

Esthetic Education of Children with Special Needs by Means of Computer Art

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Thematic justification of the problem under study: growth of social stratification in the present context of social and economic transformations and emerging forms of social inequality, which is creating serious obstacles for the younger generation's social adaptation, specifically among those social groups that are dealing with difficulties due to specific circumstances. First of all, it concerns children with special needs. Specifically, processes of modern public reform and how they often lead to the violation of social integration and adaptation for this group of children. Such a process poses a problem of an independent living arrangement, juxtaposed with the background of low efficiency of realization of educational and habilitation technologies. It has been observed that educational institutions have not yet been able to fully counteract these negative factors. Growth of the number of children with special needs, on the one hand, and humanization of public life, wide circulation of ideas, increases the importance of social and rehabilitation activity. The purpose is to enhance the social and educational training and increase maximum achievable adaptation of life, granted to children with special needs, a chance to develop skills for social orientation, ethics and cultural social attitude. This data and analysis of such is relevant to the esthetic education of children with special needs as conditions of formation of a socially valuable personality.

Keywords: esthetic education, computer art, personality, special needs, development

INTRODUCTION

Relevance of the subject

Development of processes of humanization of social relations, transition to the principle of social tolerance, recognition and respect of the rights, and dignity of each individual, irrespective of his or her opportunities or beliefs, is very characteristic of modern day Russia (Valeeva & Demakova, 2015). The contemporary cultural and educational space is aimed primarily at formation of intelligence of a personality, while the emotional and spiritual development of a personality remains on the periphery of pedagogical influence (Kalimullin & Masalimova, 2016; Kartal, 2016; Tagunova et al., 2016; Ilbay & Akin, 2014).

Art plays a major role in this process. Adaptation opportunities of art in relation to a child with special needs are novel, positive experiences, as are the realization of the need of creativity, unlimited opportunities for self-expression and self-

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realization, both in the course of creativity, and perception of the individual self. Art products of a child facilitates the process of its communication and establishment with people on an interpersonal level.

At the same time, in the conditions of informatization, the role of the use of the information and communication technologies (ICT) increases in respect to the solution of problems of social-psychological adaptation and rehabilitation of children with special needs. ICT nowadays are not simply a tool, they allow for reception of information and forms of communication that influence cogitativity and creative abilities of a personality. Mastering ICT allows children with special needs to create conditions for independent existence and social integration, which considerably enhances their creative potential, while offering a wider set of professions due to inclusion of the hi-tech specialties connected with the manipulation of computers and modern technologies.

Problem statement

Perhaps, it triggered the emergence of a significant amount of studies devoted to the problems of social development and socialization (Becker, 1979; Valeeva & Khakimova, 2015); the essence, the contents and mechanisms of social adaptation of children and youth (Dandy & Cullen, 1992); separate aspects of social and pedagogical (Bespalko, 1989; Karimova & Valeeva, 2014), social and professional (Golovanova, 2004; Salyakhova. & Valeeva, 2015) and esthetic adaptation of a personality (Veyns, 1997); problems of rehabilitation of children in various aspects: medical, psychological, social and pedagogical, all-pedagogical (Hegerty, 1994; Pijl, 1994; Cakir & Kocabas, 2016; Celik, Akin, & Saricam, 2014); use of ICT in the course of training (Zakharova, 2012).

With the exception of the scientific works of the authors, foreign literature studying esthetic education of children with special needs globally, and attempts to adapt scientific research results in the conditions of Russia, was analyzed in the course of the investigation.

From the perspective of the most effective means of esthetic education of children with special needs, computer art stands out as the most perspective direction of development of ICT. It combines considerable cultural and habilitation potential with the professional integrated opportunities of modern ICT. Computer art is understood as an area of activity: a symbiosis of ICT and artistic creativity (Salakhov et al., 2014). The advantage of computer art over alternative means of esthetic activity overcomes the isolation of the child. E-learning complements this development, as it provides the creative broadcast opportunities that provide natural social integration (Nigmatov & Nasibullov, 2015). However, in the practice of esthetic education of children with special needs, the methods of computer art still have not found their most effective application and judgment. There are no scientifically based teaching methods applying computer art as a solution to the problem of esthetic education of children with special needs in the system of cultural and educational institutes. Esthetic education of children is traditionally localized in the most widespread and available cultural institutions – libraries, music and art schools, schools of arts, museums, etc. The unity of the problems of esthetic education facing these establishments and complexity of their solution in the present context stimulates processes of their coordination and cooperation on behalf of its users.

