
EcoArt Therapy as a Factor of Students' Environmental Consciousness Development

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Abstract

Relevance of the research: The relevance of the problem in question is determined by the need to study, build and develop environmental consciousness, its levels, and components, by using such an innovative method as EcoArt Therapy. The research objective: To study the main features and patterns of development of students' environmental consciousness by means of EcoArt Therapy approach. The research objective is to identify the effectiveness of the influence of EcoArt Therapy methods on building a person's environmental consciousness and its structural components such as knowledge, attitude, mindset, and intention, by theoretical research and experimental study. The research methods: The leading research method for this issue was the experimental one, which allowed making a qualitative selection of EcoArt Therapy methods affecting the development of students' environmental consciousness. The research results: The paper provides a thorough and detailed analysis of the concept of EcoArt Therapy. The fundamentals and features of the EcoArt Therapy approach were highlighted. The authors paid special attention to the development of exercises and the selection of materials for doing them effectively in order to develop students' environmental consciousness and its structural components. It is made clear that the EcoArt Therapy approach significantly affects the level of development of such structural components of environmental consciousness as environmental attitude and environmental intention, which is the best indicator for further environmentally-oriented activities. Practical relevance: The data in hand can be used in pedagogy, applied psychology, environmental psychology, sociology, as well as for further theoretical development of this topic.

Keywords: students, EcoArt Therapy, EcoArt Therapy approach, environmental consciousness

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INTRODUCTION

Due to the global ecological crisis, it is necessary to find out what kind of relationship between human and nature might be considered harmonious, how do the human activities affect the environment, and to point out why environmental culture and environmental education are so important particularly now (Cherdymova 2011, Khapai 2009, Moiseev 1998a, 1998b, Suravegina 2000).

Therefore, the problem of studying, building and development of environmental consciousness, its levels, and components, characterized by a new type of "human - nature", "human - human" and "human - society" relations is becoming increasingly urgent. Many Russian psychologists have been involved in studying the issue of environmental consciousness building. Markovich (1999, 2001) considers issues of protection and improvement of human habitat,

questions of environmental awareness, education and environmental culture of the society. They study such aspect of environmental consciousness as vocational specificity (Cherdymova 2010, Doctorov et al. 1992, Firsov 1992, Maklyarsky 1995, Safronov 1992). The qualitative characteristics of the environmental consciousness, the causes, and factors contributing to the passivity of the environmental consciousness of Russians are studied in the works of many authors (Andreeva 1990, Kochergin et al. 1987, Markov 1987, Rozhkina 1990, Vashchenko et al. 1990, Vasilyev 1987).

At every historical period of its development, the society had its own specific way of interaction with the environment. The results of the study of this interaction in the historical perspective are presented in the monographs of scholars (Medvedev and Aldasheva 2001, Park 2002, Yasvin, 2000).

The attractiveness of the EcoArt Therapy method for a modern human is that this method mainly uses nonverbal ways of self-expression and communication. The right hemisphere of the brain is actively involved in the process of creativity. But modern civilization involves mainly verbal communication system and the left - "logical" – hemisphere of the brain. EcoArt Therapy appeals to internal, self-healing resources of an individual, closely connected with his or her creative potential (Babicheva 2013, Babina 2013, Cherdymova et al. 2013).

The ability and equally the need to unfold one's inner world is a distinctive characteristic of a human. This feature makes it possible to actively process incoming information (Kopytin 2002, Makarov 2000) so that the psyche of an individual develops various adaptive mechanisms (Burno 1989, Zinkevich-Yevstigneeva 1998). They allow a person to adapt better to life, be more successful in an ever-changing world. Hence, creating conditions for personal growth, "construction" of a person with help of natural elements, as well as the activities that bring harmony to human life — care for pets, home decorating, doing fancywork and creating art pieces — is the most natural approach.

A human is part of nature, as well, and intentionally organized interaction with elements of the natural system should obviously lead to a positive result.

Generally, creative works include nature and ways of interacting with it. EcoArt Therapy offers a child to express his emotions and feelings with the help of sculpting, drawing, construction from natural materials.

