm is 'a generalizing model of the methodological, theoretical and applied activity of the scientific community' (Golosova, 2016, p. 2). In pedagogical dictionaries, it is explained that the word is of Greek origin and means 'an example, a pattern'. The concept 'pedagogical paradigm' is defined as a combination of theoretical and methodological attitudes, accepted by the scientific pedagogical community, which are defined as a pattern, standard and model for solving pedagogical issues. It is further said that this is a system of instructions and regulations. Therefore, it can be said that the pedagogical paradigm is a starting conceptual scheme, a model for the treatment of pedagogical issues and their solution.

According to D. Pavlov, the first key element of each educational technology is the educational paradigm. It requires a specific definition of the essence and meaning of education. It is related to specifying its mission, fundamental concepts and expected results (Pavlov, 2001, p. 80). Therefore, when it is referred to preschool ecological education, the educational paradigm can be defined as a leading conceptual idea which determines the direction and nature of the reforms in the field of ecological training and education.

There are different pedagogical paradigms defined in Literature that have been dominant during a certain period from the development of Pedagogical science. Four conceptual ideas are significant during the contemporary stage: cognitive-information, personal, culturological, competence.

The cognitive-information paradigm focuses on the necessity of teaching a maximum volume of knowledge. It is oriented towards subject programmes, fixed results which lend themselves to evaluation. Needs and desires of trained children are not a priority here.

The personal paradigm focuses on the emotional and social development of the child. The child is examined as a person who can choose a way of education on its own – a way which would provide the achievement of a significant result for the child.

The culturological paradigm does not call into question the necessity of mastering knowledge and skills which assist adaptability in our rapidly-changing world, but it focuses on the transfer of values and culture by professing a value perspective for the quality of education.

The competence paradigm focuses on preparing and manifesting key competences, the lack of which would make the activity of modern person impossible. The emphasis is placed on the formation of a mobile and capable person who possesses methods and technologies for receiving information.

Each of the mentioned paradigms sets its own vector of preschool ecological education. The competence paradigm shall be brought forward preemptively without underestimating the significance of the complex realization of the mentioned paradigms within a contemporary educational context. Its structure in preschool ecological education can be illustrated by figure Nr. 1.

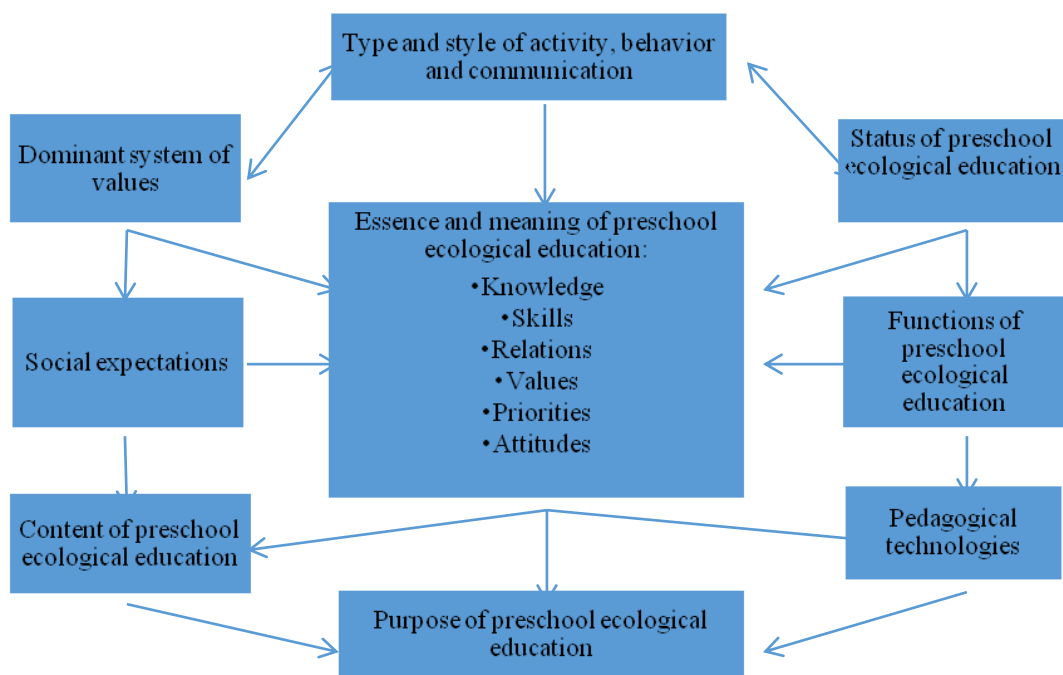


Figure Nr. 1 Structure of the competence paradigm in preschool ecological education

