Sociocultural adaptation of disabled children by means of computer art graphics

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Abstract. Characteristics, criteria and indicators of sociocultural adaptation of disabled children are considered in the paper; pedagogical potential of computer art graphics as an effective adapter for sociocultural adaptation of disabled children is revealed. The authors develop and carry out an experimental approbation of pedagogical technology for sociocultural adaptation of disabled children by means of computer art graphics.


Keywords: sociocultural adaptation, disabled children, computer art graphics, cultural and abilitation potential of the arts, pedagogical technology.

Introduction

The modern Russia is marked by the development of humanization processes in social relations, the transition to principles of social tolerance, the recognition and respect of rights and dignity of every individual, regardless of their potential or beliefs. However, the social and economic reforms result in a deeper social differentiation; new forms of social inequality emerge, thus creating serious challenges in realizing social adaptation processes for the younger generation, and, in particular, for those groups in which this process has already been difficult because of some external circumstances. First of all, this concerns disabled or physically challenged children. Changes in the modern society often cause failures in the social integration and adaptation of such children, and create difficulties for those individuals in organizing their own lives against the background of social educational and abilitation technologies used with low efficiency. Educational institutions, as numerous investigations confirm, currently are not able to confront these negative factors to the full extent. Meanwhile, a growing number of disabled children on the one hand, and the humanization of public life, a wide-spread thinking about the value of a growing personality, the necessity to protect his or her rights, on the other hand, maximize the importance of social rehabilitation and social cultural activity aimed at giving social and educational background, better adaption for life, and giving disabled children a chance to gain experience of social orientation, ethics, cultural and social behavior. All these define a considerable importance of issues related to social adaptation of disabled children and their qualitative integration to socially important relations.

Art is essential for carrying out this process. In terms of adaptation, the potential of arts for disabled children is because this can be a source of new positive experience for them. Art can be used as a support to realize their creative needs by providing unlimited opportunities for self-expression and self-realization, both during the creative process and in understanding of their own ego. A child, by creating his own artwork products, can easier communicate and build connections with others.

At the same time, under modern conditions of the revolution in information and technology, we see a growing importance of information technologies in their application to issues of social and psychological adaptation, and rehabilitation of disabled children. Technical features of modern personal computers allow disabled children to use these machines. Computers are widely used in various spheres of human activity, and learning how to work on computers creates for disable children an environment for independent existence and social integration, allows to provide a considerably wider choice of occupational options due to the inclusion of professions in high technology field, associated with computer and advanced technology applications.

Computer art graphics is one of the best means, favorable for the development of disabled children and their sociocultural adaptation, that combine in itself a massive cultural and abilitation potential of the arts with the socially and professionally integrated potential of modern information and communications technologies. The advantage of computer art graphics, if compared with other instruments of sociocultural adaptation, consists in the possibility to randomly change a value, color, shape and texture in artistic objects with similar features and see how the parameters of these objects are being affected by these changes. In this respect,
Research methods

Pursuant to the logics of this study and for the purpose of solving the targeted problem, we used the following methods: theoretical study of philosophic, sociological and psycho-pedagogical knowledge base (analysis, structuring, classification, generalization and comparison); study and generalization of advanced educational experience; pedagogical study; survey and diagnostics methods (surveys, tests, conversations); auto evaluation; expert reviews; study of artwork created by targeted students, pedagogical experiment, mathematical statistics methods. In experimental work, we used pedagogically and psychologically proven methods, the choice of which was dictated by their relevance to the subject, informative value, compaction and simplicity when processing factual findings. For studying the personal criteria cluster, we used the empathic ability diagnostic method offered by A. Megrabyan and N. Epstein [15, 412], the “Success motivation and fear of failure” inventory by A.A. Rean [16, 306], and the auto-evaluation method proposed by S.V. Kovalyov [17, 223]. The study of the cultural and creative criteria cluster was conducted according to the questionnaire by N.P. Fetiskin, V.V. Kozlov, G.M. Manuylov [15, 387] used to define the emotionally pragmatic adaptability of students; the test offered by O.I. Tushkanova helped us to diagnose students’ creative potential; findings for the social criteria cluster were obtained by using the Adaptability, a multi-level personality questionnaire developed by A.G. Maklakov and S.V. Chermyanin [18, 282].