A person acquires his integrity, uniqueness, and individuality through imagery experience. Other forms of art can also be used: bodily improvisations, theatrical performances, literary activity.

EcoArt Therapy arose following the integration of ecopsychological and art therapy approaches. The ecopsychological approach considers the Human-Nature system as a holistic, joint subject implementing the general principles of development in its evolvement and thus capable of self-development through the implementation of: the principle of eco-friendliness, the principle of mental development of a person in the course of his education in the context of the Human - Environment system. EcoArt Therapy approach is an interdisciplinary method that combines various branches of knowledge — psychology, medicine, pedagogy, culture studies, etc. This approach is related to the creation of visual imagery and involves interaction between the author of an artwork, the artwork itself and a psychotherapist. EcoArt Therapy approach is aimed at the awareness of unconscious mental material, that is facilitated by the richness of artistic symbols and metaphors. This, in turn, allows for a more in-depth study of the physiological reactions of the body in response to the exposure to art in any of its interpretation. This interest is also determined by the possibility of using EcoArt Therapy as a treatment and correction tool ensuring harmonization of relations in the triad of Human - Nature - Society: stress and fatigue relief, bringing up emotional tone and development of aesthetic needs through objects of nature.

The main functions of EcoArt Therapy are: cathartic (purification, relief from negative conditions associated with natural objects and phenomena); regulatory (removal of neuro-mental tension, regulation of psychosomatic processes, modeling of positive psycho-emotional condition in relation to natural objects or with the help of natural objects); communicative and reflexive (providing correction of communication disorders in the Human-Human and Human-Nature systems, building the appropriate interaction between a human being and natural objects, shaping of adequate self-esteem) (Cherdymova et al. 2013, Babina 2013, Babicheva 2013). EcoArt Therapy lessons can be considered as one of the innovative forms of tutors' and teachers' work to develop environmental consciousness within the limits of possible time spent for it. All EcoArt Therapy methods for building the environmental consciousness are based on the assumption that every time a person draws, sculpts, writes a poem, composes a fairy tale, dances, etc. without thinking about the

artistic value of his pieces of work, the created imageries reflect his Inner Self and, consequently, the relationship of a human with the environment gets harmonized (Babicheva 2013, Babina 2013, Cherdymova et al. 2013).

Currently, the most popular types of EcoArt Therapy are the following: Visual Art therapy and Music therapy. EcoArt Therapy techniques are insight-oriented and their main task is to achieve insight. There are a lot of exercises and techniques of EcoArt Therapy, but all of them are united by the opportunity to look at one's creative work as if in a mirror. The keynote of all tasks comprises feelings, sensations, and state of personality through interaction with natural objects (phenomena) and the environment. Each exercise resets the person (in our case, the child) to the essence, to the

roots, to the root causes, and to the congruous relations with Nature as a whole, by removing masks and barriers.

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MATERIALS AND METHODS

The Research Methods

The following methods were used in the course of the research:

