Future Preschool Teachers' Search and Research Skills Formation During Professional Training

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Based on the established essential characteristics and the structure of professional training of students, taking into account the results of the observational experiment, the levels of future preschools' teachers search and research skills formation of preschool institutions were determined. The methods of scientific research were the analysis of scientific and methodological literature, educational documentation on pedagogical practice, questionnaires of future educators, as well as observation of research activities of students of higher education institutions. Analysis of psychological and pedagogical research, conducting a statement experiment made it possible to establish the features of the structural elements of research activities. The research experiment made it possible to check the level of formation of research skills in students – future educators of preschool education, as well as how they master the motivational-value, content-procedural, research components of professional training, acquire knowledge and research skills. The results of the inspection were carried out in accordance with the developed criteria, indicators and levels of research skills of future educators of preschool educational institutions.

Keywords: research activities, future educators, pedagogical practice, knowledge and skills

INTRODUCTION

The solution to the problem of readiness of future educators of preschool educational institutions for professional activity largely depends on the formation of their research skills, which enables the ability to successfully perform professional and pedagogical tasks, to carry out exploratory work as the knowledge, skills, and practices of early childhood educators are important factors in determining how much a young

child learns and how prepared that child is for entry into school (Sheridan et al. 2009). Future preschools' teachers search and research skills formation institutions, which takes place throughout the period of study at a higher pedagogical educational institution, becomes necessary to resolve contradictions between "requirements for educational and research activities and the existing level of students' readiness for research activities; the need to increase the level of readiness for educational and research activities of future educators and the lack of a scientifically sound system of their training; rapid rates of accumulation of scientific and pedagogical knowledge and limited opportunities for their assimilation; requirements for teachers to carry out research activities and internal motives of students, their needs and characteristics"(Gavrysh, 2007; Horvat and Kuzma-Kachur, 2021).

This problem, among other important pedagogical issues in their works and research, has been repeatedly raised by Ukrainian theorists and practitioners of pedagogical science, as well as by foreign scientists and researchers. In the context of the initiated investigation, the fundamental works of prominent psychologists L. Vygotsky (1996), G. Kostyuk (1989), and O. Leontiev (2004) have an important role in developing the foundations of the theory of pedagogical activity (Rubinstein, 1989). Their approaches and views are of some interest in the aspect of considering the problem we are researching, and some of them have become the basis of our research. Modern Ukrainian scientist investigate this problem from the point of different contexts. The analysis of scientific sources showed that the study of the problem of future preschools' teachers search and reseach skills formation in professional training is devoted to the works of Artemova (Artemova and Kosenko, 2000), Bielienka (2011), Bogush (Bogush and Gavrish, 2008), Lysenko (1996) studied the preparation of primary school educators for the organization of ecological research activities of children in nature.

One of the aspects is also dedicated to the foreign experience usage (Melnyk et al., 2019). According to this research each student is assigned a tutor or a coach from among the employees of a preschool institution or a centre for practical training, who supervise professional activity of future specialists. Upon completion of the practical training, they are provided with a detailed description of their professional competency development and recommendations for further improvement of their professional skills, which leads to the formation of investigative and creative work proving within professional practice (Melnyk et al., 2019).

Among modern European and American researchers, the problems of future early childhood educators search and research skills formation are considered from the different point. According to investigation about Professional Development in Early Childhood Programs, in which search and research skills are concerned in the context of Modern understanding of the essence of professional development the future early childhood educators professional training is aimed to accomplish two primary objectives: first, it is anticipated that professional development will advance the knowledge, skills, dispositions, and practices of early childhood providers in their efforts to educate children and support families; second is to promote a culture for ongoing professional growth in individuals and systems (Candy, 1991; Johnson and Johnson, 1989). The first objective concerns the advancement of practitioner knowledge, skills, and dispositions (Katz, 1990; 1995).

As for the knowledge aspect, Ukrainian scientists explain it as a dynamic education, which "is constantly changing, is in motion, depends on many conditions of social and individual nature. Of course, the tendencies to expand, deepen and improve the individual system of knowledge are considered promising" (Erofeeva, 1986; Kiveralg, 1980). According to Fleet and Patterson (2001), Paris and Winograd (1990), Riley and Roach (2006), practitioner knowledge consists of facts, concepts, ideas, vocabulary, and related aspects of educational culture and best practice. The scientists consider that skills consist of units of action that occur in a relatively discrete period of time and that are observable or easily inferred. They are learned through direct instruction, modelling and imitation, trial and error, discovery, or other methods, and they are modified or improved through feedback, guidance, practice, repetition, drill, and continuous use. Finally, dispositions are prevailing tendencies to exhibit a pattern of behaviour frequently, consciously, and voluntarily. The pattern of behaviour is directed to a broad goal rather than a limited, short-term purpose. Dispositions are distinguished from skills in being broader in scope and including a motivation to be applied and put to use (in contrast, one can have a skill but no desire to use it).