The above-noted circumstances emphasize a pressing need for a more in-depth study of the problem from theoretical-methodological practice-oriented perspective taking into account many contradictions. The main thing that acts as contradiction for the objectively high potential of computer art in esthetic education of children with special needs is its insufficient practical application.

The use of computer art in esthetic education of children with special needs will be effective providing that:

- 1) It's in compliance with the principles of art pedagogics;
- 2) Design of its methodology is based on general scientific (esthetic) categories;
- 3) Consolidations of pedagogical opportunities of the main social institutes, which are carrying out esthetic education.

METHODS

As part of the study the following problems were solved:

1. To give scientific credence to esthetic education of children with special needs according to the principles of art pedagogics.
2. To articulate the concept of systematic esthetic education of children with special needs in the conditions of introduction of modern ICT.
3. To develop the program of esthetic education of children with special needs with the means of computer art.
4. To experimentally prove the efficiency of the use of the program of esthetic education of children with special needs with the means of computer art.

The solution of the objectives was carried out using the following methods:

- theoretical methods: study and analysis of philosophical, pedagogical and psychological scientific and methodical literature on the study (analysis, systematization, classification, generalization and comparison);
- empirical methods: supervision, questioning, testing, pedagogical experiment, and methods of mathematical statistics.

State and public organizations, such as Institute of Philology and cross-cultural Communication (named after Leo Tolstoy), the Institute of Psychology and Education of the Kazan (Volga region) Federal University, Municipal educational Institution of Children's supplementary Education "Kukmour Children's School of Arts" served as the research foundations.

The research was conducted in three main consecutive stages:

Theoretical and methodical literature on the research subject was analyzed and studied, the best pedagogical practices were identified, statutory child protection, the condition of the problem, its representation in pedagogical theory was studied, the condition of social and legal defense of children with special needs in the Republic of Tatarstan and other regions of the Russian Federation was analyzed; the conceptual and scientific framework of the research was defined; methods of experimental study were developed; pedagogical potential of computer art in the solution of the problems of esthetic education of children with special needs was revealed at the first investigation phase.

The research hypothesis was identified, the ascertaining experiment which allowed the revealing of the peculiarities of esthetic education of children with special needs was developed and conducted; adjustment and technologization of the potential use of computer art as a perspective directions of development of ICT in the course of esthetic education of children with special needs was performed; and the basic principles of esthetic education of children with special needs were developed at the second investigation phase.

The research materials were generalized and systematized; the educational experiment on the revealing of peculiarities of esthetic education of children with special needs was conducted at the third investigation phase.

In this work the following criteria of their assessment were defined:

- ability to work with primary sources and scientific literature;
- ability to use theoretical knowledge in the solution of specific pedagogical objectives;
- ability to apply the method of historical analysis of pedagogical facts and ideas;

- ability to express own opinion on a pedagogical problem.

Our research was carried out both at the level of general improvement of the above-noted pedagogical conditions, and at the level of individual teaching and educational work with the student subjects. In the course of the experiment we decided not to form special experimental and control groups. Control groups would be redundant, as we analyzed the esthetic potential of the Children's school of arts, where complementary art education was received by both healthy children, and by children with special needs. We considered isolation of the students from each other to be unethical. Therefore, as the control groups (CG) we designate five groups of the students at the beginning of the experiment, as the experimental groups (EG) – the same groups at its completion.

The experiment was carried out in three stages. At the first stage the ascertaining experiment was carried out through the use of the chosen techniques of primary diagnostics of the students.

RESULTS

Results of the research on the personal block of criteria at the ascertaining stage of the experiment

Ability of empathy is understood as emotional responsiveness, sensitivity and attention to other people, their struggles and their joy. Empathy manifests as an expression of a desire to help and support. Such an attitude implies emerging humanistic values of a personality that facilitates self-realization. Therefore, development of empathy accompanies personal growth, and becomes one of its leading indicators. Empathy enables a person to socialize and not to feel isolated. It is the core of communication. Via the communication process, empathy promotes the balance of interpersonal relations, and primes behavior of a person socially triggered. As a diagnostic technique, we used a questionnaire for detecting the ability for empathy (Mehrabian & Epstein, 1994).

In the course of studying of ability for empathy of the students we allocated four subgroups:

1. High level of empathic tendency.
2. Average level of empathic tendency.
3. Low level of empathic tendency.
4. Very low level of empathic tendency.

