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PSYCHODIDACTICS OF ECOPSYCHOLOGICAL EDUCATIONAL ENVIRONMENT DESIGN

The article deals with the issue of designing a harmonious ecopsychological educational space in terms of secondary schools and higher educational institutions. The paper aims to reveal psychodidactic aspects of designing an ecopsychological educational environment at secondary schools and higher educational institutions, and to determine the main ways of its formation in the process of studying natural sciences. The following research methods were used in the study: questionnaire "Psychodidactic Aspects of Ecopsychological Educational Environment Design" by S. Yalanska, "Alternative" by V. Yasvin, S. Deriabo, "The Nervous System Power" inventory by A. Besedin, I. Lipatov, A. Timchenko, V. Shapar. As a result of the research, there is a necessity of introducing the "Didactic Service" system and the "Psychological Didactic Service" system (a program of university students' creative competence development) into the educational process of secondary schools and higher educational institutions. Within the framework of these programs, natural sciences are considered as ideological, which should ensure the formation of students' scientific worldview, ecology-based thinking, etc.

Keywords: *creative competence, creativity, designing, ecopsychological educational environment, student, first-year student, didactic service, psychological didactic service.*

Introduction

The fundamental challenge of modern science is the psychology of human development in connection with the educational, informational, family environment and nature in general. The integrated understanding of the mental, personal development, learning and behavior of a person is leading for ecopsychological research. The study of ecopsychological conditions for the design of the educational environment is actively carried out in foreign and domestic psychology, taking into account knowledge of philosophy, pedagogy, sociology, natural sciences and other disciplines. In terms of the research in the field of ecopsychology it is important to understand that the development of mental functions, mental health, behavior, training, and learning activities cannot be considered beyond human interconnection with the educational, family, information environment, and nature as a whole.

Aim and Tasks

The paper aims to reveal the psychodidactic aspects of designing an ecopsychological educational environment at secondary school and university, and to determine the main ways of its formation in the process of studying natural sciences. Research tasks are as follows: 1) to find out students' opinions concerning the need for new psychodidactic approaches in the formation of the ecopsychological educational environment at modern general school and university, and to identify the means, conditions that, in the opinion of the respondents, contribute to the formation of the ecopsychological educational environment; 2) to examine motivation for ecopsychological behavior; 3) identify opportunities of first-year students for effective ecopsychological understanding of the environment; 4) to substantiate the content of the integrated approach to the psychodidactic basics of the design of the ecopsychological educational environment at school and university.

Research Methods

In order to examine the students' understanding of the problem of ecopsychological conditions for the educational environment harmonization we carried out a survey involving first-year and Master's degree students studying at the natural, physical and mathematical faculties of the Poltava V.G. Korolenko National Pedagogical University (n=205 persons) using a questionnaire "Psychodidactic Aspects of Ecopsychological Educational Environment Design" by S. Yalanska. It aims to find out the opinions of the respondents about the need for new psychodidactic approaches in the formation of the ecopsychological educational environment; to define factors, conditions that, in the opinion of the respondents, contribute to the formation of the ecopsychological educational environment. The results obtained in the process of empirical research were systematized by simple grouping by ordering or classification according to a sign denoted by x. Each individual value of a sign is denoted as x1, x2, x3, ..., xk, and the number of values is k. Absolute numbers that indicate how many times one or another of the x values are found are called frequencies and are respectively denoted as f1, f2, f3, ..., fk. The share of the values of the sign in the total number of studies is called the relative frequency and denoted as ω1, ω2, ω3, ..., ωk. The relative frequency

is calculated by the formula: ω = f / n (n - number of subjects), and expressed as a percentage.

Besides, we used "Alternative" technique by B. Yasvin, S. Deryabo, "The Nervous System Power" by A. Biesiedin, I. Lipatov, A. Timchenko, V. Shapar (96 first-year students of Poltava V.G. Korolenko National Pedagogical University took part in the study).

