

Using an Experience of the European Union to Form Future Preschool Teachers' Ecological Competence

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Abstract: The article is dedicated to the theoretical and methodological aspects of the future preschool educators' ecological competence formation with using the European Union's experience in environmental safety and education.

The purpose of the article is to represent the impact of using the European Union's experience on the process of future preschool teachers' environmental competence forming.

The authors have analysed domestic and foreign researches on the problem of teacher's ecological competence forming. They found out that the problem of future preschool educators' ecological competence forming with using the European experience was not the subject of scientific research.

Based on the analysis of scientific studies of the problems of ecological education, educators' professional training, authors have presented their interpretation of the concept of "future preschool teacher's ecological competence" and have identified its interconnected components (motivational, gnostic, activity, reflexive), their indicators and levels of formation (high, medium, low). 92 students (experimental group (n = 45) and control group (n = 47)) of Oleksandr Dovzhenko Hlukhiv National Pedagogical University participated in the study.

Students of the experimental group learned the course "Implementing the Strategy of Environmental Security: Integration of European Experience". It had a positive effect on the formation of their ecological competence. Thus, the high level of future preschool teachers' environmental competence increased by 20%, the medium – by 4,5%, and the low level decreased by 24,5%.

Keywords: *ecological competence; future preschool teacher's ecological competence; future preschool educators' ecological competence formation; professional training; ecological security; ecological education; European Union countries.*

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1. Introduction

The modern global community recognizes the importance of ecological education for both children and adults. Teachers are called upon to implement the tasks of ecological education of the younger generation. The basics of ecological culture of the individual are formed during preschool childhood and the success of this process depends on the educator's ecological competence. The ecological competence of the teacher is an important component of his/her professional competence. In the modern conditions of European integration, the problem of future educators' ecological competence formation through the use of experience of ecological education and safety of the European Union (EU) countries acquires special urgency. Ukraine territorially belongs to Europe, so it has common environmental problems. However, there is no thorough scientific research in domestic science related to the use of the European countries experience for creating environmental safety and organization of ecological education in the process of future preschool teachers' professional training. With this in mind, the article aims to present the results of the grant project "Implementing the environmental security strategy: integrating the European experience" 562284-EPP-1-2015-1-EN-EPPJMO-MODULE of the European Union Erasmus + program, Jean Monnet, in particular their use in the process of future educators' ecological competence formation.

The process of preschool teacher's professional competence formation, and ecological competence as its component, takes into account the provisions of the regulatory framework (Laws of Ukraine "On Education" dated 05.09.2017 No. 2145-VIII, "On Higher Education" dated 01.07.2014 No. 1556-VII, The concept of national environmental policy of Ukraine for the period up to 2020 (Cabinet of Ministers of Ukraine, 2007)) and the requirements of the Standard of higher education in the specialty 012 "Preschool education" in the field of knowledge 01 "Education / Pedagogy" for the first (bachelor's) level of higher education (Ministry of Education and Science, 2019).

2. Analysis of research and publications

Ukraine's integration into the European community has led to new requirements for the future higher education professionals' training. The modernization of higher education in Ukraine is aimed at developing promising models for training qualified specialists in accordance with European standards (Bulgakova et al., 2020). The training of competent

specialists in ecological education of children and adults is an urgent issue of modern higher education. The importance of future preschool educators' ecological competence formation is due to the global ecological crisis and the need to form the younger generation's ecological culture and consciousness.

Theoretical analysis of researches on the teacher's ecological competence formation in domestic and European theory and practice shows that the main approaches to the definition of "ecological competence" began to appear in the early 90s of the twentieth century.

In this regard, foreign (Orr, 1992; Pe'er et al., 2007; Roczen, 2011; Dlimbetova et al., 2015; and many others) and domestic (Panfilova, 2002; Alekseev, 2006; Ermakov, 2009; Plokhii, 2010; Gagarin, 2011; Zahorodnia, 2015; Konovalchuk, 2016; Munasypova-Motyash, 2016) scholars study the problem of ecological education, ecological competence, its structure and approaches to formation in the process of professional training.