At the stage of the ascertaining experiment we received the following indicators (Table 1).

For studying of the level of the students' motivation of success (or failure avoidance) the "Motivation of success and fear of failure" (Bordovskaya & Rean, 2001) questionnaire was used. The questionnaire includes 20 questions, for each answer that coincides with the key the examinee allocates 1 point. After calculation of the points, students' motivational poles on success or failure were defined. Criteria of assessment include the following: from 1 to 7 points – motivation on failure (fear of failure) is diagnosed, from 8 to 13 points – motivational pole is not clearly defined, from 14 to 20 points – motivational pole is aimed at success.

Table 1. Median level of empathy ability of the students at the stage of ascertaining experiment (in %)

Empathy ability level	CG1	CG2	CG3	CG4	CG5
High level	13,3	10	13,3	10	13,3
Average level	19,8	23	23	19,8	23
Low level	36,3	33	36,35	33	36,3
Very low level	30,6	34	27,4	37,2	27,4

Choosing the aforementioned technique, we relied on innate motivation of success as a positive character, as a person aims to achieve constructive results. Personal activity depends on the need of achievement of success, while the motivation of fear of failure refers to a person's desire to avoid unpleasant consequences, or the fear of such, or even more so, the desire to avoid censure or punishment. Therefore, we assumed that the higher the level of motivation of success, the more effective the students' sociocultural adaptation.

The results of the research on the students' motivation of success or fear of failure at the ascertaining stage of the experiment are presented in the table 2. The results received testify that in the CG at the ascertaining stage of the experiment it is impossible to mark out the prevalence of this or that level of the students' motivational tendency.

* In this group of students there was allocated a group of children who have a certain tendency of motivation of success development (i.e. teenagers who gained 12-13 points). If a student gained 8-9 points, a tendency of avoiding failures is more defined. These types of students are relegated to the group which is designated as "Failure avoidance tendency" in the table.

To determine self-assessment level of the students we used a questionnaire (Kovalev, 1991). The students were to chose one of the possible five versions of the answers, each one coded by points according to the following scheme: very often — 4 points; often — 3 points; sometimes — 2 points; seldom — 1 point; never — 0 points. Processing assumes principal sum of the points on all the 32 judgments. The score from 0 to 25 speaks about a high level of self-assessment, when a person, as a rule, appears not to be burdened with "inferiority complex", reacts correctly to the remarks of the others and seldom doubts his actions. The score from 26 to 45 testifies to an average level of self-assessment, when a person seldom suffers from "inferiority complex" and only from time to time defers from the others. The score from 46 to 128 indicates a low level of self-assessment, when a person is touchy about critical remarks, tries to defer from the others and often suffers from "inferiority complex". The results of the research on the level of self-assessment of the students at the ascertaining stage of the experiment are presented in table 3.

These tables show that self-assessment level of more than a half of the students at the ascertaining stage of the experiment is quite low. The level of self-assessment of children with special needs among the selected students is low.

Table 2. The results of the research on the students' level of motivation of success or fear of failure at the ascertaining stage of the experiment (in %)

Motivation character		CG1	CG2	CG3	CG4	CG5
Motivation of success		23	26,3	19,8	23	26,3
Motivational pole is undefined*	Aiming at success tendency	26,3	23	26,3	19,8	23
	Failure avoidance tendency	19,8	19,8	23	26,3	19,8
Motivation of fear of failure		30,9	30,9	30,9	30,9	30,9

Table 3. Students' self-assessment level at the ascertaining stage of the experiment (in %)

Levels	CG1	CG2	CG3	CG4	CG5
High	10	13	10	16,5	13
Average	26,3	29,6	29,6	23,3	26,3
Low	63,7	57,4	60,4	60,2	60,7

Results of the research on the «creativity and culture» block of criteria at the ascertaining stage of the experiment

For diagnostics of emotional adaptability of the students, we used a questionnaire (Fetiskin, Kozlov & Manuylov, 2002). Affirmative or negative answers of the students on the 24 offered statements allowed the revealing of high, average, low and very low levels of adaptability of the students. The results of the diagnostics of emotional adaptability of the students at the ascertaining stage of the experiment are presented in Table 4.

These tables show that the level of emotional adaptability of more than a half of the students at the ascertaining stage of the experiment is low or very low.