In the experimental group, preparatory work in the form of consultations was conducted: explaining the essence and urgency of ecopsychological conditions for the harmonization of the cultural and educational environment in terms of modern higher education; getting students acquainted with methodical tools and giving them instructions on implementing the techniques.

Mathematical calculations obtained on the basis of clustering (m) of frequency are correlated with a number of values that fall into a particular group. The arithmetic mean is a fraction of the sum of all the values of the sign divided by the number of measurements. It is denoted as x. The formula for the calculation has the following form: $x=(x_1+x_2+x_3+...+x_n)/n=(1/n)*\Sigma x_i$, where $x_1, ..., x_n$ - value of the sign; n - number of the subjects.

Research Results

The analysis of the issue of designing the ecopsychological educational environment has shown that there are different approaches to its essence. Fundamental principles of cultural and educational space design, according to A. Bondarevskaya, are as follows: student-centered and individual approaches; the priority of values of a creative personality; focus on structures that reveal the true meaning of a particular activity; social adaptability; technological development of the educational process; creation of conditions for the development and self-development of the individual (Bondarevskaya, 2004).

The design of the ecopsychological educational environment is one of the important ways of its acquisition of features of a cultural, educational process with deep spiritual and moral content, which is focused on the development of creative competence, the implementation of the abilities of each individual, and the improvement of the quality of education in modern educational institutions.

S. Deryabo and V. Yasvin state that the ecologically-minded person is characterized by non-pragmatic interaction with the environment (Deryabo, Yasvin, 1996).

The survey results are presented in Fig. 1.

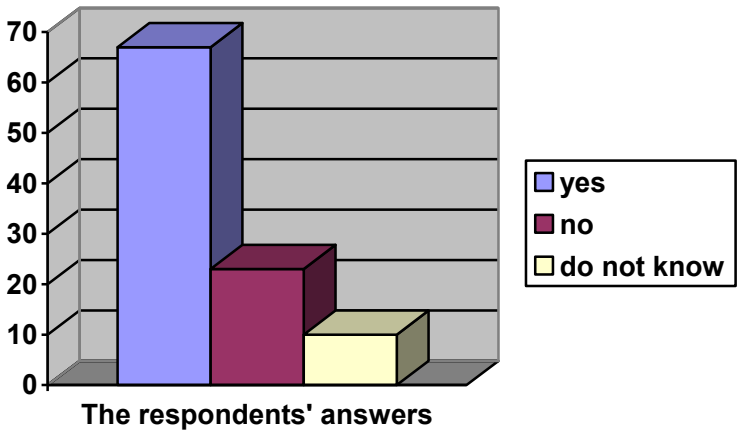

Figure. 1. Results of asking the respondents a question "Is there a need for new psychodidactic approaches to school and university ecopsychological educational environment formation?" (in %)

Figure 1 shows that the answers of the respondents are grouped as follows (ω_1-ω_3, %), k = 3: yes, psychodidactic approaches need updating (67.0%); No, today there are quite a variety of approaches (23.0%); I do not know (10.0%).

Figure 2 presents the results of answering to the question "What contributes to the formation of the ecopsychological educational environment?"