Munasypova-Motyash (2016) notes that nowadays concept of "ecological competence" has acquired a universal, interdisciplinary, integral and socio-cultural nature.

Roczen (2011) conceptualizes environmental competence as a model describing the interplay between environmental knowledge, connection with nature, and ecological behaviour.

Glazacheva and Glazachev (2013) regard the ecological competence as a person's ability to integrate environmental knowledge, skills, ways to use them in various types of practical activities, a person's willingness to carry out environmental activities, his experience in preserving the natural world and solving environmental problems.

At the same time Ermakov (2009) defines environmental competence as conscious, meaningful mastery of theoretical knowledge, skills, decision-making methods, moral standards, values, traditions necessary for the practical implementation of environmentally sound activities.

Gagarin (2011) considers ecological competence as an integrative characteristic of personality, which contains, first, ecological knowledge, ideas about the nature and norms of human interaction with the environment, ideas about nature as the most important value, readiness and ability to solve environmental problems; secondly, the experience of participating in practical activities concerning the preservation and improvement of the environment; thirdly, ecologically significant personal qualities (humanity, empathy, thrift, environmental responsibility for own activities).

According to Konovalchuk (2016), ecological competence is a synthesis of personal qualities, creative abilities, knowledge, skills and individual experience and its integrity ensures the person's ability to motivate his life in harmony with the environment, social and personal needs and values, realizing own responsibility for the impact of his professional and domestic activities on the environment.

Ecological competence, according to Plokhii (2010), is a component of ecological culture of an individual, conscious possession of ecological knowledge, ways of decision-making, moral norms, values necessary for ecologically expedient activity.

The definition of ecological competence of teachers also deserves attention.

Thus, Panfilova (2002) gives the following definition of the teacher's ecological competence: it is combination of knowledge and experience in the field of natural sciences, ecology and environmental education, ability to preserve the environment and recognition of the special social value of environmental benefits, which ensure the maximum life expectancy and minimal morbidity.

According to the statement of Alekseev (2006) the ecological competence is the integrative quality of the teacher's professional orientation in a modern, civilized ecological and educational environment and the ability to perform pedagogical functions in accordance with the values, norms, and standards adopted in society in a particular historical period".

Makarova and Stepanova (2020) deem the future teacher's ecological competence as an integrated personality quality based on theoretical knowledge, practical skills in the field of ecology and the willingness to environmentally appropriate and professionally appropriate behaviour in situations of moral choice.

Perfilova and Alizade (2011) mention that ecological competence is referred to the man's readiness for adequate actions to the transformation of existing social and natural reality. Scholars consider that the structure of ecological competence comprises such basic elements as: 1) axiological and conceptual; 2) general cultural; 3) referred to the personal self-improvement; 4) communicative.

The researches on the problem of present and future teachers' ecological competence represent different views on the structure of this construct. Makarova and Stepanova (2020) distinguish cognitive, value-motivational and professional-activity components in the structure of ecological competence of the future teacher.

Galtseva et al. (2017) developed the basic components of students' ecological competence (motivational, gnostic, organizationally procedural and diverse components) taking into account the principles and objectives of ecological education.

Tchaikovska (2012) specified the components of students' ecological competence formation: the formation of adequate ecological ideas; formation of attitude to nature; formation of system skills and abilities (technology) for interaction with nature.

In the context of our research, the studies on the issue of teachers' training to the ecological education of younger generation in the EU countries are of scientific interest (Paramonova & Protasova, 2001; Shulzhenko, 2003; Kuchay, 2010; Sichko & Yurchenko, 2011).

A comparative analysis of the content of the ecological education system and methods of future teachers' training for environmental education of students in Great Britain and in Ukraine, made by Kuchay (2010) allows us to state that the total number of environmental disciplines at different institutions of higher education varies from 5 to 7; the total number of hours provided for the teaching of these disciplines is a much larger in the universities of Great Britain, in contrast to the universities in Ukraine.