By means of a test (Tushkanova, 2001) we analyzed the creative potential of the students who chose one answer from the three offered (a, b, c). For the answer: "a" they got 3 points, "b" — 1 point, "c" — 2 points. Calculation of the points allowed the determination of levels of creative potential of the students: high (49 and more points), normal (from 24 to 48 points) and low (23 and less points). Results of the diagnostics of creative potential of the students at the ascertaining stage of the experiment are presented in Table 5.

These tables show that the level of creative potential of more than half of the students at the ascertaining stage of the experiment is high or normal. It became the basis for the assumption that it is necessary to rely on a rather high level of creative potential of children for development of their esthetic taste.

Results of the research of the social block of criteria at the ascertaining stage of the experiment

For diagnostics of communicative abilities, moral qualities and personal adaptability of the students, we employed a multilevel personal questionnaire, "Adaptability" (Maklakova & Chermyanina, 2014). The "Adaptability" is intended to assess the adaptability of a personality with due regard to the social and psychological, and some psychophysiological characteristics reflecting the generalized features of neuro-psychic and social development. The theoretical concept of adaptation, as a continuous process of active adaptation of a person to constantly changing conditions of the social environment and professional activity, is the basis of the technique.

Table 4. Level of emotional adaptability of the students at the ascertaining stage of the experiment (in %)

Level of adaptability	CG1	CG2	CG3	CG4	CG5
High	6,6	13	10	6,6	13
Average	29,6	26,3	23,3	29,6	26,3
Low	33	36,3	39,6	33	36,3
Very low	30,8	24,4	27,1	30,8	24,4

Table 5. Level of creative potential of the students at the ascertaining stage of the experiment (in %)

Levels	CG1	CG2	CG3	CG4	CG5
High	29,6	26,3	26,3	23,3	29,6
Normal	57,2	63,7	60,5	60,2	60,4
Low	13,2	10	13,2	16,5	10

Efficiency of adaptation, in many respects, depends on the manner in which really a person perceives himself and his social bonds, commensurate the requirements with his opportunities, and realizes the motives of his behavior. The distorted or insufficiently developed idea of a person leads to an adaptation violation that can further result in conflict, violation of relationships, decrease of working capacity, and deterioration of his wellbeing.

The questionnaire contains 165 questions and has the following scales: "reliability"; "psychological stability"; "communicative abilities"; "moral standardization"; "personal adaptability". We considered the last three scales in our research. *Personal adaptability* is the most important integrative characteristic of mental development. The characteristic of personal adaptability can be received, having estimated behavioral regulation, communicative abilities and level of moral standardization. *Behavioral regulation* is the concept characterizing ability of a person to regulate his interaction with the activity environment. Basic elements of behavioral regulation are:

- self-assessment;
- level of neuro-psychic stability (mechanisms of psychological protection);
- presence of social approval (social support) from surrounding people.

All the allocated structural elements aren't fundamental in regulation of behavior. They only reflect a ratio of requirements, motives, emotional background of mood, consciousness, "self-construction", etc. The system of regulation is a complex, hierarchical education, and integration of all its levels into a uniform complex provides stability of the process of regulation of behavior.

Communicative qualities (communicative potential) is a component of personal adaptability. As a person is practically always in a social environment, his activity is interfaced to ability to build relationships with other people. Communicative opportunities (or ability to reach contact and mutual understanding with the people around) vary from person to person. They are defined by experience, communication requirements, and conflict level.

Moral standardization provides an individual with the ability to adequately perceive the certain social role offered him. The questions characterizing the level of moral standardization of an individual in this test reflect two main components of the process of socialization: perception of moral standards of behavior; and relation to the requirements of social environment.

The students answered questions concerning various features of their health, behavior, and character and they chose responses "yes" or "no". The processing of these results was carried out on "keys" corresponding to the scales: "reliability", "psychological stability", "communicative abilities", "moral standardization", and "personal adaptability". When processing results, the number of the answers which coincided with the "key" was considered. Each coincidence to the "key" was estimated at one "crude" point. The scale of reliability estimates the degree of objectivity of answers. In case of the total of "crude" points exceeding 10, we considered the obtained data doubtful. Results of the diagnostics of personal adaptability of the students at the ascertaining stage of the experiment are presented in table 6.

Table 6. Level of personal adaptability of the students at the ascertaining stage of the experiment (in %)

Level of adaptability	CG1	CG2	CG3	CG4	CG5
High and normal	13,2	10	13,2	16,5	10
Satisfactory	29,6	26,3	26,3	23,3	29,6
Low	57,2	63,7	60,5	60,2	60,4

Results of the diagnostics of personal adaptability of the students at the ascertaining stage of the experiment demonstrated that more than a half of the students have a low or satisfactory level of adaptability.