A MODEL OF PEDAGOGICAL SYSTEM OF FORMS FOR TEACHING ECOLOGICAL CULTURE WITHIN THE CONTEXT OF THE INTERACTION OF 5 AND 6-YEAR-OLD CHILDREN WITH THE WORLD OF NATURE – CONCEPTUAL ASPECTS

The pedagogical system ‘Molivko – I play and I know’ (Konakchieva, 2018) is consistent with the principles for selection and structuring of the educational content in the ‘Surrounding world’ discipline. In the context of European educational priorities for early preparation and expression of natural science competencies, through introduction into the world of nature the options for achieving constructive personal changes in far-reaching plan which presuppose the individual prosperity of the child are guaranteed. Due to this, the fundamental principles for developing a conceptual basis of the model system are the following:

- cognitive-information stimulation of personal experience upon orientation in the world of nature – suggests conformity with the characteristics and originality of personal experience upon the construction of individual educational routes with a view to its stage-by-stage upgrade and adding significant forms and methods of activity for the child. This requires considering the subjective purpose for acquiring a subjective and topical, significant and valuable information for the world of nature. It imposes the use of applied educational options of cognitive strategies that provide elaboration of the cognitive sphere upon the transitions from illustrative-operative to illustrative-figurative and logical thinking;
- empirical-operative regulation of the behavior and communication in and among the world of nature – this supposes considering the specifics of using the subjective experience in the terms of practical-cognitive and transforming activity. This requires a complex application of individually designed variable systems of illustrative, verbal and practical methods for action and thinking in line with the opportunities and real interests of children. Based on this, the right of self-assertion in the terms of communication and activity in and among nature is protected;
- model-situational systematization of notions for sustainable development of nature and its preservation – this imposes considering the interconnection between the sense and logical aspects upon perceiving and rationalization of the dynamical changes in the world of nature. It supposes providing an accessible illustration in line with the individual possibilities and needs of the child upon ‘overcoming the static images for the world’ (Gyurov, 1999, p. 56). In an illustrative plan, the materialization of concealed attributes, principles, relations and links between natural objects through models provides the expression of essential facts and phenomena of significant nature. At the same

time, this guarantees the interaction between different forms of thought by preparing the transition to illustrative-schematic and discourse thinking;

- reflexive-emotional attitude towards one's own view of the world of nature – this supposes stimulation of the child's emotional sphere and it creates an attitude for manifesting the cognitive activity upon interaction with the world of nature which has a personally significant and subjectively valuable character. It requires the verbalization of established facts, patterns and relations in nature which assists their comprehension and rationalization. The substantiation and proving of own points of view for the interpretation of events, phenomena and processes from the nearest to the farthest natural environment supposes expression of personal attitude towards it. It prepares for the realization of the uniqueness of one's own perspective of the world as a system of general beliefs integrated by the positive emotional and evaluative attitude of the child to events and processes in which it participates. Simultaneously, it considers the transition towards self-control of own behavior in and among nature and the formation of an attitude towards nature in line with the individual needs and social norms which are inherent in humane and universal values.

The goal of orienting 5 and 6-year-old children in the world of nature is related to mastering a system of general beliefs for signs, attributes and regularities of objects and phenomena from the natural environment in unity with the formation of methods for their transformation in the terms of the surrounding environment with a view to establishing and applying adequate mechanisms of behavior which prepare an aware creative and humane-personal attitude towards nature.

The topics presented in the author's model are intended for orienting 5 and 6-year-old children in the surrounding natural environment (Konakchieva, 2018) and are prepared by considering the unified system of competencies integrated in the educational nucleus 'The world of nature and its preservation' (Regulation 5, 2016). Their content is selected in such a way that it guarantees the realization of state educational standards and this content is related to orientation in the world of animals, plants, the natural physical environment and natural phenomena. The separate units divided by topics in the cognitive book for the child and the suggested options for additional activities are related to the three mentioned educational focuses of the nucleus upon guaranteeing variable interconnections between them. Simultaneously, there are opportunities suggested for the integration of educational areas presented in Figure Nr. 2.