Sichko and Yurchenko (2011) revealing the features of ecological education in higher education institutions of European countries, emphasize that the education for sustainable development of society on the basis of ecocentric paradigm is an environmental priority. Professional training for many fields, including education, is based on a certain value system; it determines the choice of goals, means and conditions of activity (scientific, pedagogical, social, etc.), and is designed to answer the question: what do this activity happen for.

Thus, the problem of teachers' training for ecological education of children, the formation of their ecological competence is relevant and a number of studies is aimed at its solving in Ukraine, Russia, Europe. The scholars interpret the essence of ecological competence as an integrated personal quality, which is manifested in the competent application of ecological, ethical knowledge during ecologically appropriate interaction with natural objects. The definitions of teacher's ecological competence contain an aspect of professionally appropriate behaviour in situations of interaction with nature. In our opinion, the proposed definitions of educator's ecological competence are debatable and non-oriented on the object of professional activity (children of a certain age or students), and they do not reflect the focus on its ecological education.

3. Research methods and methodology

Participants

The research was conducted on the basis of Oleksandr Dovzhenko Hlukhiv National Pedagogical University. 92 fourth-year students of bachelor's level (specialty "Preschool Education") participated in the study. They were divided into an experimental group (EG) – 47 students and a control group (CG) – 45 students.

The main indicator was the initial level of formation of students' ecological competence. It was determined by a 5-point grading system.

12 lecturers of the Department of Preschool Pedagogy and Psychology and the Department of Theory and Methods of Preschool Education were experts.

The study was conducted during the 2018-2019 academic year.

Materials

The purpose of the article is to represent the impact of using the European experience in ensuring environmental safety and education on the forming of ecological competence of future preschool educators.

To collect and process data, we used research methods: theoretical analysis of scientific literature, expert evaluation, self-assessment, questionnaires, testing, students' practical tasks, pedagogical experiment, mathematical processing of research results.

Theoretical analysis of the scientific literature was used to select and comprehend the actual material; analysis of concepts, theories and methods was used to identify ways to solve the problem.

We used: self-assessment method in order to identify the students' ability to assess the level of their own ecological competence objectively, and expert assessment – to determine the objectivity of students' self-assessment; questionnaires – to identify students' motivation to use the EU experience in environmental safety and education in future professional activities; testing – to identify students' knowledge about international cooperation of European countries in the field of environmental protection, regulatory framework for environmental safety of the EU, ecological education of preschoolers, schoolchildren, students in EU countries, implementation of European experience into environmental safety strategy in Ukraine; students' practical tasks – to identify the future educators' ability to apply knowledge about the peculiarities of environmental safety and organization of ecological education in the EU in a quasi-activity; pedagogical experiment (ascertaining, formative, control stages) – in order to

study the state of students' ecological competence formation and to examine the effectiveness of the system of future educators' specified competence forming; mathematical processing of research results – to identify the reliability and objectivity of the collected data.

At the ascertaining (the first) stage of the experiment criteria, indicators and levels of students' ecological competence formation were developed, diagnostic tools were selected, questionnaires, testing, self-assessment of students, expert assessment of formation of future preschool teachers' ecological competence in experimental and control groups were carried out, students' practical tasks were analysed, mathematical processing of the obtained data was made.

At the formative (the second) stage, the students of the experimental group were taught the author's course "Implementing the Strategy of Environmental Security: Integration of European Experience". Its aim was to deepen students' knowledge about environmental safety and education in the EU and to develop skills to apply this knowledge in practice.

At the control (the third) stage, the levels of students' ecological competence formation in the experimental and control groups were revealed according to the methods of the ascertaining stage. Also, their comparison was carried out.

4. Results

The analysis of researches on the problem of teachers' ecological competence formation allows to interpret the future preschool teacher's ecological competence as a dynamic combination of orientation on own ecological sound behaviour and ecological education of preschoolers, natural-ecological, psychological-pedagogical, professional and methodical knowledge and abilities to use them in the process of pupils' ecological culture foundations forming, abilities to apply foreign experience of ecological safety and education and to develop own creative potential in preschool children's ecological education.

According to this we define motivational, gnostic, activity, reflexive components in the structure of future preschool teacher's ecological competence.