1. Methods of EcoArt Therapy (see **Table 1**).

Table 1. Exercises used in EcoArt Therapy

Topic & content of the lesson	Work mode & required materials
<i>A painted fairy tale</i> comprises working with coloured semolina, sand, salt; builds a positive emotional background and atmosphere of trust, develops communicative skills and creative imagination	Coloured semolina, sand, salt, cardboard, white glue, calm music with the sounds of nature (sea splash, water purling, singing of birds, etc.);
<i>Joy</i> — working with coloured semolina, natural materials; develops emotions, communicative skills, creative imagination	Coloured semolina, plant leaves, cones, acorns, etc., cardboard, white glue, Dance of the Sugar Plum Fairy, The Nutcracker ballet by P. Tchaikovsky
<i>Funny and sad blots</i> — teaches to recognize feelings and emotions; stimulates expression of sentiments; develops observation skills and activeness	wooden board, film, thick glossy paper; gouache paint. Dance of the Sugar Plum Fairy, The Nutcracker ballet by P. Tchaikovsky In the Hall of the Mountain King, Peer Gynt by E. Grieg
<i>The kingdom of forest gnomes</i> - relieves emotional stress, develops tactile sensation and creative thinking	Dry leaves, white glue calm music with the sounds of nature (sea splash, water purling, singing of birds, etc.);
<i>Envelopes of joy and sorrow</i> - development of the ability to openly express one's feelings towards various phenomena of nature and objects of the natural world	You will need: mail envelopes, paper of various sizes; coloured/white cardboard; paints, a set of pencils/felt-tip pens/crayons; scissors, glue
<i>Magic mirrors</i> — builds positive Self-concept, self-acceptance, self-confidence, reduces anxiety and reveals positive personality traits	paper of different sizes; coloured/white cardboard; paints, pencils/felt-tip pens/crayons; various envelopes, scissors, glue. Drawings of animals and plants. In the Hall of the Mountain King, Peer Gynt by E. Grieg
<i>The birthday of a newspaper elf</i> — self-knowledge of a child; expanding the perception of oneself, about one's place in the world of nature, building adequate self-esteem, increasing control over one's environmentally-oriented actions	You will need: paper of different sizes; newspapers, magazines; coloured/white cardboard; paints; set of pencils/felt-tip pens/crayons; scissors, glue, plasticine.
<i>Desert island</i> - social knowledge (knowledge of other people, the diversity of the natural world, the patterns and styles of human behavior, mechanisms of effective relationships with people and with Nature	A4 size paper; watercolour paints; brushes; magazines; pictures of the sky, sun, sea, flowers, trees, objects of nature
<i>We draw a magical world</i> — teaches awareness of one's health, facilitates reducing emotional stress, anxiety related to individual natural phenomena or animals	Finger painting is a permitted playing with mud, where destructive desires and actions are expressed in a socially accepted form. The student may unwittingly dare to take actions that he or she would not usually do because he/she is afraid, unwilling or incapable of violating the rules.
<i>New Year emotions</i> — expands the concept of feelings towards natural objects; helps to harmonize the colour pattern with imagery, shows the artistic techniques of expressing certain emotions and feelings	Natural material; paper of various sizes; coloured/white cardboard; paint, set of pencils / felt-tip pens / crayons; various envelopes, scissors, glue. Dance of the Sugar Plum Fairy, The Nutcracker ballet by P. Tchaikovsky New Year song from "Masha and the Bear" cartoon
<i>Winter amusement</i> - social cognition (the cognition of other people, the diversity of the natural world and the peculiarities of adaptation to different life situations)	paper of different sizes; coloured/white cardboard; paints, pencils / felt-tip pens / crayons; various envelopes, scissors, glue. Only black and white paints.
<i>Magic transformations</i> - monotyping - helps in the development of the ability to convey an emotional state through an artistic image, reducing psycho-emotional stress, increasing self-confidence, developing a creative personality.	plastic board, film, thick glossy paper; gouache paint. Chernomor's March, the opera Ruslan and Lyudmila by M. Glinka Anitra's Dance from Peer Gynt by Edvard Grieg
<i>The magic world of flowers</i> — helps to reveal the inner world, to relieve emotional tension, to develop a creative personality	Natural material, dried flowers, pieces of coloured fabric, beautiful bird feathers, lace fragments, threads, magazines, coloured paper, etc. calming music with the sounds of nature (sea splashing, water purling, singing of birds, etc.)
<i>Fairy tales about oneself</i> - building self-perception; imagining one's place and role in the world of nature	kind of fantasy writing, entirely based on the immediate personal experience.
<i>Me on a bird</i> — imagining the world; imagining one's abilities and ways to influence the environment	Coloured sand, sand, paper of different sizes; coloured/white cardboard; paints, set of pencils/felt-tip pens/crayons; various envelopes, scissors, glue.
<i>Collage "Fairy tale Bird"</i> — helps to relax, relieve muscle tension, develop creativity and ability for abstract thinking	A4 size paper; watercolour paints; brushes; pictures of the sky, sun, sea, flowers, trees; magazines