Thus, all the results received at the ascertaining stage of the experiment were carefully analyzed, and formed the basis of the program of the constructive experiment.

At the constructive stage of the experiment the pedagogical technique of realization of pedagogical potential of computer art in esthetic education of children with special needs was evaluated.

In this research process of esthetic education, we considered a stage-by-stage inclusion and creative familiarizing of a child with special needs to the world of culture and adaptation to the social structures and standards of the environment.

The students of the art department in an academic school who studied drawing, painting, composition, arts and crafts, history of arts, computer graphics during four years took part in the experiment. The total examinees at the stage of the constructive experiment was 302 students, including 60 children with special needs, two librarians, three teachers, and 198 parents. Among the children with special needs, there were: deaf, acoustically challenged, children with alleluia, and children with musculoskeletal and emotional-volitional disorders.

While carrying out the experiment, the authors were guided by the basic principles of scientific and pedagogical research: objectivity, primacy of the facts, secondariness of generalization, specificity of truth, an integrated approach to the research, accounting for a personal factor in pedagogical research, etc.

The constructive experiment was carried out in consideration of the complex of methods of the research allowing the provision of evidential, scientific and objective testing of the hypothesis.

For the research of the personal block of criteria the technique of diagnostics of ability to empathy (Mehrabian & Epstein, 1994), a questionnaire "Motivation of success and fear of failure" (Bordovskaya & Rean, 2001), a technique of determination of level of self-assessment was used (Kovalyov, 1991). Studying of the «creativity and culture» block of criteria was carried out with the help of a questionnaire of emotional adaptability of the students (Fetiskin, Kozlov & Manuylov, 2002); by means of a test (Tushkanova, 2001) the creative potential of the students was diagnosed; results of the research of the social block of criteria were received on a multilevel personal questionnaire "Adaptability" (Maklakova & Chermyanina, 2014).

Results of the control poll of the students on a multilevel personal questionnaire "Adaptability" (Maklakova and Chermyanina, 2014) demonstrate that in EG growth of indicators on each diagnostic scale is noted. However, the changing process of the measured indicators of the students was inconsistent. The considerable increment in the results is observed in EG on a scale "communicative abilities": the number of the students with a low level of communicative abilities in EG remained on average 6,6, % against 29,6% at the beginning of the experiment; the number of the students with a high level of communicative abilities in EG increased on average by 33%. Positive dynamics is both noted on a scale "behavioural regulation": if at the beginning of the experiment a high level was shown by 13,2% of the students, at the end of the experiment at the high level there were 26,3% of the examined. At a low level there were 9,9% of the students against 39,6% at the stage of the ascertaining experiment. Taking into account the received results, we consider significant increase of the level of self-actualization of the students of EG during the training in the experimental mode, it is an indicator of efficiency of pedagogical efforts in personal development of the students. On a scale referred to as "moral standartization", where perception of moral standards of behaviour and relation to the requirements of the social environment is diagnosed, the changes are also

positive. However, transition of the students from a low to a high level constitutes a mere 6,6%. Nevertheless, on the integrated indicator, "The personal adaptability" that we received yielded quite good positive dynamics (Table 7) at the constructive stage of the experiment.

According to the results of the diagnostics, we observe dynamics of the indicators on each criterion of efficiency of Fig. 1.

The remedial and developmental teaching of the children with special needs while taking advantage of opportunities involving computer art demonstrated positive influence on the development of communicative abilities of the children, the level of their self-actualization, personal adaptability, positive dynamics on a scale "behavioral regulation", and also, notably, it promoted creation of the humanistic integrative atmosphere at Children's school of arts.

The proof of efficiency of the carried-out experimental work is the achievements of the talented children with special needs, participants of the program "I learn the wonderful world: fundamentals of computer art ", who became winners of interregional, All-Russian and international competitions of creative works on computer graphics.

Thus, results of the control stage of the experiment proved that the objectives are reached.

The course of the research showed that the possibilities of art in the context of adaptation of children with special needs correlate with granting unlimited opportunities for self-expression and self-realization both in the course of creativity, and in the course of self-perception. Creation by a child of creativity products facilitates the communication process and the building of relationships. Moreover, others' interest in the results of creativity of a child (drawings, hand-made articles, singing, dancing etc.), acceptance of the products of a child's art activity raises self-assessment and self-acceptance. It also provides the solution to the major problem – adaptation by the child through art and related activity in the macrosocial environment, and as a result, spiritual and moral readiness for independent life in the future.