Basic section

The problem of sociocultural adaptation for disabled children by means of computer art graphics that motivated us to conduct this study is caused by a reasonable necessity to facilitate their socialization in the market environment through teaching them the responsibility for their own welfare, and providing their social mobility in the society.

Developing the framework of categories for our research required to analyze a number of associated concepts and notions such as “adaptation”, “social adaptation”, “sociocultural adaptation” that exist in modern scientific works. The analysis of these concepts, as they appear in modern research materials, provided the authors with the possibility to define the sociocultural adaption of disabled children as a process of building optimal mutual relationships between the personality of a disabled child and the sociocultural environment that, due to specifics of such children, require a special pedagogical guiding, and that can provide a quality of life, which is adequate to modern standards of living in the society, that can help to achieve his or her purposes, form a sense of self-esteem and allow to feel his or her importance.

Some typical features in sociocultural adaptation of disabled children were revealed in the study:

- presence of numerous social and psychological barriers generated by deprivate
conditions and experienced by disabled children in the process of developing their personality and individualism;
- inseparable combination of common trends in sociocultural adaptation of disabled children with typological and individual differences of their socialization and enculturation;
- priority importance for disabled children to develop self-confidence and aptness to perform various types of activities with the help of others.

Sociocultural adaptation process and its stages typically happen within a specific “trinity” framework: personality, culture and society. Personality is associated with the development of adequate self-evaluation and positive motivation, acceptance of personal responsibility, new perception about personal experience and life prospects; culture reflects the appearance of cultural competence, creative self-expression and creative self-development, acceptance of creative approach to life and cultural values; the society means the formation of communicative competence, self-actualization in activity, acceptance of social responsibility, acquisition of social freedom and tolerance as a social quality.

Hence, coming from various approaches to defining the criteria of sociocultural adaptability of disabled children (M.S. Berezhnaya [19, 96], A.N. Zhymyrikov [20, 119], L.L. Shpak [21, 64]), we concluded to separate the following criteria clusters in this field: personal (including empathy, adequate self-evaluation, expressed success motivation, and adjustment for self-actualization), culturally creative (connected with creativity, creative activity, acceptance of one’s own culture and cultural values), and social (presence of expressed communicative properties, emotional and empathetic relations in children’s environment; cooperative communication strategy; acceptance and adherence of moral standards and values).

Solving the next task of this research was concerned with the definition of referenced values and goals in providing support for sociocultural adaptation of disabled children. For this purpose, we validated the following principles of sociocultural adaptation:
- abilitation principle that supposes orientation towards the fullest development of potential in disabled children and consider typological and individual peculiarities of their development;
- integration principle that requires the involvement of disabled children in cognitive activity of their peers not experiencing health problems, in educational and sociocultural life;
- facilitation principle that allows to provide pedagogical assistance to disabled children in order to establish their personality, specialization and identity formation;
- self-development principle that provides such children with the possibility to progress one’s development relative to gaining social experience, involvement in public life, etc.);
- principle of accord between traditional and innovative pedagogical methods and means for educational work with disabled children.

Mechanisms of sociocultural adaptation are important for our study as they help us to determine technological and practical aspects in educational support for the process of sociocultural adaptation of disabled children. Coming from the social adaptation theory (L.V. Korel [5, 324]), we defined an algorithm for its empirical investigation and modeling. The point of this algorithm is that, first of all, it is necessary to define a principal cluster in the adaptation mechanism, its supporting frame used to create adaptation, i.e. adapter. It is reasonable to make emphasis on adaptizers or, in other words, aggregation of factors, conditions, regulators that increase adaptability, help to unlock the adaptive potential and speed up the process of adaption. Further, in order to define an adaptation stage, it is necessary to single out performance indicators that correspond to each of them.