The essence of research is based on the general psychological concept of activity, which was developed by Vygotsky (1996), Davydov (Davydov and Rakhimov, 2002), Leontiev (2004), Rubinstein (1989). According to Leontiev (2004), activity is "a process organized by the subject and the external environment. The subject is usually the aspect that can be included in the structure of activity at a certain stage of development". According to the study, Volynets (2013) readiness for research activity consists of the following three main components: motivational-value, content-procedural, and research. In the process of learning in higher education we distinguish the following stages of formation of research skills: motivational and value, aimed at revealing the importance of research skills for the future teacher; semantic-procedural, which consists in mastering fundamental knowledge as a theoretical basis of skills; theoretical awareness of the essence, structure, organization of pedagogical activities; practical mastering of the system of research skills in the educational process and during pedagogical practice; research, aimed at further development of research skills during search work, research and practical work of students.

Analysing the works of Ukrainian and foreign scientists on the outlined problem, we came to the conclusion that research contributes to the internal movement and self-movement of the subjects of pedagogical interaction and the development of personality qualities that ensure success in research. Under such conditions, the formation of research skills of the future educator of preschool education is seen as a process of creating favourable conditions for such professional training in the learning process, which would ensure the development of personal qualities and professional skills that contribute to pedagogical research and transformation. self-development of the teacher.

MATERIALS AND METHODS

The object of the initiated research is the professional training of future educators of preschool educational institutions. The subject of scientific interest within the study is the content and technological support for the future preschools' teachers search and research skills formation of preschool educational institutions. Given the above, the purpose of the study presented in the article is to test the content and technological support for the future preschooler teachers' search and research skills formation and the prospects of the proposed tools in the context of the practice of European institutions of pedagogical education. To achieve this goal, the following objectives of the study are identified: 1) to analyse the state of the researched problem in pedagogical theory and practice and to find out the essence of "research activity of future educators of preschool institutions"; 2) experimentally to determine the criteria, indicators and levels of future preschools' teachers search and research skills formation of preschool educational institutions; 3) to test the author's content and technological support for the future preschools' teachers search and research skills formation of preschool educational institutions and to check its effectiveness.

The process of formation of research skills is influenced by various factors, so the solution of this problem always involves variability in the selection of forms and methods of educational and cognitive activities, which is based on their individual characteristics and comparative effectiveness. In the course of the research, we came to the conclusion that the main methods of educational and cognitive activities that contribute to the development of research skills are: heuristic search (heuristic conversation-search); work with information sources, teaching-dialogue; problem statement method; research method (method of collective search of original ideas, method of solving creative tasks and tasks, laboratory experiment); educational role-playing games (micro-teaching, role disputes, role-playing games).

The following methods of educational and cognitive activity are used in the educational process of higher education institutions in order to form research skills in students – future educators of preschool education institutions:

- work with an information source – this method is most effective for independent search, systematization, classification of scientific information, problem solving and establishment. connections. Increases students' interest, stimulates their intellectual activity;
- teaching-dialogue – this method is the most effective for the analysis, synthesis, systematization and classification of scientific information, as well as for block teaching of new and up-to-date information; heuristic search or method of research and discovery is aimed

at activating the intellectual activity of students by creating problem situations that are solved by hypotheses, generating ideas, making comparisons, comparing facts, and so on. Effective for the development of students' research skills;

- the method of problem statement involves the creation of problem situations, situations of novelty, posing problem questions and tasks, demonstrating the logic of their solution with the argumentation of each step of the search activity, which stimulates students to develop research skills;
- research method is used to create situations of a scientific experiment (experiment), the performance of educational and research tasks, which involves the student's research activities and is a set of logically related educational problems, in the process of solving which the future educator discovers new knowledge about the object of research, methods and techniques of research activities. This method stimulates active research activities of students, promotes the comprehensive development of their research skills.

The study was conducted on the basis of the Borys Hrinchenko University of Kyiv and the Kyiv Regional In-Service Teacher Training Institute during 2015-2019 and included four stages. Each stage of the formative experiment was specially organized, pedagogically managed and controlled.

At the first search and diagnostic stage (2015-2016), the analysis of the source base and the state of the researched problem in the psychological and pedagogical theory and practice was carried out; theoretical positions and methodological bases were developed, the purpose, tasks, object and subject of research were defined, the program of research work was developed. The effectiveness of the introduction of content and technological support for future preschools' teachers search and research skills formation institutions was tested during the formative stage of the experiment. The key stage of the formative stage of the experiment was to determine the level of research skills of future educators of preschool education in experimental and control groups according to the developed methodology, which is based on questionnaires for each component (motivational-value, content-procedural, research) and independent testing. During the first stage of the formative experiment, the students laid the motivational basis for future scientific and pedagogical activities through interviews, questionnaires, testing, interviews, discussions and analysis of specific pedagogical situations. As a result, most students of the experimental groups had an interesting attitude to the proposed type of activity, thus creating conditions for the intensification of the educational process.

