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Implementing Integrated Technologies in Aesthetic Development of Primary Schoolchildren

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Abstract

The relevance of problem of aesthetic development of primary schoolchildren by means of integrated technology is caused by the necessity to find new ways allowing to create a holistic picture of images embodied in the art. Development of theoretical positions of this phenomenon is based on: 1) influence of association on the development of mental processes of the individual; 2) integration of arts mutually complementing and enriching the holistic vision of artistic image. However, these areas have not been developed in primary school practice. The aim of the study is to implement the main areas of integrated technology in the aesthetic development of primary schoolchildren. The study used both theoretical and empirical methods. The importance of implementing integrated technology is determined by the necessity to find the main areas ensuring aesthetic development of children. Due to the new knowledge about content and structure of integrated technology, practical significance of the study lies in the possibility to implement the main structural components of integrated technology in professional activities of teachers. Determining specifics of the aesthetic development of primary schoolchildren should begin by clarifying the content of its components. Specifics of targeted, methodological, meaningful, procedural and effective components of integrated technology should be taken into account. Complementary techniques should be used to determine the criterion.

Keywords: aesthetic development, primary schoolchild, integrated technologies, criterion, techniques, levels.

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Introduction

The relevance of aesthetic development of primary schoolchildren by means of integrated technology is determined by the necessity to find new ways allowing not only to reveal qualitative changes in aesthetic properties of a person, but also to create the holistic picture of images embodied in the art. Each art form affects by its own specific artistic and figurative language, which influences certain aspects of the personality. However, to create the general picture of a particular era, particular people and their culture, to trace the process of artistic development of the world it is necessary to teach children to consider different forms of art in interrelation, to find common conceptual points of contact in the artistic image in various forms of art.

Understanding these points according to the Federal State Educational Standard of Primary Education requires development of a “polyphonic type of thinking” (Yusov, 2004) promoting development of aesthetic perceptions, feelings, imagination, judgments and assessments. Using integrated technology in the aesthetic development of primary schoolchildren causes certain difficulties which are manifested: 1) in isolation of solving problems of aesthetic development of children at the lessons of aesthetic cycle; 2) in the lack of implementing basic points of integrated and multi-artistic approaches in education; 3) in applying integrated technology at different levels (inter-subject, synthesis, complexity) of forming artistic image of primary schoolchildren.

Thus, there is a need for a scientific basis, theoretical and practical implementation of the integrated technology in the aesthetic development of primary schoolchildren.

Purpose and objectives of the study

The paper set out to prove theoretically and implement integrated technologies in the aesthetic development of primary schoolchildren.

This goal is achieved by the following tasks:

- to clarify the content of the concept “aesthetic development of primary schoolchildren”, integrated technology;
- to determine the criterion and levels of aesthetic development of primary schoolchildren by means of integrated technology;

- to identify the main areas of implementing integrated technology in the aesthetic development of primary schoolchildren.

Literature review

Theoretical positions of integrated technology in the aesthetic development of children are based on the ideas about: 1) noospheric understanding of the man as a part of nature and the universe, their coevolution when biosphere transitions into a new state, into the sphere of mind (Subetto, 2020); 2) association influence on the development of mental processes of the personality (Vygotsky, 1986); 3) necessity for interaction of art forms, complementing and enriching the holistic reflection of the objective world in the artistic image (Lazareva, Lazarev & Ovchinnikova, 2019); 4) specifics of aesthetic development of primary schoolchildren (Pechko, 2020).

However, implementing these ideas does not determine specifics of the concepts of aesthetic development of primary schoolchildren and information technology properly; content, kinds, types, connections of art forms are not used properly in the structure of integrated technology, which promote development: 1) synthetic expressive images, 2) aesthetic judgments; 3) creative activities of primary schoolchildren.