Table 1 (continued). Exercises used in EcoArt Therapy

Topic & content of the lesson	Work mode & required materials
<i>Frightening mask</i> – contributes to building a trustworthy environment in the group; helps in the manifestation of a sense of fear of phenomena and objects of nature, teaches reflexive ecological actions	paper of various sizes; coloured/white cardboard; paints, set of pencils/felt-tip pens/crayons; various envelopes, scissors, glue, natural material.
<i>Hello, sand</i> — reduces psychophysical stress, develops fine motor skills, tactile sensation of the environment	Coloured semolina, blank cardboard sheet, drawing paper, white glue, pencils calming music with the sounds of nature (sea splashing, water purling, singing of birds, etc.)
<i>Magic Tree</i> - building the ideas about the world; effective use of one's internal resources	A4 size paper; watercolour paints; brushes music with nature sounds (chirping of birds)
<i>Everything might happen in a fairy tale</i> — relaxation through breathing, visualization, effective use of one's own internal resources; rapid recovery.	Coloured paper, white glue, cardboard, felt-tip pens, pencils Ocean sounds
<i>Flowers and colours</i> — development of sensory abilities; development of imagination	A4 size paper; watercolour paints; brushes, natural materials
<i>House of good mood</i> — understanding the reaction of one's body and the general state to the perception of a landscape or natural objects and phenomena; learning how to express one's state of mind; relieving stress	paper of different sizes; coloured/white cardboard; paints, set of pencils/felt-tip pens/crayons; various envelopes, scissors, glue, images of various landscapes, natural phenomena, and objects calm music with the sounds of nature (sea splashing, water purling, singing of birds, space sounds etc.)

Table 2. The results of the first measurement of the students' environmental consciousness development level

Level	Environmental knowledge	Environmental attitude	Eco-friendly mindset	Environmental intention
High	15%	13%	12%	0%
Medium	37%	72%	58%	16%
Low	48%	15%	30%	84%

Table 3. The results of the second measurement of the students' environmental consciousness development level

Level	Environmental knowledge	Environmental attitude	Eco-friendly mindset	Environmental intention
High	30%	68%	62%	44%
Medium	56%	32%	27%	35%
Low	14%	0%	11%	21%

- The method of the experiment, which has allowed identifying the level of students' environmental consciousness development depending on the year of study.

Experimental Base of Research

The empirical research has been conducted on the basis of universities among second-year students of various faculties.

Research Stages

The problem was studied in three stages:

Stage 1— preparatory. Development of the experiment program. Development of the research tool, i.e. questionnaire, and preparation of the diagnostic method for the study of the environmental consciousness development level.

Stage 2 — application of EcoArt Therapy methods.

Stage 3 — comparative analysis of the results before and after the experiment.

The first measurement of each of the four environmental consciousness components showed the results shown in **Table 2**.

RESULTS

After the application of Eco-Art Therapy methods, the second test was conducted to record and identify changes in the structural components of environmental consciousness (see **Table 3**).

Thus, we can conclude that the number of students with a low level consciousness has decreased for each component. At the same time, if we look at such a component as environmental intention, we can see that the number of students with a low level consciousness has significantly decreased, while those with medium and low levels increased.

In order to see how sustainable will be the impact of our classes, the third survey was conducted among the students who participated in our class 2 weeks after the experiment on environmental topics.

The repeated measurement revealed significant differences in the level of environmental consciousness development after EcoArt Therapy exercises. Thus, more than half of the respondents are characterized by a medium level of development (55.9%), some have a high level of development (41.2%), and only 2.9% have a low level.

DISCUSSIONS

The problem of the relationship between human and nature is certainly not new and has always existed. However, the realities of the modern world have led to the emergence and application of such technologies that have brought us face-to-face with the need to change the system of human-nature relationships. Today, the environmental problem is not only to protect the environment from the destructive influence of humankind and its activities but also the need to transform (switch from) the impact of human on nature to their interaction. Such interaction is possible if each person has a sufficient level of environmental consciousness and its structural elements that should be formed since childhood and throughout a lifetime.

General psychological and pedagogical principles of the EcoArt Therapy approach:

The principle of person-oriented and activity-based approach stems from the recognition of the fact that a personality develops through activity, as well as the fact that the activity of an individual in the framework of the leading age-specific activity is the driving force of development.

Dialogical principle. Creative interaction provides an opportunity for the development of positive personality traits, a person's unlimited creative capabilities, and the solution of social and pedagogical problems, etc.