The motivational component is the system-forming element of the structure of the future preschool teacher's ecological competence. The future educators' orientation, made by motives, values, needs, interest in foreign experience of environmental safety and education determines the awareness and purposefulness of their professional knowledge, skills and

abilities necessary for the successful implementation of environmental education of preschool children.

The gnostic component is the basis of future preschool teachers' ecological competence. It is formed by a system of natural-ecological, psychological-pedagogical, professional-methodical and special knowledge about the peculiarities of ensuring environmental security and organizing of ecological education in the countries of the EU.

The activity component plays an integrative role in the structure of future educators' ecological competence. It combines the ability to apply complex of knowledge, which makes the gnostic component.

Reflection is the basis of students' objective self-assessment and helps them to understand and comprehend the ways and mechanisms of acquiring components (motives, values, interests, needs, knowledge, skills in environmental education of preschoolers), which together form their ecological competence.

We defined criteria (motivational, gnostic, activity, reflective) and indicators of future preschool teachers' ecological competence consistent with its components.

Thus, the motivational criterion combines the motives for mastering ecological knowledge and skills, the interest in European experience in environmental security and ecological education of preschool children, the desire to apply foreign experience in ecological education of preschoolers and orientation on systematic own ecological competence improvement during independent professional activity.

Gnostic criterion is a set of natural-ecological, psychological-pedagogical, professional-methodical knowledge, in particular about features of ecological education of children in the EU for successful realization of preschoolers' ecological education tasks.

The activity criterion determines the students' ability to apply the set of above knowledge in the conditions of quasi-activity and to implement them into the educational process of preschool institution.

Reflexive criterion is the ability to self-analyse and self-evaluate the levels of environmental competence formation.

At the first stage, of the pedagogical experiment we conducted a survey and testing of students in the experimental and control groups in order to identify the levels of future preschool teachers' ecological competence. In addition, they were asked to perform practical tasks, fill self-assessment sheets; lecturers also filled sheets of assessment the formation of students' environmental competence components.

The selected criteria and indicators made it possible to determine the levels of future preschool teachers' ecological competence and were presented as high, medium and low levels. The three-point scale was chosen for calculation of diagnostic results: the low level was determined from the range of points between 0 and 0,9, while the medium level was determined from 1 to 1,9 points and high level – from 2 to 3 points.

The future preschool teacher's level of ecological competence was calculated in this way: we determined the average score as the arithmetic mean of the scores for each student according to every singled-out criterion:

$$B_i = \frac{B_{i1} + B_{i2} + B_{i3} + B_{i4}}{4},$$

where:

B_{i1} – score for motivational criterion,

B_{i2} – score for gnostic criterion,

B_{i3} – score for activity criterion,

B_{i4} – score for reflexive criterion,

$i = \overline{1, 544}$.

The generalized results of future preschool teacher's level of ecological competence in CG and EG are given in table 1.

Table 1. *Results of determining the future preschool teacher's level of ecological competence (at the beginning of the experiment)*

Manifested levels	High		Medium		Low	
	absolute value	%	absolute value	%	absolute value	%
Control (47)	8	17	25	53,2	14	29,8
Experimental (45)	6	13,3	23	51,1	16	35,6

(Source: Authors own contribution)

According to the data in the table, the vast majority of students (53,2% in CG and 51,1% in EG) have a medium level of ecological competence.

The analysis of questionnaire results revealed, that in general, students had a formed focus (motives, values, interests) on the realization of

preschool children's ecological education (80% (EG), 82,9% (CG)), but only few of them had interest in the study and appropriate use of European experience of environmental security and education (15,5% (EG), 19,2 (CG)).

The analysis of students' testing showed, that only 8,8% students in EG and 10,6% in CG had a high level of knowledge about ecological education in EU countries, international nature protection organizations, the state of the environmental situation in the EU, the main measures in its countries to preserve the natural environment.

The majority of future educators (42,2% in EG and 40,4% in CG) could not name the EU regulations on the organizing of environmental security in the country and the implementation of ecological education; regions of EU countries that differ in environmental policy; international governmental and non-governmental organizations in the field of environmental protection and environmental management; directions of Ukraine's participation in cooperation with the EU on environmental protection; types of educational institutions of European countries, which carried out ecological education of children purposefully (ecological kindergartens, forest kindergartens, Mule school).