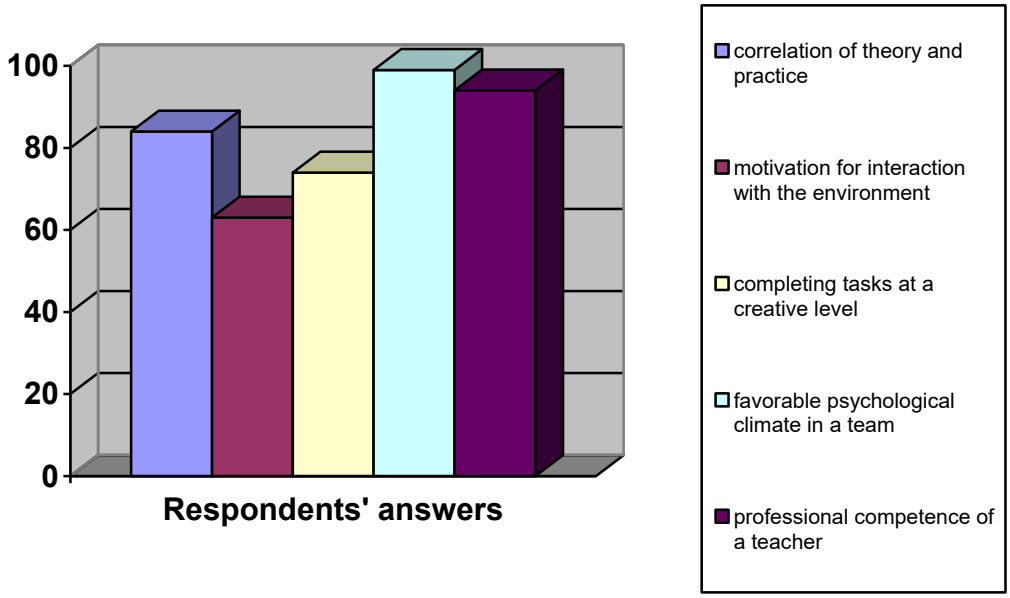

Figure 2. Results of asking the respondents a question "What contributes to the formation of ecopsychological educational environment"? (in %)

Fig. 2 shows that the respondents chose the following answers (**ω_1-ω_5, %**), k = 5: the connection of the theory and practice (84.0%); motivation of interaction with the environment (63.0%); solving tasks at the creative level (74.0%); favorable psychological climate in the team (99.0%); professional competence of the teacher (94.0%).

Subsequent research was attended by 96 first-year students majoring in natural sciences. The examination of their motivation for ecopsychological behavior was carried out using "The Alternative" technique by V. Yasvin, S. Deryabo.

The obtained results are presented in Table 1.

Table 1.

Results of Examining Respondents' Motivation for Ecopsychological Behavior Using "The Alternative" Technique

Motivation type (**m**)	Cognitive	Aesthetic	Pragmatic	Practical	Pragmatic and Practical	Pragmatic and Aesthetic	Pragmatic and Cognitive	Aesthetic and Cognitive
Number of respondents in % (x)	36.2	21.6	17.6	13.0	5.2			6.4

As Table 1 demonstrates, the cognitive motivation type prevails in 36.2%; the aesthetic type prevails in 21.6%; the pragmatic type of motivation is dominant for 17.6%; practical - 13.0%; pragmatic and practical, pragmatic and aesthetic, pragmatic and cognitive types of motivation are characteristic for 5.2% of the students; aesthetic and cognitive type of motivation is peculiar for 6.4% of the respondents.

Consequently, based on the diagnosis of the leading type of motivation for interacting with natural objects, the cognitive and aesthetic types prevail among the respondents, thus, natural objects are considered by them as subjects having their own self-value.

The results of the study using The Nervous System Power Inventory by A. N. Besedin, I. I. Lipatov, A. V. Timchenko, V. B. Shapar are presented in Table 2.

Table 2.

The results of the Study Using the Technique the Nervous System Power Inventory

scores (m)	1	2	3	4	5
Number of respondents in % (x)	0	11.5	32.4	51.6	4.5

The data in Table 2 indicate the strength of the respondents' nervous system, in particular, 4.5% have a powerful strength of the nervous system; 51,6% are characterized by the strength of the nervous system; 32.4% have uncertain nervous system strength; 11.5% - have weak nervous system. Consequently, most respondents are characterized by a sufficient strength of the nervous system, indicating the possibility of forming an effective ecopsychological perception in the cultural and educational space.

The design of an ecopsychological educational environment at secondary school is possible thanks to the system of "Didactic Service", which contributes to the development of competences, creative development of students in the process of studying natural sciences. It provides systematic and consistent application of didactic service packages.

The content of the didactic package is represented by components – didactic units. A didactic unit is a task aimed at activating cognitive activity of schoolchildren and may be of different levels of complexity.