In our study we specify the computer art graphics as a systematic cluster (adapter) in the process of sociocultural adaptation of disabled children. Defining it as an adapter, we were coming from the following considerations in terms of pedagogical potential of computer art graphics in the sociocultural adaptation process for disabled children: massive impact from using computers in everyday life of children on their upbringing and perception of the outside world; the desire and ability of children to live in open society; a wide range of computer applications in education/bringing-up process when educating and bringing up children; unlimited choice of options when using computer art graphics for educational purposes; possibility to use new information technologies in finding solutions to social and psychological adaptation and rehabilitation of disabled children; fulfillment of two functional targets in artistic and esthetic education of children – developing a sense of beauty, esthetic taste, creative talents, and also using computer art graphics for correctional purposes in overall development of children; individual programs for remedial teaching; rate and method of learning can be chosen individually for every student, and hence, giving them opportunity for independent productive activity.
The research was made during the period of 16 years, from 1994 to 2010, was divided in three stages and covered several municipal educational institutions for supplementary education (school of art for children) in Kukmor, Zainsk, Rybnaya Sloboda of Tatarstan, and in Vyatskiye Polyany of Kirov region. The ascertaining stage targeted 484 students, 28 teachers working in the supplementary education system; the formative stage targeted 302 students, aged 8 to 15, from the Kukmor School of Art, including 60 disabled children; 5 teachers working in the supplementary education system, 198 parents. The category with disabled children included the deaf or acoustically challenged subjects, those with speech, locomotive system or emotional-volitional disorders. When conducting the ascertaining experiment in the schools in Kukmor, Zainsk, Rybnaya Sloboda (Republic of Tatarstan), and in Vyatskiye Polyany (Kirov region), we specified and substantiated educational conditions that can be instrumental in unlocking the adaptive potential of disabled children:

- creating an integrated environment for education and development with arts as a major focus. If realized, this condition can promote forming a comprehensive education and communicative environment with the purpose of social adjustment and orientation training for disabled children;

- integrated use of the potential provided by art-pedagogics in education process, including native applied and decorative arts, and modern information technologies. If realized, this condition can provide a comfort environment for developing a creative potential, communication skills and social independence of physically challenged children;

- overcoming difficulties relative to social adaptation of disabled children through taking into account their special interests and needs, freedom of choice and flexibility in forms and methods of creative self-expression visual arts. If realized, this condition allows us to challenge existing disabilities and will be beneficial in improving self-evaluation levels, self-respect, striving for self-determination, forming the capability to choose one’s attitudes.

Proceeding from this, and based on the abovementioned educational conditions, we carried out a formative experiment that was conducted with due regard to the suite of research methods, allowing to provide a sufficient evidence base and scientifically proven testing of hypothesis, which was made in the beginning of this study. Pilot testing was performed in natural environment, without any breaks in education/bringing-up process on the base of the local school of art for children in Kukmorks, Tatarstan. The purpose of this experiment was to prove that creating and realizing of proven pedagogical conditions of sociocultural abilitation for disabled children with the use of adaptation potential in visual arts, provided by modern computer technologies, can facilitate a successful adaptation of such individuals in sociocultural environment. The found conditions and pedagogical technology were tested for efficiency at several interconnected and overlaid stages from 1994 to 2010. The experiments included diagnostics for the start, middle and finish stages.

Our study was accomplished both on the level of general progress in the whole complex of pedagogical conditions mentioned above and on the level of individual education/bringing-up process with the students. During our experiments, we decided not to form subject-oriented experimental and control groups, because, in this study, we were carrying out a monographic research of adaptation potential of integrated extension within the education facility, where the supplementary education was delivered both to healthy and physically challenged students. Finding any ways to separate the students in groups and viewing them beyond this facility was believed to be ethically inappropriate. For this reason, at the beginning of our experiment, we consider 5 targeted groups as control groups (CG), while experimental groups (EG) were the same groups at the finishing stage of experimental work.