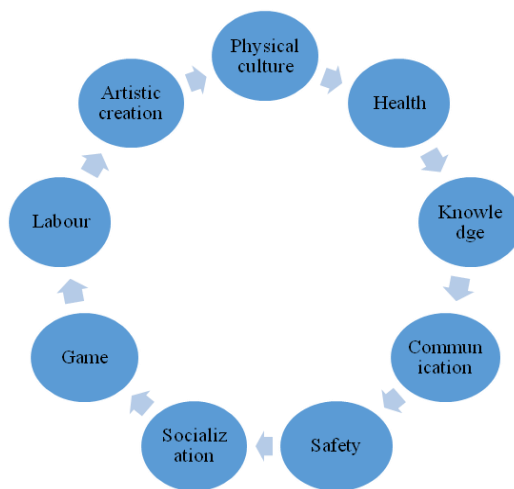


Figure Nr. 2 Integrative aspects of the pedagogical model

In terms of the conceptual plan, the projections of Bioecology, Social ecology and Applied ecology in preschool ecological education are considered upon creating the model. They are systematized and shown in Figure Nr. 3. The idea is to prepare the cognitive basis for children's ecological culture through the complex realization of these projections. This culture is examined as a unity of *ecological knowledge*, *ecological self-awareness*, *goal-setting object* and *attitudes* towards nature and the environment which are manifested in the child's practical activity. The preparation of scientific fundamentals of rational use of nature, which is subject to maintaining a sustainable environment, is pursued and guaranteed through the key meaningful structures related to Bioecology.

Firstly, here the focus is on the formation of a system of notions for the world of nature as a totality of certain species of the flora and fauna. The understanding that this system should be placed at the basis of a

subjectively significant attitude towards natural objects as possessing uniqueness and self-value is initial. The knowledge of the world of nature is emotionally defined by the child's attitude towards it and is a favourable basis for the mastering of strategies and technologies for non-pragmatic interaction with the world of nature. The focuses concerning Social ecology are also related to this. Through them, the child is introduced to the contradictory relations between society and nature. The aim is to expand and structure the individual perspective of the world through rationalizing one's own place as a part of nature. Realizing the peculiarities of ecology by human lays in the basis of adaptability towards certain natural conditions related to healthy lifestyle. What follows naturally are the focuses related to Applied ecology. Through them, prerequisites for ecologically correct behavior are prepared as a significant aspect of human activity, as people are a factor responsible for the sustainable development.