At the second stage of modelling (2016-2017) the scientific substantiation of the general research methodology, formulation of theoretical bases, development of the model of the process of formation of research skills in future educators of preschool education institutions, disclosure of essence and content of its components was carried out; formation of research skills defined in the model; establishment of methodical bases of realization, development and improvement of educational programs, creation of a complex of research tasks for students of I-IV courses of EQL "bachelor" in the direction of preparation "Preschool education" of a full-time form of training; determination of criteria, indicators and levels of future preschools' teachers search and research skills formation of preschool education institutions; conducting the ascertaining stage of the pedagogical experiment.

The second stage of this experiment is aimed at the formation of professional consciousness, which manifested itself in the formation of new professional values of students. They got acquainted with the system of requirements that need to be guided by the full and correct performance of professional and pedagogical tasks, analysed and substantiated the purpose, the necessary conditions and methods of implementation. The next step was the practical implementation of actions in compliance with all the necessary components of scientific and pedagogical activities and the sequence of their implementation. Active formation of research skills necessary for pedagogical activity took place during the development and implementation of educational pedagogical projects in simulated and real conditions of the university during pedagogical practice and required students to show independence, initiative, creativity, perseverance and more. The main content of educational and cognitive activities of students at this stage of the study were creative tasks, preparation for seminars, writing essays, essays and more.

At the third stage – experimental (2017-2018), the content-technological support (content, forms and methods) of the process of formation of research skills in future educators of preschool education institutions was experimentally tested; systematization, generalization of results of forming experiment were carried out; implementation of results in educational programs, special course "Future preschools' teachers search and research skills formation" and educational and methodical developments, covered in professional publications for students of EQL "bachelor" in the direction of training "Preschool education". The third stage of the formative experiment involved gaining minimal practical experience in the formation of research skills, including writing bachelor's theses, which are the result of long-term systematic work of students based on their independence, the dynamics of knowledge and skills for research: study of the main sources, compilation of bibliography, formulation of the purpose, tasks, substantiation of their urgency, drawing up of the plan of research; analysis of philosophical, scientific and methodological literature on the researched problem; selection of methods and techniques of the ascertaining part of the experiment, analysis of its results, specification of tasks; systematization and generalization of results, formulation of the main conclusions of the research; registration of bachelor's work in accordance with current requirements; preparing students for the defence of works and the defence itself.

During the fourth stage – analytical and corrective (2018-2019) the results of the pedagogical experiment were summarized; methodical recommendations were developed to improve the content and technological support for future preschools' teachers search and research skills formational institutions, testing and implementation of research results in the educational process of higher education institutions; the prospects for further research of the problem were determined; the research was executed in accordance with the current requirements. Since future preschooler teachers' search and research skills formation requires a set of research skills, the development of student's research potential should be carried out in a single system mode. Research activity in this regard plays the role of a system-forming factor in the theoretical and practical work of future educators of preschool education, which ensures the unity of activity and personal approaches in the process of complex formation of research skills.

To determine the sample (number of students), we used the method of calculations according to I. Cochran (1942). According to this method, the value of the sample is determined by the formula:

$$n = \frac{1}{\Delta^2 + \frac{1}{\sqrt{N}}} \quad (1)$$

where n is the volume of the sample required for the reliability of the results; Δ^2 – error value (0.05); N – general population (number of future educators of preschool educational institutions who annually graduate from higher educational pedagogical institutions in the direction of training "Preschool education"). According to calculations, the minimum sample size is 50 students. 382 students of the control and experimental groups were involved in the experiment, which is enough to obtain reliable data.

The dynamics of the formation of professional pedagogical skills was determined by questionnaires, testing, expert evaluation with statistical processing of the obtained data. The levels of formation of the main professional skills of future preschools institutions' teachers are established according to the criteria presented in the dissertation. We determined the knowledge of students in the theory of research activities through a questionnaire, which provided for the distribution of students by self-assessment of knowledge. Future preschool teachers were asked to assess their ideas and knowledge on the basis of the questions on the following scale:

- 3 – "I have no idea";
- 2 – "I know something";
- 1 – "I have a bad idea";
- 0 – "I cannot explain";
- +1 – "I understand what I am talking about";
- +2 – "I can explain to others".

By accepting the self-assessment, which has a sign "+", for medium and high levels of knowledge, we were able to determine the qualitative success of knowledge theory on the problem of research.

Thus, the generalization of the results of the questionnaire confirmed our conclusions at the ascertaining stage of the experiment: according to traditional education, students have a low level of knowledge on this problem, i.e. they are not ready for this type of work. Therefore, taking into account the above, it is necessary to carry out systematic and purposeful professional training of students for the formation of research skills, which involves improving the content and technological support of the educational process. This approach, in our opinion, contributes to the mastery of students' conceptual apparatus, accelerates the process of formation of research skills and application of acquired knowledge in practice. As a result of natural entry into the future professional environment, implementation of research projects and pedagogical experiment, students develop skills of forming personal judgments, the ability to discuss, defend their point of view, articulate, argue their own opinions, approach the problem creatively. In addition, such an organization of educational activities significantly increases the level of development of students' competencies, the ability to adapt to new skills and activities, forms an interest in science, creates conditions for the development of research skills.