The analysis of students' practical tasks proved, that respondents had insufficient skills to use knowledge of European experience in environmental safety and education for developing a program of ecological education of Ukrainian preschool children; students had minimal knowledge, mainly focused on the realities of ecological education in Ukraine. Thus, future preschool teachers demonstrated mainly the medium level of formation of these skills: 46,7% in EG and 46,8% in CG.

Besides students showed a relatively objective self-assessment; they indicated the lack of specific knowledge and skills to use European experience in environmental safety and education.

In particular, high level of this skill was evidenced by 11,1% of respondents in EG and 12,8% in CG; medium level – 48,9% in EG and 51% in CG; low level – 37,8% in EG and 34% in CG.

Summary results of all components diagnostics in the control and experimental groups are presented in table 2.

Table 2. *Dynamics of changes in students' ecological competence according to the determined components*

Manifested levels	Experimental group (45 students)			Control group (47 students)		
	<i>Before the experiment</i> , %	<i>After the experiment</i> , %	<i>Dynamics of changes</i> , %	<i>Before the experiment</i> , %	<i>After the experiment</i> , %	<i>Dynamics of changes</i> , %
1.	2.	3.	4.	5.	6.	7.
<i>Motivational component</i>						
high	13,3	20	+6,7	17	17	0
medium	51,1	62,2	+11,1	51,1	55,3	+4,2
low	35,6	17,8	-17,8	31,9	27,7	-4,2
<i>Gnostic component</i>						
high	11,1	20	+8,9	12,8	12,8	0
medium	46,7	68,9	+22,2	46,8	51	+4,2
low	42,2	11,1	-31,1	40,4	36,2	-4,2
<i>Activity component</i>						
high	8,9	17,8	+8,9	10,6	12,8	+2,2
medium	46,7	66,7	+20	46,8	48,9	+2,1
low	44,4	15,6	-28,8	42,6	38,3	-4,3
<i>Reflexive component</i>						
high	13,3	22,2	+8,9	14,9	17	+3,9
medium	48,9	62,2	+13,3	51	53,2	+2,2
low	37,8	15,6	-22,2	34	29,8	-4,2

(Source: Authors own contribution)

The second stage of the experiment was aimed at the teaching of the course "Implementing the Strategy of Environmental Security: Integration of European Experience" and realization of certain tasks during the pedagogical practice in the preschool educational institutions.

The purpose of the course was to form future preschool teachers' ecological competence on the basis of the European experience in the implementing the environmental security strategy and education.

The main tasks of learning the discipline were:

- increasing the interest in ecological safety problem and ways of its solution in Ukraine and EU countries;
- providing students with deep system knowledge about the EU experience in environmental security issues;

- developing the abilities to design ecologically safe cultural and educational environment in preschool institutions, drawing on the European countries experience;

- forming professional skills of analysis and evaluation of the European experience in implementing the environmental safety strategy and its creative implementation in their own professional activity.

During the second stage of pedagogical experiment, we developed future preschool teachers' specific competences, taking into account the competences and program learning outcomes stated in the Standard (Ministry of Education and Science, 2019). The students gained complex of specific competences (namely, ability to acquire consciously and purposefully professional knowledge and skills, necessary for the successful implementation of preschool children's ecological education; the ability to analyse foreign experience in environmental security and organization of ecological education in the EU and to implement it appropriately in their own professional activity; the ability to analyse and assess the levels of their own environmental competence) and program learning outcomes (to be able to search, analyse and evaluate information on environmental safety and the organization of ecological education in the EU countries; to compare domestic and foreign experience in environmental security and ecological education and to allocate its elements for introduction into practice of preschool educational institutions as an educator; to possess technologies of the organization of the natural and ecological environment taking into account the European experience in ecological kindergartens creating; to possess technologies of the preschool children's ecological education organization using the experience of ecological and forest kindergartens, Mule school; to be able to disseminate the experience of their own activity on the website of the educational institution, in the media, the Internet, during seminars, conferences).