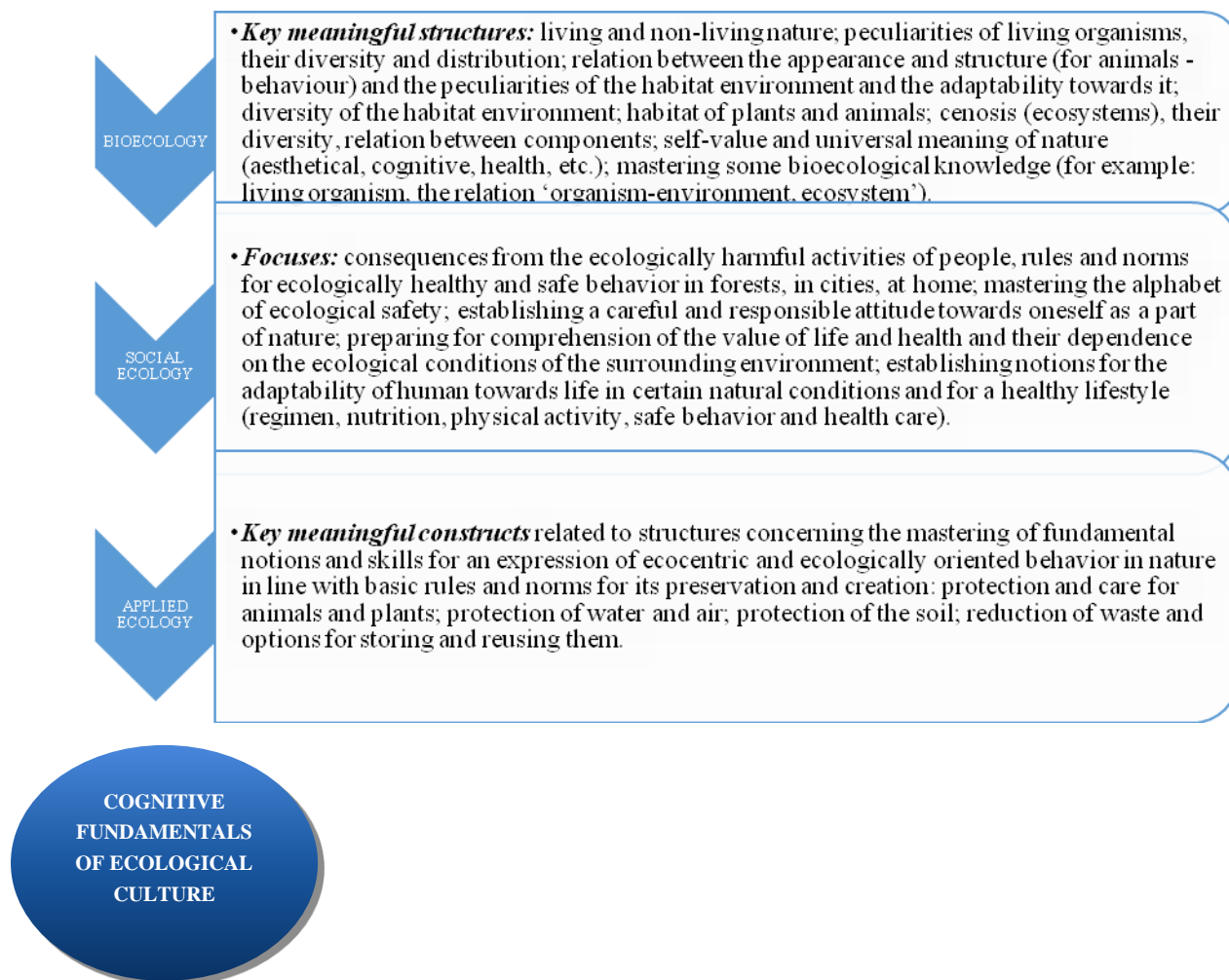


Figure Nr. 3 Cognitive bases of ecological culture through the author's model

METHODOLOGICAL ASPECTS OF THE PEDAGOGICAL MODEL CONSISTING OF BASIC AND ADDITIONAL FORMS OF EDUCATING ECOLOGICAL CULTURE IN PREPARATORY GROUPS (5 AND 6-YEAR-OLD CHILDREN)

The pedagogical model 'Molivko – I play and I know' shows that the interaction of 5 and 6-year-old children with the world of nature is realized through a system of basic and additional forms. This cognitive book includes 32 topics intended for work under weekly tuition hours of two situations. Their type is determined by the teacher's discretion and can be complemented by different interactive forms. Ideas for this are presented in the exemplary annual distribution and methodological instructions. There are options suggested for realizing a close contact with nature and active learning in and among it. Different options are stipulated for the organization of pedagogical interaction with a focus on early preparation and expression of natural science competencies. The focus is on the

participation in an accessible practical and transformational research activity, participation in modeling activity, children's presentations and holding a conference with ecological content, collecting and project activity.

The system suggests forms and methods of pedagogical interaction related to orienting in natural environment and is designed according to the teacher's view. It is not static, it is open and can be unfolded in different options in line with the topical needs and interests of individual children, children's associations (groups) or the entire children's group which supposes integration of situations in the system according to children's suggestion. Thus, the equal treatment of pedagogical subjects is approved and there are opportunities created for the realization of personally oriented preschool education based on individualized programmes that consider children's subjective needs, expectations and interests.

The systematized topics in the cognitive book (Konakchieva, 2018) are oriented to acquaintance with the surrounding natural environment through providing opportunities for:

- interaction with objects from the flora and fauna oriented to acquaintance with their characteristics and formation of adequate mechanisms of behavior towards them;
- orientation in the conditions of the environment as a totality of factors that determine the dynamic changes in living organisms;
- considering the role of human as a factor for sustainable development.