Analysis of aesthetic, psychological and educational literature (Pechko, 2020; Vygotsky, 1986;) allowed us to consider aesthetic development of primary schoolchildren as qualitative and quantitative changes of aesthetic experiences, perceptions, feelings, imagination, judgments and assessments ensuring transition from the ability to perceive and feel the expressiveness of images in art to their creating in an independent creative activity.

In accordance with these qualities, the following features of this phenomenon were highlighted: emotional orientation of perceiving artistic images being determined by reaction of the subject to the means of artistic expression (color, form, movement, sound); dependence of understanding art images on the types of artistic perception (emotional-figurative, abstract-logical, mixed); spirituality of perceived existence ensuring the comprehension of spiritual content of the object; the ratio of real and imaginary in creating artistic image. The appeal to aesthetic development of primary schoolchildren is not accidental, as this period is the most sensory for the development of emotionality, memory, thinking and imagination of primary schoolchildren by means of art.

The psychological basis of integrated technology is associations based on the same sensations - visual with visual, auditory with auditory; and different - visual-hearing or olfactory-taste (Ananyev, 2001).

In the process of their implementation primary schoolchildren were introduced to art works, which evoked different associations.

This process is connected with: 1) combining disparate components into the single whole; 2) establishing significant links between art forms; 3) creating qualitatively new education that has integrity, unity, interdependence among all components of aesthetic cognition of the world. Therefore, principles of integration and complementarity, interconnection and interpenetration of different images of art in the learning process are the main ones for this technology (Selevko, 2006; Savenkova, 2018).

This understanding of integrated technology involves creating the new content of aesthetic development of primary schoolchildren based on the vectors that represent a certain target artistic and aesthetic direction. A horizontal vector is connected with the specifics of different types of arts, with their contact points in the learning process, with the existential sphere of their perception by children. A vertical vector is the world of imagination, understanding spiritual content of art.

These vectors are refracted through space and time: past, present and future (Yusov, 2004). Integration methods are priority ones in implementing these vectors (Lazareva, Lazarev & Ovchinnikova, 2019).

The first group is made up of methods built on the equality of components. The first method is “gluing”. It is characterized by a weak degree of integration with equal relations between components. This compound is determined by the common thematic focus when studying art forms. The components are positioned sequentially. The example of this interaction is thematic days dedicated to outstanding writers, composers and artists of the Lipetsk region. The second method is “symbiosis”. It is determined by the average force of integration when components are equal. It allows combining individual fragments of the lesson forming common informed field. This method is typical for integrated lessons of literary reading, music and visual arts.

The third method is “blurring”. It is characterized by the highest power of interacting with equal components that merge together. The second group is represented by methods of inequality of components.

The fourth method is “subordination”. It involves the average force of integration when one component is the basic and the other is auxiliary. For example, at the lessons of literary reading while the topic “Spring” is learned, the tasks on literature are basic, and the tasks on music are auxiliary. The fifth method is “removal”. It involves the absorption other components by the core component. The sixth method is “retrospective pairing”. It is determined by the fact that the content of auxiliary components becomes the means for solving problems of the basic component.

Understanding these provisions requires development of the main components of integrated technology at the lessons of aesthetic cycle. These components allow forming synthetic images, determining their meaning on the basis of common points of contact, and managing the development of aesthetic qualities of the individual using different types and connections of interaction of art forms.

Methodology

Methodological basis of the study is the axiological approach based: 1) on the understanding a child's perception of the world, that is simultaneous perception, hearing and touching objects of the surrounding world (Yusov, 2020); 2) on the spiritual formation of the personality in the process of immersing into creativity in various activities (Savenkova, 2018; Pechko, 2020); 3) on the identification of the inner figurative, spiritual connections of words, sound, color, space, movement, form and understanding affinity of art forms (Lazareva, Lazarev & Ovchinnikova, 2019; LaJevic, 2013; Savenkova, 2018).