The structure of the didactic package is as follows: a frontal survey; survey of a student in front of the class; terminological dictation; biological dictation; test; tasks for independent work are represented by three levels: reproductive; search; creative; tables for filling; schemes; crosswords; charades; quiz; exercise "Creative assumptions"; sayings and proverbs, etc. Due to such components, the vision of oneself as an integral part of nature is formed, the ecological thinking is being developed. Due to the different levels of schoolchildren's academic success, their age and individual characteristics, the content and the number of components of didactic packages varies. The most effective is the use of the "Didactic Service" system, starting from adolescence (Grinova, Yalanska, 2017).

For the design of the ecopsychological educational environment in the pedagogical institutions of higher education, we offer the system "Psychological Didactic Service" (a program for developing the creative competence of future teachers), which promotes: the development of autonomy, self-regulation, responsibility for their actions, and the provision of creative implementation; the formation of perceiving the personality as part of the environment; psychological readiness to help others, contribute to the preservation of nature. Structurally, the program for developing the creative competence of future teachers is divided into units (Table 3).

Table 3.

Program for the Development of Future Teachers' Creative Competence

№	Name of the unit	Main psycho-pedagogical means
1.	Development of professional values and creativity values	1. Introductory speech. 2. Working out and adoption of rules of work. 3. Exercise "Motivation of an independent creative search". 4. Game "I and my professional values". 5. Didactic task "Creative Reporter". 6. Summing up the results.
2.	Mastering the organizational and methodical basis	1. Introductory speech. 2. Working out and adoption of rules of work. 1. Exercise "Volitional efforts and creativity". 2. Exercise "Bank of ideas – I have creative skills" 3. Didactic task "Creative Assumptions" 4. Summing up the results.
3.	Mastering pedagogical communication	1. Introductory speech. 2. Working out and adoption of rules of work. 1. Exercise "Dialogical communication of a future teacher". 2. Exercise "Bank of ideas – I am a good interlocutor". 3. Didactic task Creative Reporter". 4. Summing up the results.
4.	Mastering professional concepts	1. Introductory speech. 2. Working out and adoption of rules of work. 3. Exercise "Development of professional training". 4. Exercise "Do you know that…?" 5. Exercise "Explain the concept". 6. Summing up the results.
5.	Gaining teaching experience	1. Introductory speech. 2. Working out and adoption of rules of work. 3. Business game "Creative thinking development". 4. Exercise "Bank of ideas – I am self-improving". 5. Didactic task "Test for creative analysis". 6. Summing up the results.

Table 3 shows that the program consists of a set of units represented by psychological and pedagogical means aimed at developing students' readiness for an adequate and complete cognition and awareness of their own creative possibilities and pedagogical creativity. The program provides for the involvement of psychological conditions and factors that activate the creative, cognitive activity of students. Future teachers comprehend their ideas about themselves and others. The program participants get information on how they are perceived by other people; how their actions and deeds are perceived by others (Yalanska, Moskalenko, Marchenko, 2017).

Discussion

I. Pantiuk based on the consideration of the issue of forming the ecological consciousness of university students majoring in humanities (Belorussia) describes their subjective attitude to nature. The obtained results indicate the predominance of cognitive and aesthetic types of motivation for interaction with natural objects and the low-dominant subjective attitude to nature (Pantiuk, 2016). D. Dubinina conducted an empirical study of the age aspect of environmental consciousness (Ukraine). The results indicate the predominance of collaborative ecodisposition in the subjects. In the adolescents, self-values are predominant, in youth – environmental values, in adults and the elderly – moral and social values (Dubinina, 2009). Taking into account the aforementioned research studies and the works of other scientists on the issue, it has been concluded that the psychodidactic aspects of the ecopsychological educational environment design at secondary schools and universities are insufficiently examined and need further study.