The effectiveness of content and technological support for future preschools' teachers search and research skills formation and abilities for research activities was established by experts from among teachers of psychological and pedagogical disciplines of higher education institutions based on determining the average values of each component of readiness for this activity. To calculate it, we calculated the initial and final levels of formation of students' motivational-value, content-procedural and research components of future preschools' teachers search and research skills formation. Future preschools' teachers search and research skills formation is completed by comparing the level of readiness achieved by each student with the normative-sufficient for the implementation of research activities at a certain quality level through control. The application of control is explained by the need to determine the intermediate results of training and establish feedback, through which you can adjust the content, methods and tools of training future professionals.

The object of control was the educational activity of students during the mastering of the special course "Formation of research skills of future educators" and its results. Educational research of students is determined by assessing: knowledge – the quality of answers (oral or written) of students, the level of their assimilation of educational information; skills and abilities – the level of their formation during the implementation of training and control tasks. The main criteria for assessing the educational activities of students – its regularity, activity and effectiveness. The main indicators of systematic educational activity are the attendance of students of all lectures and seminars of the course and the timely implementation of educational and control works.

At the beginning of the school year, statistical criteria were used to process and analyse the results of the observational experiment, and to compare the distribution of experimental and control students of the first year by levels of mastery of the necessary professional knowledge and skills. The levels of formation of the components of the formation of research skills, we assessed by the formula:

$$R_p = \frac{K_p}{n} \times 100\%, \tag{2}$$

where *Kr* – the number of students by p-level; p-level – the level of formation of components of readiness for research activities of students (high, medium, sufficient, low); *n* – number of students in the group; *Rp* – the share of students in the total number of those who have this level (Chernihivska, 2011).

The dynamics of the level characteristics of future preschools' teachers search and research skills formation in the control and experimental groups, we calculated by the formula:

$$x = x_2 - x_1 \tag{3}$$

where x is the result of the dynamics of growth of the level of formation of research skills in future educators of preschool education; x_1 - the level of indicators of professional training of future educators of preschool education institutions for research activities in control groups (in %); x_2 – the level of indicators of professional training of future educators of preschool education institutions for research activities in experimental groups (in %). x_1 and x_2 are defined as the average quantitative indicators of professional training of future educators of preschool education institutions for research activities in CG and EG, respectively.

RESULTS

The results of the observational experiment allowed us to conclude that the content and technological support for future preschools' teachers search and research skills formation needs to be expanded through theoretical provisions and practical skills of research work. The main factors that affect the effectiveness of this process are the systematic formation of research skills in future educators of preschool education; humane and personal interaction of the subjects of this activity; study and dissemination of best practices; research self-improvement; research orientation of teaching different disciplines; individual, group and extra group work with students; independent research work of students; work with scientific and methodological sources. At the same stage, the results of the formative experiment were processed and analysed, and the distribution of students of experimental and control groups according to the levels of mastering the necessary professional knowledge and skills was compared using statistical criteria.

The basis of diagnosing the motivational-value component is based on the psychological theory of internal and external type of motivation. Effective evaluation activity of an educator of a preschool institution is provided by a motivational component, which is based on the internal positive motivation of professional activity in general and research activity in particular. Given the dominance of external negative motivational manifestations in the professional activities of the educator is its low efficiency, so the first task of the final diagnosis was to determine the general professional and pedagogical orientation of students of the experimental and control groups.

According to the instructions of the method, students determined the degree of importance of certain motivating factors in the choice and implementation of pedagogical activities. The conducted survey and the section of students' success allowed to make the following conclusions: 58.4% of first-year students consider research activity to be a necessary component of the future profession of a preschool teacher; 36.9% – consider it partially necessary, none of the students of the control and experimental groups did not consider the research activity as necessary in the professional training of future educators of preschool institutions. Since the main indicator that significantly differentiated the learning process in the experimental and control groups was the introduction of the developed methodology, we can conclude that under the influence of experimental learning changes the overall professional motivation and attitude of future educators of preschool education.

In the process of conducting the experiment it was determined that the process of formation of research skills in future preschools institutions teachers can be divided into several stages, which are based on the type of research experience that the student acquires. The first (informational) stage lasts during the first year. At this time, students are mastering the theoretical knowledge necessary for professional and research activities. Freshmen study "Introduction to the specialty"; perform seminar, practical, laboratory work in psychological and pedagogical disciplines; prepare abstract-scientific reports; participate in the work of student research groups, studios.