The pedagogical effects of applying situational forms are expressed in the achievement of constructive personal changes during the process of preparing and expressing natural science competencies. They can be specified through an applied provision of the following tendencies:

- perceiving the environment and understanding the self-value of nature;
- exercise an individual practice upon using accessible research techniques – observation, investigation, experimenting, modeling, etc.;
- the child's realization of its own place as a part of nature;
- considering the 'living' as a value;
- formation of notions for rules and norms related to ecological safety;
- mastering models for ecologically correct behavior in daily activities on the grounds of critical consideration and substantiation of one's own activities;
- providing strategies for rational use of natural resources based on the use of water and energy in households;
- analyzing specific situations in nature and understanding the grounds for other people's deeds and actions;
- realizing the interconnection between one's own actions and the condition of the surrounding environment;
- evaluating facts and information based on a dialogue and expression of involvement upon critical perception of conflicts in the natural environment;
- educating a positive, emotional-cognitive and evaluative (subjective humane-ethic) attitude towards the surrounding world of nature, of the creative initiative and sustainable willingness for changed behavior with the purpose of protection and preservation of natural resources;

In applied plan, the work on every topic included in the cognitive book for children can be realized through combining different methods of interaction: examination, demonstration, multimedia presentations, discussion, narration, reading literary works, educational games, exercises, elementary experiments and experimenting, modeling, staging, studies, cases, etc.

EDUCATIONAL TENDENCIES FOR KEY NATURAL SCIENCE COMPETENCIES OF 5 AND 6-YEAR-OLD CHILDREN THROUGH THE CONTENTS OF THE INTERACTIVE MODEL 'MOLIVKO – I PLAY AND I KNOW'

The formation of specific and dynamic notions for the morphological signs of animals from the nearest and farthest surroundings of the child upon considering their relation to the conditions of the environment as a totality of factors for life is premised in the contents through the topics related to the *educational focus 'Fauna'*. Simultaneously, the mastering of strategies for establishing quality changes is prepared and it is related to objects from the fauna, to causal changes upon realizing the principle for keeping and variability of signs, discovering links and correlations between essential and non-essential changes in the world, being aware of empathy and creativity in the environment, considering and preserving the 'living' in nature.

Through the topics related to the *educational focus 'Fauna'*, the formation and improvement of notions for the structure of plants are premised upon considering the functions of their parts for satisfying general and differentiated needs of light, warmth, dampness and nutrients. Benchmarks are systematized in order to get an insight into the dynamics of change of objects from the flora upon certain cyclic conditions of the environment.

Simultaneously, there is a preparation for the mastering of strategies for establishing quality changes of objects from the flora, discovering causal changes upon realizing the principle of preservation and variability of signs, establishing time parameters of non-essential changes and the dynamics of essential changes in the flora, discovering ways to express differentiated activity towards the surrounding plants.

Through the topics related to the *educational focus 'Natural physical environment and natural phenomena'*, the formation and improvement of notions for the non-living nature – celestial objects and natural phenomena is premised. A preparation for the mastering of skills for observation and describing meteorological (rain, wind, cloudiness, etc.) and electromagnetic phenomena (thunder, lightning, rainbow) is made.

Ideas for unfolding one's own practical and investigative activity are systematized. This activity is oriented towards testing water properties, air and soil and considering their significance to the life of plants, animals and human.

CONCLUSION

The development of an autonomous and active person who is familiar with and observes the norms of ecological culture and behavior with a view to protecting nature and creating a sustainable environment supposes substantiation of effective applied educational solutions. In the contemporary educational context, a starting benchmark upon their development is the idea of change in the nature of the child's attitude towards the world of nature. The competence paradigm shall be dominant here and it is a starting benchmark for the creation of the author's model for ecological education in preparatory group 'Molivko – I play and I know' (5 and 6-year-old children). It is oriented towards overcoming formality upon the realization of the educational potential of the natural-social surrounding through creating conditions for purposeful and diverse activity of pedagogical subjects which would provide humane orientation of growing up children's identity. This is possible through organizing a humane interaction with nature which is realized in the structure of the entire pedagogical process.

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