Conclusions

According to the results of the theoretical analysis, the conducted survey using a questionnaire "Psychodidactic Aspects of Ecopsychological Educational Environment Design" by S. Yalanska, 1st-year and master's degree students of natural, physical and mathematical faculties of the Poltava V.G. Korolenko National Pedagogical University (205 people), as well as implemented technique "Alternative" according to V. Yasvin, S.D. Deryabo, "The Nervous System Power" by A. Besedin, I. Lipatov, A. Timchenko, V. Shapar (96 students participated in the study), the following conclusions were drawn: 1) 67.0% of the respondents consider that psychodidactic approaches in the formation of the ecopsychological educational environment should be updated, in particular, according to the respondents, the connection between theory and practice, motivation for interaction with the environment, solving problems at the creative level, favorable psychological climate in the team; professional competence of the teacher contribute to the formation of the ecopsychological educational environment; 2) the results of the study of the ecopsychological behavior motivation show that the leading types of the respondents' interaction motivation with natural objects are the cognitive and aesthetic types. For them, natural objects are subjects having their own self-value; 3) the majority of the students have a sufficiently strong nervous system, indicating the possibility of forming an effective ecopsychological perception in the cultural and educational space, an effective ecopsychological understanding of the environment; 4) the necessity of an integrated approach to the psychodidactic basics of the design of the ecopsychological educational environment at schools and universities has been proved. They should consider the development of self-regulation, independence, responsibility for one's own actions, ensuring creative implementation.

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ПСИХОДИДАКТИКА ПРОЕКТУВАННЯ ЕКОПСИХОЛОГІЧНОГО ОСВІТНЬОГО СЕРЕДОВИЩА

Мета статті полягає у розкритті психодидактичних аспектів проектування екопсихологічного освітнього середовища у загальноосвітній та вищій школі та визначенні основних шляхів його формування у процесі вивчення природничих дисциплін. За результатами теоретичного аналізу проблеми, здійсненого анкетування (анкета «Психодидактичні аспекти проектування екопсихологічного освітнього середовища» за С. Яланською) студентів І курсу бакалаврів та магістрантів природничого, фізико-математичного факультетів Полтавського національного педагогічного університету імені В.Г. Короленка (205 осіб), проведених методик «Альтернатива» за В. Ясвіним, С. Д. Дерябо, «Сила нервової системи» за А. Бєсєдіним, І. Ліпатовим, А. Тимченком, В. Шапарем (у дослідженні взяли участь 96 студентів І-х курсів Полтавського національного педагогічного університету імені В. Г. Короленка, які вивчають природничі дисципліни) було зроблено такі висновки: 1) з'ясовано, що 67,0% опитаних студентів магістрантів вважають, що психодидактичні підходи у формуванні екопсихологічного освітнього середовища у сучасній загальноосвітній та вищій школі потребують оновлення, зокрема, на думку опитуваних, сприяють формуванню екопсихологічного освітнього середовища зв'язок теорії з практикою, мотивація взаємодії з навколишнім середовищем, розв'язання завдань на творчому рівні, сприятливий психологічний клімат у колективі; професійна компетентність педагога; 2) розкрито результати дослідження мотивації екопсихологічної поведінки – на основі діагностики провідного типу мотивації взаємодії з природними об'єктами встановлено, що переважає когнітивний та естетичний тип у респондентів, коли для них природні об'єкти є суб'єктами, що володіють власною самоцінністю; 3) визначено, що для більшості досліджуваних студентів характерна достатня сила нервової системи, що вказує на можливість формування ефективного екопсихологічного сприйняття в культурно-освітньому просторі, ефективного екопсихологічного розуміння оточуючого середовища; 4) обґрунтовано необхідність інтегрованого підходу до психодидактичних основ проектування екопсихологічного освітнього середовища у загальній та вищій школі, які мають базуватися на урахуванні розвитку саморегуляції, самостійності, відповідальності за свої вчинки, забезпеченні творчої реалізації; формуванні сприйняття особистістю себе як частини оточуючого середовища, осмисленні можливого змістового естетичного, когнітивного, практичного співвідношення в ставленні до інших; готовності допомагати оточуючим, сприяти збереженню навколишнього середовища.

Ключові слова: творча компетентність, творчість, проектування, екопсихологічне освітнє середовище, учень, студент-першокурсник, дидактосервіс, психолого-дидактосервіс.

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