The second stage of the research, as already reported, was devoted to clarifying the essence of the concepts "pedagogical activity", "student scientific activity", "research activity"; as well as the study of curricula, programs for higher education institutions in order to establish general trends in the preparation of graduates for research activities; there was a study of the place of the special course "Future preschools' teachers search and research skills formation" in the system of formation of research skills of educators of preschool institutions; the basic didactic principles of formation of research skills at future preschools institutions' teachers were considered. Based on the analysis of scientific and pedagogical literature and

other relevant issues of the study, it was concluded that to ensure quality training of research skills in future educators of preschool education, it is necessary to develop its appropriate content and technological support.

At the second (content-technological) stage, which covers training in the II-III courses, the development of professional skills of future preschool teachers is carried out by organizing educational activities that require the identification of personal and professional qualities. At the same time, students' attention is focused on performing practical and laboratory work in professional disciplines, they gain experience in research activities during training and practical training. The discipline "Fundamentals of Scientific Research" is taught, which acquaints students with the basics of research activities and knowledge of methodology and technologies in order to actively involve students in research activities; diagnostic researches are carried out during pedagogical practice, course works are carried out. Students are involved in the preparation of scientific reports, participate in competitions, deliver reports at scientific and practical student conferences, etc.

The third (transformative-productive) stage, which lasts during the fourth year, is the final in the professional training of graduates of pedagogical institutions of higher education. During this period, students gain minimal experience of research activities, they have a need for further professional self-improvement. The main means of realization and development of research skills include: writing bachelor's theses; implementation of experimental research during continuous pedagogical practice; systematization of the "Data Bank of research activities" and portfolio; development of didactic materials for bachelor's theses, etc. During the psychological and pedagogical practice, students analysed and corrected the developed materials.

In students of control and experimental groups, the results of the levels of formation of research skills are almost the same. Note that the majority of participants in the experiment is dominated by a sufficient level of formation of motivational-value, content-procedural and research components. This trend is a worrying indicator for first-year students. The survey showed that almost all respondents, although undergoing an adaptation period, enjoyed learning, which was radically different from school. In the course of the experiment, ascertaining, three control and one final section were performed. The statement section recorded the initial level of development of scientific potential of first-fourth year students at the beginning of the educational year. The first and second control sections were performed to characterize the level of development of criteria for conducting research activities of students at the end of I and II courses, respectively. The next section recorded the level of formation of research knowledge and skills of students, the degree of independence and productivity of scientific activity, as well as their cognitive interest and reflection at the end of the third year. The experiment was completed by the final section – the end of the fourth year of study.

At the first stage of the experimental study, efforts were aimed at creating favourable conditions for adaptation, activation and development of cognitive interest in learning, including research. For this purpose, a set of pedagogical measures was applied, namely: the club "Psychologist in a preschool educational institution", creative laboratories of teachers were organized; innovative forms and methods were introduced in the classes, aimed at the successful acquisition of knowledge and skills for the implementation of pedagogical research, the formation of an adequate "self-concept" (Turrado-Sevilla et al., 2020).

From the obtained indicators of the intermediate section, we conclude that the process of mastering research knowledge and skills, productivity growth and reflection in the students of the experimental group was much more intense. A corresponding trend was observed for other criteria for the formation of research skills. Thus, the cognitive interest in research activities of students in the experimental group at a high level was 12.7% higher than in the control group. At the middle and elementary levels, the difference was 15.6% and 28.3%, respectively. The indicator of "creative activity" is also relatively higher in the experimental group. In particular, at a high level it is developed in 25.6% of students in the experimental group and in 16.4% – control, on average – 36.9% and 23.6%, respectively; on elementary – 37.5% and 60.0%, respectively.

The average statistical indicators by components were as follows: motivational and value component: high level – 12.3%, medium – 25.6%, elementary – 25.1%; content-procedural component: high level – 9.1%, medium –13.7%, elementary – 22.8%; research component: high level – 6.1%, medium – 11.8%, elementary – 17.9%. The difference in the compared general average indicators at the high level was 9.1%, at the average – 17.0%, at the elementary level – 22.0%. The analysis of the given data, and also the result of psychological and pedagogical observations, conversations, self-assessments and examination materials give grounds to assert that research skills are most intensively formed in the conditions of purposeful active involvement of students in research activities. No less important condition for the formation of research skills in the second stage of research is the level of mastery of research knowledge in both theoretical and practical terms.

The percentage of research knowledge and skills in the control group is also growing, but their formation was not purposeful, was carried out during the study of certain disciplines ("Introduction to the specialty", "General Psychology" and "General Pedagogy", "History of Pedagogy", etc.) and in the process performing reproductive tasks. In turn, the systematic formation of cognitive interests of students in the experimental group provides a higher percentage of students with high and medium coefficients of cognitive interest. This is mainly due to the intensive involvement of students in the experimental group in real research activities, which develop the need to identify the problem, resolve the contradictions that have arisen, and others. As for the students of the control group, they, of course, gradually develop a focus on research tasks, which is related to the requirements of the educational process, but the vast majority of these tasks are still reproductive in nature. This is one of the reasons that interest in creative tasks is insignificant or absent. The main motives for students in this category are the desire to get approval, to avoid bad grades, a sense of duty, and so on.