The curriculum of the course consisted of the following 4 sections: 1. Regulatory framework on environmental safety issues in the EU. 2. International organizations activities based on issues of protecting and saving natural environment. 3. Ecological education in EU countries. 4. The introduction of the European experience on implementing the ecological safety strategy on the territory of Ukraine.

The volume of the course was 90 hours (3 credits), namely 24 hours of lectures, 16 hours of practical classes and 50 hours of students' independent work.

During the teaching of our course we used lectures-dialogues, binary and problem lectures with elements of discussion and accompanied the

material with multimedia as well as practical classes built on the technologies of positional and interactive learning.

During the pedagogical practice, students implemented some tasks of self-developed programs for preschoolers' ecological education; their content had to reflect the experience of ecological education of children in the EU.

In the third stage of the pedagogical experiment a checking survey was conducted to identify the dynamics in levels of future preschool teachers' ecological competence. The table 2 shows the dynamics of changes in the levels of the respondents' ecological competence components in the experimental and control groups according to the determined criteria.

The data presented in table 2 show a significant positive trend in all components of future preschool teachers' environmental competence formation in EG.

EG students (20% – high level and 62,2% – medium level) in contrast to CG students (17% – high level and 55,3% – medium level) clearly showed interest in studying and appropriate use of foreign experience in environmental safety and education in the future professional activity.

Future preschool teachers in EG (20% – high level and 68,9% – medium level) became more aware of the regulations of the EU on creation of environmental security in the country and the implementation of ecological education; knew the regions of EU countries that differ in environmental policy; named more international governmental and non-governmental organizations in the field of environmental protection and environmental management; identified directions of Ukraine's participation in cooperation with the EU on environmental protection; characterized the educational institutions of the EU countries, which purposefully provide ecological education for children.

EG students (12,8% – high level, 48,9% – medium level) demonstrated the ability to use knowledge about the features of environmental safety and education on the basis of European experience during the developing a program of ecological education for preschool children.

Small part of students' self-assessment of the levels of ecological competence formation (22,2% in EG and 17% in CG) coincided with the expert assessment. 62,2% of EG students and 53,2% of CG students began to evaluate themselves more objectively – they demonstrated the medium level of environmental competence's reflective component formation.

The obtained results revealed the most positive changes according to the gnostic component of ecological competence among the students of

EG. Its high level increased by 8,9%, and the medium by 22,2%. In CG, the high level of this component remained unchanged, the medium – increased by 4,2%.

The table 3 represents the generalized results of future preschool teacher's level of ecological competence after the experiment

Table 3. *Results of determining the future preschool teacher's level of ecological competence (at the end of the experiment)*

Manifested levels Groups (number of students)	High		Medium		Low	
	absolute value	%	absolute value	%	absolute value	%
Control (47)	8	17	28	59,6	11	23,4
Experimental (45)	15	33,3	25	55,6	5	11,1

(Source: Authors own contribution)

Teaching students the course "Implementing the Strategy of Environmental Security: Integration of European Experience" contributed to the increasing their interest in foreign experience in environmental safety and ecological education of preschoolers, motivation to use elements of EU experience in their own professional activity; promoted the deepening of students' natural-ecological, psychological-pedagogical, professional-methodical and special knowledge about the peculiarities of ensuring environmental safety and organization of ecological education in the countries of the EU and the forming of skills to use them in future preschool teachers' own professional activity; formed the ability to analyse and assess their own environmental competence.

5. Discussion

The analysis of the obtained results of our research has confirmed the positions of scholars: in particular Munasyanova-Motyash's (2016) idea that ecological competence becomes a universal, interdisciplinary, integral and socio-cultural issue; Glazacheva's and Glazachev's (2013), Alekseev's (2006), Konovalchuk's (2016), Makarova's and Stepanova's (2020) positions that ecological competence is an integrative personal characteristic, which combines knowledge and skills in the field of ecology and environmental protection, experience in solving environmental problems; Makarova's and Stepanova's (2020), Galtseva's et al. (2017) views on the main structural components of teacher's ecological competence (motivational, gnostic, activity); Tchaikovska's (2012) opinion about the stages of students'

ecological competence forming (forming of ecological ideas; forming of attitude to nature; forming of skills and technologies to interact with nature).