The applied methods included: theoretical methods (analysis, generalization and interpretation); empirical methods (questioning, observing, pedagogical experiment, quantitative research methods) and methods aimed at revealing features of aesthetic development of children in the process of using integrated technology in accordance with the selected criterion. The method "Art at school" (IHO RAO, 2000) was chosen for a motivational criterion; the author's method (Lazareva, Lazarev & Ovchinnikova, 2019) was chosen for a cognitive criterion; "Test of emphatic content of the personality" by Yusupov (2013) and "The assessment of emotional intelligence" (EQ) by Hall (2002) were chosen for an emotional criterion; figurative-sound battery by Torrance (1988) was chosen for a creative criterion. Scaling allowing determining the levels of aesthetic development of primary school children and Fisher's angular transformation were used for the analysis of experimental data. The informed consent was obtained from the third-graders and their parents.

Experimental base of the research

The experiment was conducted in the 2020-2021 academic year at school No. 24 named after M.B. Rakovskiy in Lipetsk. It involved 88 students of the third grades: 44 students in the experimental group (EG) and 44 students in the control group (CG).

Stages of the research

The pedagogical experiment included three stages. The first stage aimed at the theoretical analysis and refinement of basic concepts of the study.

The second stage involved the development and implementation of the final and forming phases of the experiment. The third stage identified the dynamics of results before and after the experiment, their interpretation and formulation of the main conclusions.

Results

The aim of the experiment was to determine the effectiveness of using integrated technology in the aesthetic development of primary schoolchildren. The tasks of the experiment: 1) to determine the levels of aesthetic development of primary schoolchildren by means of integration of arts; 2) to uncover students' motives and needs in using integrated technology; 3) to develop the program of using integrated technology; 4) to state the impact of integrated technology on the aesthetic development of primary schoolchildren.

During the process of solving the first task of the study the following criteria of aesthetic development of third-graders were determined: motivational, figurative, emotional, and creative. Specific diagnostic techniques were selected for each criterion.

Motivational criteria include students' interest when studying works of art and using integration of art at the lesson; necessity for various types of artistic and creative activity. Younger students were offered the questionnaire taken from the method "Art at school" (2000) developed at the Institute of Art Education and Culture of RAE Moscow. The results were rated on the scale: 3 points is a high level, 2 points is an average level, 1 point is a low level on each trait.

The analysis of students' responses showed the following results: art occupies a significant place (23% EG and 25% CG); gives the opportunity to rest (27% EG and 31% CG); helps to understand other people (15% EG and 10% CG); valuable to all little by little (17% EG and 14% CG), has a small place in life (18% EG and 20% CG). 76% in EG and 78% in CG have a necessity for different activities at the lesson. Most third-graders like using different types of art at the lesson. They substantiate their point of view in such a way: because it is interesting (72% EG and 70% CG); to gain the new knowledge about works of art (25% EG and 32% CG), to think better (29% EG and 32% CG); to understand the beauty (33% EG and 35% CG), to understand author's thoughts (20% EG and 18% CG).

Answering the question (At which lessons is integration of arts used more often), 100% of students in EG and CG called fine art and literary reading; 58% EG and 55% CG chose music, 18% EG and 20% CG chose a foreign language. In this way, students have a positive attitude towards using integrated technology.

The analysis of the study results according to the motivational criterion allowed identifying and characterizing three levels of aesthetic development of primary schoolchildren: high, average, low.

The high level is characterized by the interest to study arts, the need to use integrated technology at the lessons of aesthetic cycle, a pronounced attitude to art works (21% EG and 27% CG).

The average level is determined by a situational definition of the place of art in the life of a student which is associated with entertainment, possibility to relax; necessity to integrate arts is fragmented (50% EG and 62% CG). The low level is associated with a weak interest to study works of art. Art occupies a little place in the student's life and there is no need to integrate arts at the lesson (29% EG and 11% CG).