The experiment involved those students, who attended art classes and studied drawing, painting, composition, decorative and applied arts, history of arts and computer graphics for 4 years. During the formative stage, the total number of students was 302 that included 60 disabled children; 5 teachers working in the supplementary education system, 198 parents. Among disabled children, there were the deaf, acoustically challenged, subjects with disorders of speech, locomotive system or emotional-volitional sphere. The formative experiment that included approbation of the authors’ technology in realizing the educational potential of computer-assisted art graphics for the purpose of sociocultural adaptation of disabled children took place in the period from 2003 to 2010. CG1 comprised of those students, who were attending classes in 2003-2006 (60 children); CG2 – in 2004-2007 (57 children); CG3 – in 2005-2008 (60 children); CG4 – in 2006-2009 (65 children); CG5 – in 2007-2010 (60 children).

The diagnostic findings for personal adaptation potential of students at the ascertaining stage of the experiment showed that more than a half of the students are at low or satisfactory levels of adaptability development. All findings received on the ascertaining stage of the experiment were
analyzed and provided the basis for the formative experiment.

The formative experiment stage (2003-2010) included testing our pedagogical technology of developing the educational potential of computer art graphic and pedagogical conditions for sociocultural adaptation of disabled children.

On the first stage of learning graphic programs, the subjects were asked to create their drawings with finished shapes. For example, they were expected to use rectangular shapes in the “Magic town” theme, the “Our Universe” session came with circular and round-shaped forms, whereas during the “The Snow Queen castle” lesson they were offered to use straight and free lines. The second stage was intended for learning some basic principles of composition and the students were asked to create still lives, plot compositions on various themes that revealed the outside world experiences. During this stage, special attention was paid to learning ornament patterns that can be naturally integrated with functions of graphics programs. The third stage was aimed at developing creative projects associated with different design trends – graphics (developing a corporate style for the school of art, electronic versions of art exhibitions, etc.), landscape (making a landscape project for the schoolyard, garden, etc.), fashion design (making sketches of suites or theme dedicated costumes for some special events at school, for puppet or fashion shows, etc.), interior design (developing interiors of sportive or educational facilities for children), etc.

The formative experiment was followed by the monitoring survey with the use of methods from the ascertaining stage (EG1 – 2006, EG2 – 2007, EG3 – 2008, EG4 – 2009, EG5 – 2010).

It was found that a school of art for children can be massively supportive, to the best of its advantage, in developing creative potential, social skills and social independence in disabled children through their multiform, creative, personally and publically important activity that may result in acquisition of special skills for every student. Such educational institutions are ideal for creating a comfortable environment where we can protect and improve child welfare, where students can assert themselves within the framework of socially accepted behavior, achieve a positive social status in front of their peers, where they can develop an optimistic perception of the world, learn how to make right choices, and where they can be taught principles of self-education as key conditions for successful socialization and personal realization in the future.

Based on diagnostic findings, we received a positive dynamics of indicators across every efficiency criterion. In fact, this trend was revealed, in general, through dynamics of our integrated indicator – Personal adaptation potential (PAP) (Fig. 1).

Diagram: Dynamics of personal adaptation potential (PAP) in students at the control stage (in %).

The results derived from our experiment prove the fact of improvement in adaption efficiency of disabled children if such adaption occurs under specified educational conditions. Children with very different disorders who attend art classes show a considerable improvement in their psychophysical condition and better social skills. Correction pedagogic efforts with such children, supplemented with computer art graphics applications, have proven to be fruitful in developing communication skills in students, their self-actualization need, and individual adaptation potential, positive dynamics scaled as “behavioral control”, and, equally important, such activities were promoting a humanist integrative atmosphere inside the school of art.

The efficiency of experimental work can be proven with the achievements of young talents, physically challenged students who learned visual arts in our targeted educational facility. Some of them have become winners at interregional, all-Russian and international contests in computer graphics: E. Basyrova, A. Lutsenko, A. Nigmatzyanova, A. Salimgarayev, D. Khaliullin, B. Yusupov and others.

Hence, the results obtained during the final stage of our experiment ascertain that the assembly of given pedagogical conditions provides an efficient sociocultural adaptation of disabled children by means of computer-assisted art graphics.

We used t-test method for dependent samples in order to define the statistical significance of measured values. Using Student’s t-test brings us to the conclusion that there are significant differences between average values of all adaptability elements before and after the experiment in all test groups.