The principle of an optimistic approach in correctional work assumes the creation of an "atmosphere of success" for each student, belief in their positive results, fostering of this feeling, and encouragement of their slightest achievements.

The principle of universality of artistic and aesthetic development means that artistic and aesthetic development is necessary for all people without exception, regardless of their individual characteristics, artistic abilities, national origin, and features associated with certain developmental disorders a person suffers from. This principle is a prerequisite for the development of a socially active person and his/her preparation for spiritual life and work.

The principle of reliance on positive things and the strengths of one's personality. Identifying positive aspects in a student with developmental problems and relying thereon, focusing on trust; the teacher helps the students to master new artistic activities and behaviors, experience joy and inner satisfaction.

The principle of integrated application of correctional and pedagogical methods and techniques. The use of a set of tools, methods, and techniques that take into account both individual psychological characteristics of a person, the state of the social situation, and the level of material, technical, educational and methodological support of the pedagogical process, as well as the readiness of the personnel to implement it.

The principle of co-existence stipulating that a person doesn't only conduct an event, but rather co-existence is created in a certain space, time and organizational patterns, uniting the participants on the basis of common values and experiences.

Exercises containing elements of EcoArt Therapy contribute to: the development of self-perception; the exploration and expression of one's feelings and emotions; the formation of a positive self-concept; the development of communication skills; getting emotionally closer to the world of nature; relief of psychological and emotional stress associated with natural phenomena and objects; the development of abilities to perform various types of environmental-oriented activities.

During EcoArt Therapy workshops, students learn how to: develop memory, attention, and thinking; cope with their fears related to the outside world; communicate with each other and the nature; freely express their emotions, feelings and thoughts; control their emotions without any harm to the psyche and the environment; develop their abilities to perform various kinds of creative activities; improve their self-esteem and be successful in interaction with the natural world; improve their physical and mental health.

The following is required to perform the exercises: drawing paper, paints, pencils, colored chalk, wax crayons, cardboard, scissors, glue; plasticine, plastic (fluent) sand, salt dough; various natural material; colored semolina, sand, salt; photos and drawings of natural phenomena and objects; magazines; natural materials (leaves, feathers, bark, moss, herbarium, etc.); music (sounds of nature and classical music).

The EcoArt Therapy approach has the following features:

1. Unbiased attitude to all the works: there is no "right" or "wrong" in art therapy, which must be clearly explained. Students need to feel safe and know that creating images is a way of communicating their

experiences, thoughts, and feelings, and that they will not be judged.

2. Students are kind of experts. The exercises are designed in such a way that the starting point is the experience of each person. In this context, students are “experts” in respect of their works.

3. Everyone’s contribution is important, it is important and unique. All works must be treated with equal respect, regardless of professionalism.

4. Confidentiality is a must because the exercises may involve a personal level. Personal secrets must be protected.

5. Story about a student’s work. There must not be an authoritative environment for presenting and discussing a student’s work. The student’s work must not be interpreted (only the author can do it if he/she wants); a student must not be forced to reveal more than he/she wants.

6. Basic rules. When working with a couple or group, it is desirable to set the basic rules. These rules must be observed with mutual respect and appreciation of everyone’s contribution to making the environment safe so that all students feel good.

Sample list of basic rules: listen carefully to each other; do not interrupt the speaker; respect each other’s opinions; no need to take an active part in the lesson, unless you want to; all participants should feel comfortable; everything said during a class should remain confidential, unless otherwise decided (Carey 2001, Karvasarsky 2000, Kelish 2002, Kopytin 2000, Lebedeva 2003).

Art sessions lasting from 30 to 40 minutes are held once a week, and, depending on the complexity of the problem, take from 3-5 to 12 weeks.

CONCLUSION

The massive environmental crisis, which has struck our planet, has made essential adjustments to the human – nature relations and led to the rethinking of all achievements of a global civilization. Since

approximately the sixties of the 20th century, once the danger of destruction of all life as a result of the industrial activity stroke the humankind so acutely, a new science – ecology – began to emerge and, as a consequence of this emergence, an environmental culture appeared. A new concept of the relationship between humankind and nature is emerging; now nature is perceived not as an object, but rather as a subject, which balances the human desire to satisfy its needs and the value of nature along with the need for a careful attitude to nature.