Cognitive criteria are characterized by the formed knowledge about types and genres of art, about using the means of expressiveness in literature, music, fine arts, which contribute to the creation of a certain image and mood. The participants were offered the author's methods (Lazareva, Lazarev & Ovchinnikova, 2019). For example, they had to name types and genres of art they know and to determine what is common between literature and music; between fine art and literature. The results were rated on the scale: 3 points is a high level, 2 points is an average level, 1 point is a low level.

The analysis of the results revealed three levels of aesthetic development of primary schoolchildren according to the cognitive criterion: high, average, low.

A high level is characterized by a wide range of genre preferences, knowledge of styles and genres of literature, music, fine art, finding their common features; selecting means of expressiveness. Students at this level highlight common genres in literature and music, such as a fairy tale in literature and a fairy tale in music: commonality of topics depicting seasons: for example, spring in literature, music and fine art; commonality in mood in the works of different kinds of art (8% EG and 12% CG).

An average level is determined by the predominance of knowledge about genres and styles of art in accordance with the program and some familiar means of expressiveness in art. Common features of different forms of art are identified according to one or two signs (55% EG and 58% CG). Low level shows weak knowledge of genres and styles of art, means of expressiveness are not identified, students cannot find common points of contact in different types of art (37% EG and 30% CG).

Emotional criterion is associated with external and internal manifestation of emotions and feelings. Some methods were used for diagnosing it and for checking validity.

This is monitoring the students, “Test of emphatic content of the personality” by Yusupov (2013) and “Assessment of emotional intelligence” (EQ) by Hall (2002). Their goal was to reveal the degree of empathy in the interaction of art forms and identification of emotional intelligence. Some questions were changed and reduced in line with the problem of study and age characteristics of students. Particular attention was paid to such scales as: empathy, recognition emotions in the works of art, managing emotions. The students used “+” if the answer was positive and “-” if the answer was negative. The results were rated on the scale: 63-90 points is a high level; 37-62 points, an average level; 5-31 points, a low level.

The high level is characterized by pronounced manifestation of emotionality in the process of integration of art forms, empathy for heroes, ability to define emotions and feelings in the works of art correctly, to model emotions and feelings (11% EG and 14% CG).

The average level assumes situational manifestation of emotions in the process of the integration of arts, empathy for characters is not shown sufficiently. Students sometimes determine emotions in the works of art incorrectly, it is difficult for them to model emotions and feelings based on the means of expressiveness (58% EG and 64% CG). The low level is characterized by weak manifestation of emotions and feelings; empathy for the characters of the works does not arise, students do not determine emotions and feelings to works of art correctly, do not know how to model them (31% EG and 22% CG).

The creative criterion includes associativity and originality. It is determined by the figurative-sound battery of Torrance (1988). The following subtests like “Making a picture”; “Repeating Lines”, “Unfinished Figures” were used. The results were rated according to the scale: 70-10 is a high level, 5-7 is an average level, 1-4 is a low level. The high level is characterized by creative imagination of students when perceiving art forms, pronounced associativity and originality of created images (10% EG and 4% CG). The average level is associated with creating images of reproductive imagination, associability is manifested by color, form, movement, originality is fragmentary (52% EG and 62% CG). The low level is manifested in the fact that students cannot create image by their own, associations do not arise, originality in responses and activities is not observed (38% EG and 34% CG).

All methods are reliable because they take into account the factors affecting the reliability of study, and they are valid as these methods correspond to the tasks of an empirical study.

The forming stage of the experiment was aimed at forming integrated images, determining their meaning on the basis of common points of contact and using different kinds and types of art.

This process was based on using horizontal and vertical vectors of integrated technology content taking into account the following ways of integration: “gluing”, “symbiosis”, “blurring”, “subordination”, “removal”, “retrospective pairing”. These ways of integration were implemented when studying the following themes: “Harmony of the World”, “Seasons. The Soul of Russian Nature”, “A Festive Fair”, “What delightful these fairy tales are” and “The World of Toys” at the integrated lessons of aesthetic cycle. In the research we used such methods as improvisation, plastic intonation, association, dramatization, illustration, comparison and juxtaposition, problematic methods, color modeling, and design. The most important meaning was given to such forms like an integrated lesson, a lesson-travel, a lesson-fairy tale, talk shows, web quest, portfolio and others.