Research results

1. “Sociocultural adaptation of disabled children” is defined as a process of building optimal mutual relationships between the personality of a
disabled child and the sociocultural environment that, due to specifics of such children, require a special pedagogical guiding, and that can provide a quality of life, which is adequate to modern standards of living in the society, that can help to achieve his or her purposes, form a sense of self-esteem and allow to feel his or her importance.

2. Some typical features in sociocultural adaptation of disabled children are revealed: presence of numerous social and psychological barriers generated by deprivate conditions and experienced by disabled children in the process of developing their personality and individualism; inseparable combination of common trends in sociocultural adaptation of disabled children with typological and individual differences of their socialization and enculturation; priority importance for disabled children to develop self-confidence and aptness to perform various types of activities with the help of others.

3. It has been proved that referenced values and goals in providing support for sociocultural adaptation of disabled children are defined by the following principles of sociocultural adaptation: abilitation principle (orientation towards the fullest development of potential in disabled children and consideration for typological and individual peculiarities of their development); integration principle (involvement of disabled children in cognitive activity of their peers not experiencing health problems, in educational and sociocultural life); facilitation principle (pedagogical assistance to disable children in order to establish their personality, specialization and identity formation); self-development principle (providing such children with the possibility to progress one’s development relative to gaining social experience, involvement in public life, etc.); principle of accord between traditional and innovative pedagogical methods and means for educational work with disabled children.

4. Pedagogical potential of computer art graphics as an effective adapter for sociocultural adaptation of disabled children within the educational environment of children’s school of art is revealed.

5. Educational conditions of sociocultural adaptation for disabled children as adaptizers of this process are revealed and experimentally verified: creating an integrated environment for education and development with arts as a major focus, while the main objective is forming a comprehensive education and communicative environment with the purpose of social adjustment and orientation training for disabled children; integrated use of the potential provided by art-pedagogics in education process, including native applied and decorative arts, and modern information technologies; overcoming difficulties relative to social adaptation of disabled children through taking into account their special interests and needs, freedom of choice and flexibility in forms and methods of creative self-expression visual arts. If realized, this condition allows us to challenge existing disabilities and will be beneficial in improving self-evaluation levels, self-respect, striving for self-determination, forming the capability to choose one’s attitudes.

6. “Basics of computer graphics”, a prognostically oriented educational program, has been developed and realized. This program is intended for developing creativity and educating disabled children at educational facilities such as schools of art; methodological support for this program has been prepared.

Conclusions

1. Basic features of sociocultural adaption of disabled children, determining the content of pedagogical support for this process, are specified.

2. It has been proven that computer art graphics applications can enhance traditional opportunities of art therapy; it creates a variety of choice in methodology, expands self-actualization, and allows understanding other people and expressing one’s true emotions. It helps to develop technical skills in operating various equipment, to gain professional cross-cutting skills, and to improve the sense of aesthetic beauty. It also serves as a cure against stresses or as a relief from the feeling of desolation and the inferiority complex. For this reason, computer art graphics applications are an effective adaptor in the process of sociocultural adaptation for disabled children.

3. Two clusters are defined in the structure of educational support for the process of sociocultural adaptation of disabled children: these are value-purpose-oriented and technology clusters. The value-purpose-oriented cluster features principles of sociocultural adaptation of disabled children (abilitation, integration, facilitation, self-development, harmony between traditional and innovative educational methods, applicable for disabled children). The technology cluster includes educational technology and pedagogical conditions for sociocultural adaptation of disabled children by means of computer-assisted art graphics, which is an adapter in this process.

4. The efficiency of the technology cluster developed in the research process for educational support in sociocultural adaptation of disabled children by means of computer art graphics was experimentally proved and substantiated in this study.

5. Prospects of future research in the field of pedagogical support for the process of sociocultural
adaptation of disabled children can be associated with integration of basic and supplementary education designed for disabled children, with reviewing the potential in other types of arts, with further training of education professionals in these applications; and with the use of computer-assisted art graphics as an efficient adapter for sociocultural adaptation of children at other types of educational facilities.

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References