Art is the source of new positive experiences for a child with special needs; new positive images arise in a child; that is, new creative needs and ways of their satisfaction in some art form. Satisfaction of esthetic needs, activation of potential of a child with special needs in artistic activities and creativity represents a realization of social adaptation by the means of art. All of the art forms influence the behavior of a child with special needs, help to regulate his communicative and emotional problems, and promote their correction. Further, as practice shows, the habilitation effect of art is that a child with special needs becomes insulated from negative experiences

Table 7. Personal adaptability level dynamics at the constructive stage of the (in %)

Adaptability level	CG1/ EG1	CG2 / EG2	CG3 / EG3	CG / EG4	CG5 / EG5
High and normal	13,2 /36,3	10 /39,6	13,2 / 42,9	16,5 / 46,2	10 / 46,2
Satisfactory	29,6 / 33	26,3 / 33	26,3 / 36,3	23,3 /39,6	29,6 /42,9
Low	57,2 /30,7	63,7 / 27,4	60,5 / 20,8	60,2 /14,2	60,4 / 10,9

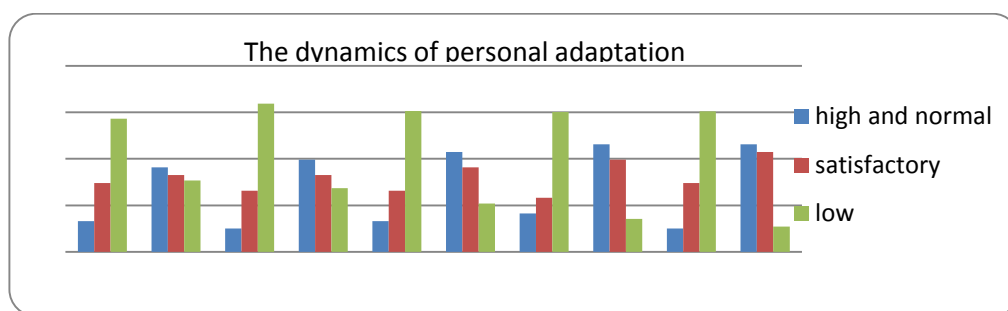


Figure 1. Personal adaptability dynamics of the students at the ascertaining stage of the experiment (in %)

Having analyzed in this article the essence and features of esthetic education of children with special needs, and the major principles of its organization, we came to the conclusion that it is necessary to consider artistic development not as an end in itself, but as a means of providing a matured physically disabled person with a higher possible self-sufficiency and independence possibilities. And, in this context, the social adaptation orientation of educational activity allows the overcoming of or considerably reduction of "social loss" of the children with special needs and development of their psychological readiness to life in the environment (Testerman, 1996). Thus, the social adaptational orientation of art pedagogics in teaching children with special needs has to be provided with the corresponding adaptalizers - development of certain skills and habits like elementary communicative, household skills as well as complex social skills in children with special needs in the most acceptable manner for them (Forman, 1993).

Esthetic education of children with special needs is directed onto creation of an atmosphere of productive creative cooperation and psychological comfort of a child, possibility of an individual educational and creative route in the active mode of interaction (Aksenova, 1997).

Actualization of esthetic education of children with special needs is caused by the need of humanization in all of the spheres of public life, on the one hand, and the steady growth of this category of the population, on the other hand. The outlined tendency of priority of formation of an intellectual component at the expense of an esthetic is fraught with decrease in attention to spiritual and moral one (Bezzubik, 2009).

DISCUSSIONS

The established practice of esthetic education of children, despite long-term history and existence of approved methods and forms, demands adaptation to the modern conditions, technologies, and resources. In the conditions of limited opportunities of the environment and a lack of specialists, efficiency of esthetic education of children will be defined by the ability to integrate cultural institutions and educations (Egorova, 2000).

Advantages of computer art as means of esthetic education of children consist in its binarity, allowing it to develop artistic taste and master information technologies which promote socialization of children with special needs.

CONCLUSIONS

Prospects of further research in the field of esthetic education of children with special needs with the means of computer art consist in the development of the particular-oriented techniques, professionalizing of specialists in art pedagogics,

specification of optimum conditions of esthetic education and art activity.

This article is addressed to the students of higher school and to the teachers for development of special courses intended to the students, listeners of Institutions of further training.

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