TABLE 1
LEVELS OF STUDENT'S RESEARCH SKILLS FORMATION ACCORDING TO THE RESULTS OF THE SECOND CONTROL SLICE (IN %)

Criteria	Readiness levels								
	High			Average			Elementary		
	CG	EG	D	CG	EG	D	CG	EG	D
Motivational and value component									
Cognitive interest	17.2	29.0	11.8	26.3	44.9	18.6	56.5	26.1	30.4
Self-assessment	2.3	18.5	16.2	25.1	40.0	14.9	72.6	41.5	31.1
Average indicators	9.8	23.8	14.0	25.7	42.4	16.7	64.5	33.8	30.7
Content-procedural component									
Knowledge	7.9	17.8	9.9	22.7	38.9	16.2	69.4	43.3	26.1
Creative activity	29.8	29.6	9.2	12.2	41.5	16.9	58.0	28.9	29.1
Skills	9.1	15.9	6.8	19.5	35.7	16.2	71.1	48.4	23.5
Average indicators	15.6	21.1	9.6	18.1	38.7	20.6	66.3	40.2	26.2
Researching component									
Effectiveness	0.6	21.5	10.9	24.0	40.2	16.2	65.4	38.3	27.1
Average indicators	0.6	21.5	10.9	24.0	40.2	16.2	65.4	38.3	27.1
General average indicators	2.0	22.1	10.1	22.6	40.6	17.8	65.4	37.5	27.9

Note. CG - control group; EG - experimental group; D is the difference in indicators.

The results of the next control section (end of the second year) showed that the growth of knowledge and skills, as well as the ability to self-analysis and independence of students in the experimental group occurred due to increased creative activity, which is directly related to motivational personality. This was facilitated by solving problem situations, using heuristic and research methods of teaching students, participating in group discussions of the results of creative tasks, writing essays, essays. Students develop

purposefulness, the ability to plan, organize and adjust independent research activities. In the control group, where the appropriate conditions were not created, there is a slight increase in the level of creative activity of students, and their ability to independent transformative research activities is not formed enough, as evidenced by the results of the second control section (Table 1).

Different rates of qualitative growth of student training were recorded in relation to other criteria for determining the readiness to perform research work. The difference in the compared average statistical indicators of the motivational-value component is as follows: at a high level – 14.0%; at the average level – 16.7%; at the elementary level – 30.7%; content-procedural component: at a high level – 9.6%; average level – 20.6%; elementary level – 26.2%; research component: at a high level –10.9%; average level – 16.2%; elementary level – 27.1%. The difference in the general average compared indicators has the following numerical data: at a high level – 10.1%; average level – 17.8%; at the elementary level – 27.9%.

The development of the scientific potential of EG students in the second stage of the study was carried out by performing research tasks related to the implementation of creative tasks, as well as through participation in creative laboratories of teachers and visiting the club "Psychologist in preschool". This contributed to the acquisition by future educators of preschool education institutions of selected knowledge and skills. Systematic consultations were held with students, reports were prepared for speeches at workshops, and information was collected. In addition, both traditional and non-traditional methods and forms of classes were used, the optimal combination of theoretical and practical research, the use of problem-based methods, which contributed to the formation of personally meaningful and purposeful work of students.

The level of readiness of students to actively participate in pedagogical research and thoughtful choice of their issues was defined by us as an indicator of independence, as well as the correctness and originality of creative work. The subject of abstract researches developed by us allowed to realize creative possibilities of students during search of a problem, formation and substantiation of subjects of researches, procedures of their performance. The project allowed students to be realized in various forms of activity: methodical development, didactic material, methods of solving certain educational tasks, etc. Project preparation involves the unquestioning implementation of a number of methodological requirements and guidelines that coincide with the requirements for course and bachelor's theses (relevance of the topic; its theoretical, practical significance; novelty of results; methodological validity; clear design, independence of literature selection). Writing term papers and bachelor's theses is an important means of developing and activating the creative abilities of students who implement them. This creates conditions for the formation of professionally important research qualities of future educators of preschool education, the implementation and development of creative potential of students.

Comparative analysis of the results of the third control section, given in Table 2, testified that the students of the experimental group showed a much higher level of knowledge both in the content and organization of classes on teaching methods and in the means of organizing pedagogical research, the ability to form a topic, to determine the way to solve it. It should be noted that the indicators of the components of readiness for research activities have increased. The difference in the compared averages is as follows: motivational and value component: high level – 16.0%, medium level – 16.8%, elementary level – 32.8%; content-procedural component: high level – 15.4%, middle level – 13.5%, elementary level – 28.9%; research component: high level – 16.9%, medium level – 17.2%, elementary level – 34.1%. The difference in the compared general averages is as follows: high level – 10.1%, average level –15.8%, elementary level – 31.9%. During the defence of creative projects and term papers, the vast majority of EG students demonstrated the originality of the structuring of work, which was performed according to the logic of scientific research and designed according to the rules.