Based on the results of our research, the definition of the concept of “future preschool teacher’s ecological competence” was also clarified. We have defined it as a dynamic combination of orientation on own ecological sound behaviour and ecological education of preschoolers, natural-ecological, psychological-pedagogical, professional and methodical knowledge and abilities to use them in the process of pupils’ ecological culture foundations forming, abilities to apply foreign experience of ecological safety and education and to develop own creative potential in preschool children’s ecological education; and we also have specified its components (motivational, gnostic, activity and reflexive).

The authors of the article have enriched the components of preschool teachers’ ecological competence with the knowledge of environmental security in the EU, features of preschool ecological education and skills to apply this knowledge in ecological education of preschoolers. Besides, authors have proposed a system for diagnosing and assessing the future educators’ ecological competence.

The outcomes of our study also have expanded and refined the results of Kuchay’s (2010), Sichko’s and Yurchenko’s (2011), Shulzhenko’s (2003), Dlimbetova’s et al. (2015), Galtseva’s et al. (2017) studies on the features of training teachers and specialists in ecological education in higher education institutions in foreign countries. Particularly, we have proposed the system of future preschool teachers’ ecological competence forming with using the experience of EU countries, and have developed the course “Implementing the Strategy of Environmental Security: Integration of European Experience” and ecological and pedagogical content tasks for pedagogical practice. This system logically connects the students’ theoretical knowledge and their ability to apply them in practice for the ecological education of preschoolers, and has a positive effect on the forming of future teachers’ ecological competence.

The global ecological crisis, the need to eliminate it and the importance of solving the problem of a bioecocentric type consciousness forming among the planet’s population from preschool childhood can make the materials of the article interesting for the entire international community. The results of study on the forming future preschool teachers’ environmental competence, which implies the ability to use the European experience of environmental security and education of preschoolers, presented by the authors of the article, can be adapted for applying in the future teachers’ professional training in any country of the world.

6. Conclusion

The results of the research allow us to draw the conclusions that the problem of future teachers' ecological competence formation is relevant for Ukraine and the EU.

The future preschool teachers' ecological competence as a component of professional competence is formed during their studying in the institution of higher education or in the system of professional training. The educator's ecological competence consists of the motivational, gnostic, activity and reflexive components. The level of its formation is expressed in the same criteria and appropriate indicators.

According to the results of the initial diagnosis, the students who participated in the experiment had a medium level of ecological competence (53,2% in CG and 51,1% in EG).

In order to increase the levels of ecological competence the students of EG were taught the course "Implementing the Strategy of Environmental Security: Integration of European Experience" and offered to perform the task during the pedagogical practice on the basis of preschool educational institutions.

The use of the EU's experience in environmental security and education for formation the future teachers' ecological competence had a positive effect on the dynamics of levels of this quality. Thus, the number of respondents with a high level increased by 20% and with a medium level by 4,5%; the number of students with a low decreased by 24, 5% in EG. In CG the number of students with a high level remained unchanged, with a medium level increased by 6,4%, and with a low of ecological competence decreased by 6,4%.

The formation of future preschool teachers' environmental competence is effective if: 1) students study the course "Implementing the Strategy of Environmental Security: Integration of European Experience"; 2) educator uses lectures-dialogues, binary and problem lectures with elements of discussion and accompanies the material with multimedia during the teaching of the specified discipline; 3) lecturer builds the practical classes on the technologies of positional and interactive learning; 4) the program of pedagogical practice is enriched with the tasks on formation students' abilities to apply experience of preschool ecological education of the EU countries; 5) future teachers intend to self-improvement in the ecological education of preschool children with the appropriate use of foreign European experience.

The further work involves developing the pedagogical conditions for the implementation of continuity the bachelors' and masters' in Preschool Education ecological competence formation on the basis of foreign experience in environmental security and education.

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