EcoArt Therapy is a method of providing psychological help through artistic endeavor. EcoArt Therapy is one of the “softest”, yet most in-depth methods in the arsenal of psychologists and psychotherapists.

EcoArt Therapy may be used both as the main therapy method and as an auxiliary one. One of the important advantages offered by EcoArt Therapy is that art allows to symbolically re-create the traumatic situation of a conflict in a hidden form and to find a way to resolve it due to the fact that creative activity is one of the transforming forces that may help overcome fears and anxiety arisen from the internal existential conflict. The process of art therapy itself is fun; it teaches to express feelings more spontaneously and directly.

EcoArt Therapy has no restrictions or contraindications.

EcoArt Therapy has proved successful in working with both children and adults, in individual and family therapy, in dealing with a wide range of interpersonal and intrapersonal problems, as well as physical health issues.

You can work both in a group or individually. Group and individual classes differ in terms of the purposes, the procedure, and methods of work. There are tasks that are best addressed in the one-on-one meeting format, e.g. emotional stress relief, overcoming negative thinking, dealing with fears, and the elimination of barriers resulting from over-socialized parenting style in the family, etc.

REFERENCES

- Burno ME. (1989) Creative self-expression therapy. Moscow: Medicine.
Carey L (2001) Family sandplay therapy. Family play therapy. St. Petersburg: Peter.
Cherdymova EI (2010) Fundamentals of formation of an individual’s environmental consciousness. Samara: OOO SamLuxPrint.

- Cherdymova EI (2011) Environmental consciousness (theoretical and empirical studies). Samara: OOO SamLuxPrint.
- Cherdymova EI, Babina OL, Babicheva ES (2013) EcoArt Therapy. Samara: Samara branch of the University of the Russian Academy of Education.
- Doctorov BZ, Safronov VV, Firsov BM (1992) Environmental problems awareness level: public opinion profiles. *Sotsis*, 12: 51-58.
- Karvasarsky BD (2000) Encyclopedia of Psychotherapy. St. Petersburg: Peter.
- Kelish EV (2002) The quest for meaning in visual images. *Healing art: Art Therapy Magazine*, 5(1): 6-36.
- Khapai NA (2009) Ecological culture of the youth of modern Russia: a psychological analysis: abstract of PhD Thesis. Maykop.
- Kochergin AN, Markov YuG, Vasiliev ND (1987) Environmental knowledge and consciousness: peculiar aspects of formation. NovosibirskL Nauka.
- Kopytin AI (2000) Art therapy workshop, St. Petersburg: Peter.
- Kopytin AI (2002) Theory and practice of art therapy. St. Petersburg: Peter.
- Lebedeva LD (2003) Practice of art therapy: approaches, diagnostics, training system. Saint Petersburg: Retch.
- Makarov VV (2000) Psychotherapy lectures. Moscow: Academic project.
- Maklyarsky BM (1995) Sustainable development and environmental needs. *SOCIS*, 4: 51-56.
- Markovich DZh (1999) Social ecology. Moscow: Nauka.
- Markovich DZh (2001) Globalization and environmental education. *Social studies*, 1: 17-24.
- Medvedev VI, Aldasheva AA (2001) Ecological consciousness, 2nd enlarged ed. Moscow: Logos.
- Moiseev NN (1998) Once again on the problem of coevolution. *Problems of Philosophy*, 8: 26 - 32.
- Moiseev NN (1998) Thinking about the future. Moscow: MNEPU Publisher.
- Park P (2002) Human ecology. *Theoretical psychology: Anthology*, 4: 374 - 421
- Suravegina IT (2000) Why environmental science should be introduced to public schools. *Environmental education*, 1: 12-15.
- Vashchenko MI, Rozhkina NF, Andreeva IA (1990) Environmental education and education of students on an interdisciplinary basis. Abstracts of the second republican workshop: Content and Forms of Environmental Education at Pedagogical University. Perm: University.
- Yasvin VA (2000) Psychology of attitude towards nature. Moscow: Smysl.
- Zinkevich-Evstigneeva TD (1998) Path to magic, St. Petersburg: Peter.