TABLE 2
LEVELS OF FORMATION OF RESEARCH SKILLS IN STUDENTS ACCORDING TO THE RESULTS OF THE THIRD CONTROL SLICE (IN %)

Criteria	Readiness levels								
	High			Average			Elementary		
	CG	EG	D	CG	EG	D	CG	EG	D
Motivational and value component									
Cognitive interest	19.2	37.0	17.8	27.3	45.9	18.6	53.5	17.1	36.4
Self-assessment	16.3	30.5	14.2	26.1	41.0	14.9	57.6	28.5	29.1
Average indicators	17.8	33.7	16.0	26.7	43.5	16.8	55.5	22.8	32.8
Content-procedural component									
Knowledge	14.9	29.2	14.3	26.7	30.9	4.2	58.4	39.9	18.5
Creative activity	17.4	37.6	15.2	24.6	43.5	18.9	58.0	18.9	34.1
Skills	15.1	26.9	1.8	20.5	37.7	17.2	64.4	35.4	29.0
Average indicators	15.8	31.2	5.4	23.9	37.4	13.5	60.3	31.4	28.9
Researching component									
Effectiveness	17.6	34.5	6.9	25.0	42.2	17.2	57.4	23.3	34.1
Average indicators	17.6	34.5	6.9	25.0	42.2	17.2	57.4	23.3	34.1
General average indicators	17.1	33.2	0.1	25.2	41.0	15.8	57.7	25.8	31.9

Note. CG - control group; EG - experimental group; D is the difference in indicators.

Future preschools institutions' teachers were also trained to accumulate research material collected during the inclusion of students in various forms of work and in the process of pedagogical practice. After that, conditions were created for the experiment or its separate stage; organization of practical activities in accordance with the level of readiness of the student to implement a certain area of work with preschool children; improving the ability to use analytical research methods. Our efforts were aimed at developing the ability to draw scientifically sound conclusions based on the results obtained, mastering the technology of preparation of guidelines for the organization of educational and upbringing influences on preschool children. A system of creative tasks was developed for the students of the experimental group, which required the manifestation of research skills in the field of theory and methods of teaching preschool children. The results of such tasks were later to be reflected in the bachelor's theses. The consequences of such a comprehensive pedagogical study are reflected in the levels of formation of the indicator of readiness of graduates to conduct pedagogical research.

The results of the formative experiment showed that this integral quality in general and its constituent elements in particular are more developed in students of the experimental group (Table 3). As we can see, 38.9% of students in the experimental group and 22.3% of students in the control group have high-level research skills (Table 3). At the average level, respectively – 41.7% and 23.5%; at low – 19.4% and 54.2%. In addition, the former can be traced to the highest quality of special knowledge, which is reflected in the content of abstracts, creative, course and bachelor's theses, because research knowledge contributes to the development of skills to search and systematize the necessary information.

TABLE 3
INDICATORS OF FUTURE PRESCHOOL'S TEACHERS SEARCH AND RESEARCH SKILLS FORMATION (ACCORDING TO THE FORMATIVE EXPERIMENT, IN%)

Criteria	Readiness levels								
	High			Average			Elementary		
	CG	EG	D	CG	EG	D	CG	EG	D
Motivational and value component									
Cognitive interest	22.0	42.0	20.0	29.3	45.9	16.6	48.7	12.1	36.6
Self-assessment	13.5	42.5	29.0	34.1	44.0	9.9	52.4	13.5	38.9
Average indicators	17.8	42.3	24.5	31.7	45.0	13.3	50.6	12.8	37.8
Content-procedural component									
Knowledge	21.9	30.2	8.3	30.2	32.9	2.7	47.9	36.9	11.0
Creative activity	25.3	49.6	24.3	25.6	42.5	16.9	49.1	7.9	41.2
Skills	22.3	38.9	16.6	23.5	41.7	18.2	54.2	19.4	34.8
Average indicators	23.2	40.0	16.8	26.4	39.0	12.6	50.4	21.4	29.0
Researching component									
Effectiveness	14.3	41.7	27.4	27.0	43.3	16.3	58.7	15.0	43.7
Average indicators	14.3	41.7	27.4	27.0	43.3	16.3	58.7	15.0	43.7
General average indicators	18.4	41.3	22.9	28.4	42.4	14.0	53.2	16.4	36.8

Note. CG - control group; EG - experimental group; D is the difference in indicators.