The test phase of the experiment was conducted in March 2021. Its aim was to determine the effectiveness of using integrated technology in the aesthetic development of primary schoolchildren. Quantitative and qualitative analysis of the results of experimental group (EG) at the control stage showed a positive dynamic on all criteria in comparison with a current stage and a control group (CG). The comparative results are presented in Figure 1.

The results of control stage of the experiment at a high level increased compared to the reporting stage: in EG they increased on the motivational criterion by 3.2 times (32%); on the cognitive criterion – by 2.8 times (22.4%); on the emotional criterion they increased by 3.4 times (37.4%); on the creative criterion they increased by 4 times (40%). At the average level the results of the study in EG on the motivational criterion increased by 1.2 times (60.4%); on the cognitive criterion – by 1.2 times (68.3%); they decreased on the emotional criterion by 1.1 times (50.2%); they decreased on the creative criterion by 1.1 times (47.3%). At the low level the results of the study on the motivational criterion in EG decreased by 5 times (7.6%); on the cognitive criterion – by 4 times (9.3%); on the emotional criterion – by 2.5 times (12.4%); on the creative criterion – by 3 times (12.7%). In CG according to the motivational criterion the results at a high level doubled (8%); they increased on the cognitive criterion by 1.5 times (13.5%); on the emotional criterion – by 1.8 times (23.2%); on the creative criterion – by 2 times (8%). At the average level in CG the results on the motivational criterion increased by 1.1 times (66%); on the cognitive criterion – by 1.3 times (66.5%); on the emotional criterion – by 1.3 times (81%); on the creative criterion – by 1.1 times (69.3%). At the low level in CG the results on the motivational criterion decreased by 1.3 times (26%); on the cognitive criterion – by 1.5 times (20%); on the emotional criterion – by 2 times (11%); on the creative criterion – by 1.5 times (22.7%). The dynamics of the results of the study before and after training in EG and CG is shown in Table 1.

Table 1. The dynamics of the results of the study before and after the training in EG and CG

Criteria	Levels	EG		CG	
		Before training %	After training %	Before training %	After training %
motivational	high	10	32	4	8
	average	52	60.4	62	66
	low	38	7.6	34	26
cognitive	high	8	22.4	12	13.5
	average	55	68.3	58	66.5
	low	37	9.3	30	20
emotional	high	11	37.4	14	23.2
	average	58	50.2	64	65.8
	low	31	12.4	22	11
creative	high	10	40	4	8
	average	52	47.3	62	69.3
	low	38	12.7	34	22.7

The dynamics of the results on all criteria for the high level before and after the experiment in EG and CG is shown in Figure 1.

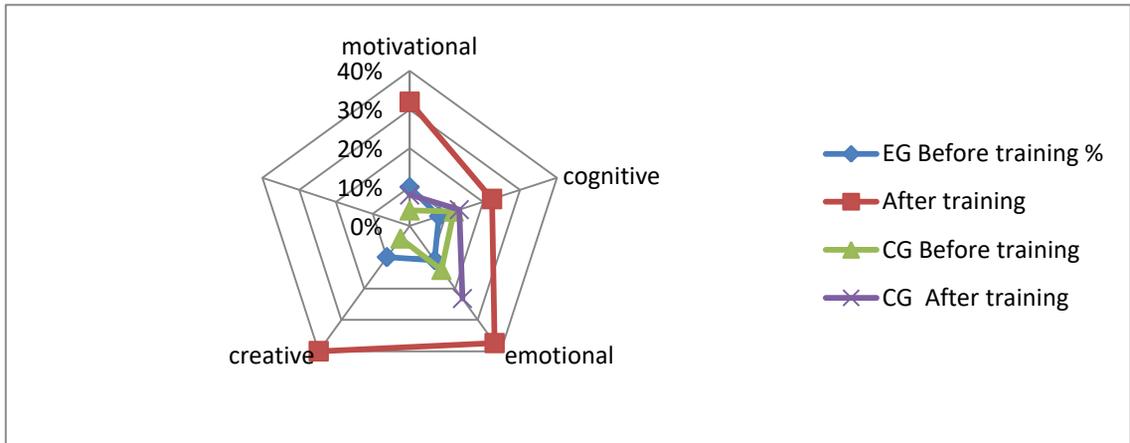


Figure 1. High-level results in EG and CG before and after the experiment

To check reliability and validity of the study results, automatic calculation of Fisher’s angular transformation was used – criterion ϕ^* (Table 1, Figure 1) that according to motivational criterion in EG after experiment was $\phi^*_{emp}=3.953$; according to cognitive criterion $\phi^*_{emp}=2.843$; according to emotional criterion $\phi^*_{emp}=4.469$; according to creative criterion $\phi^*_{emp}=5.127$. Received empirical meanings ϕ^* are located in the zone of significance. H_0 is rejected (the axis of significance is 1.64-2.31) (at the level of significance $P=0,01$).

In CG at the high level according to motivational and creative criteria after the experiment $\phi^*_{emp}=1.209$; according to cognitive criterion $\phi^*_{emp}=0.219$.

Received empirical meanings φ^* are located in the zone of insignificance. H_1 is rejected. According to emotional criterion $\varphi^*=1.6$. Received empirical meaning φ^* is located in the zone of uncertainty (at the level of significance $P = 0,001$).

Thus, it has proved that using integrated technology has significant impact on the aesthetic development of primary schoolchildren. The received results are reliable and valid.

Discussion

The study of psychological and educational literature showed that certain directions such as studying integrated essence of art was considered in details by researchers (Lee, 2019; Pechko, 2020; Savenkova, 2018; Selevko, 2006; Yusov, 2004). However, there is a lack of developing methods for using horizontal and vertical vectors of integrating arts in the aesthetic development of primary schoolchildren.

The empirical research confirms the conclusion that the third graders have a positive motivation to using integrated technology when studying types of art. They emotionally perceive artistic images. However, most difficulties for them are: ability to transfer knowledge about types and genres of art, about means of expression in literature, painting, music; to find common points of contact; to create original images in the process of integrating art forms.

The conducted research allows recommending for primary school teachers to regularly use the following ways of integration: “gluing”, “symbiosis”, “blurring”, “subordination”, “removal”, “retrospective pairing” for the effective realization integrated technology. It should be noted that such methods of integration cause difficulties in practice, that is why it is necessary to develop methodological recommendations for their using.

To implement the integrated technology effectively we recommend to use such methods as: improvisation, plastic intonation, association, dramatization, color modelling, problem and project methods.

Conclusion

The importance of implementing integrated technology is determined by the need of finding new forms and tools ensuring unity, interconnection and interpenetration of different images of art, which influence all the processes of aesthetic development of primary schoolchildren. The new knowledge about content, vectors, ways of integration of arts that contribute to the development: 1) synthetic expressive images, 2) aesthetic judgments; 3) creative activities of primary schoolchildren has been received.

The criterion for implementing integrated technology in aesthetic development of the individual (motivational, cognitive, emotional, creative) and levels (high, average, low) has made it possible to determine relationship between using integrated technology and aesthetic development of primary schoolchildren.

The practical significance of the study is that criterion, diagnostics and levels; ways of integrating arts into aesthetic development of primary schoolchildren presented in the article can be used by teachers, graduate students, teachers and educators in their professional activity.

Recommendations: determining specifics of aesthetic development of primary schoolchildren should begin by clarifying the content of its components. When developing integrated technology at the lessons of art and aesthetic cycle, it is important to consider vectors and ways of integration. Different complementary research methods and diagnostic techniques should be used while determining the criterion.

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