In the experimental group, students demonstrated a higher level of mastery of the ability to speak in public, to present their work; succinctly, reasonably, concisely and convincingly present their views and answer questions. The main motives for turning to research for most students in the experimental group was personal attitude, acceptance and understanding of the importance of research, which indicates a high level of development of cognitive interest, i.e. students are guided by internal and external motives. Future preschools institutions' teachers, as a rule, are interested in opportunities for self-realization and self-development in future professional activities. At the same time, the experimental group showed a rather low level of interest in research activities, a significant number of students showed a passive attitude to the content of research work (12.1%); at the average level, cognitive interest is formed in 45.9% of students; at high – only 42.0% of participants in the experiment.

In fact, all students in the experimental group sought advice from higher education teachers during creative work, and only 15.0% of them did not need teacher advice. Instead, students in the control group needed constant help in performing creative tasks (49.1% – low level of activity). The average level of independence was found by 25.6% of students who had questions about the design of scientific, course and other types of research work, search for scientific sources, processing of statistical materials. At a high level, the indicator of "creative activity" is formed only in 25.3% of students.

Qualitative analysis of the productivity indicator revealed that 41.7% of students in the experimental group found a personally significant attitude to scientific activity, originality, depth and comprehensiveness of research, adherence to the logic of research when writing scientific papers, as well as active pedagogical practice. The average level of productivity is inherent in 43.3% of this category of graduates, and only 15.0% had an insufficient level of its formation. In the control group, only 16.3% of students were at a high level; on average – 14.3%, and 58.7% found a low level of productivity of research activities. In the process of experimental verification, the positive dynamics of the future preschools' teachers search and research skills formation, given in Table 4.

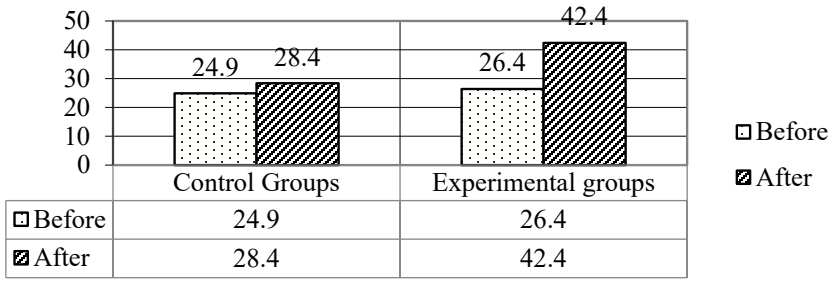
TABLE 4
DYNAMICS OF FUTURE PRESCHOOL'S TEACHERS SEARCH AND RESEARCH SKILLS FORMATION

Experimental groups			Control groups		
Levels	Amount of students, y %	Stages of the experiment	Levels	Amount of students, y %	Stages of the experiment
High	12.9	Statement stage of the experiment	High	13.4	Statement stage of the experiment
Average	26.4		Average	24.9	
Elementary	60.7		Elementary	61.7	
High	41.2	Forming	High	19.1	Forming
Average	42.4		Average	28.4	
Elementary	16.4		Elementary	52.5	

The results of the experiment confirmed a significant increase in the levels of future preschools' teachers search and research skills formation, in which in the experimental groups the high level was – 41.2%, in the control – 19.1%, the average in the experimental groups – 42.4%, in the control groups – 28.4%; elementary in the experimental groups – 16.4%, in the control groups – 52.5%.

The quantitative difference between the data of the comparative analysis of the future preschools' teachers search and research skills formation in the control and experimental groups before and after the experiment on average is shown in the histogram in Figure 1.

FIGURE 1
LEVELS OF FUTURE PRESCHOOLS' TEACHERS SEARCH AND RESEARCH SKILLS FORMATION IN CONTROL AND EXPERIMENTAL GROUPS BEFORE AND AFTER THE EXPERIMENT



	Control Groups	Experimental groups
Before	24.9	26.4
After	28.4	42.4

During the formative experiment, the content, forms and methods of organizing the selected disciplines were analysed, in the process of studying which the main tasks for the development of research skills and abilities are realized. Active research cognitive activity, implementation of project tasks individually and in groups, writing creative works are, in our opinion, essential among the conditions for the formation of research skills in future educators of preschool education. The need to motivate and intensify the research activities of students led to the use of its techniques at each stage of the formative experiment.

DISCUSSION

In order to improve the professional training of future educators for research activities, we will focus 575 on the chain of basic knowledge about the normative sphere of pedagogy: purpose of training –576 principles of training – model of training process – content, forms, methods of training –

training 577 result. We agree with the opinion of Belenka (2011), who notes that "the main purpose of training 578 future educators for research is to train highly qualified specialists, organizers of preschool education579 and upbringing, capable on the basis of deep knowledge of science, psychology, preschool pedagogy 580 and professional methods to work on the organization and management of logical and intellectual 581 development of children in the process of learning about the world around them" (Glovin, 2007). In order to improve the professional training of future educators for research activities, we will focus on the chain of basic knowledge about the normative sphere of pedagogy: purpose of training – principles of training – model of training process – content, forms, methods of training – training result. We agree with the opinion of Belenka (2011), who notes that "the main purpose of training future educators for research is to train highly qualified specialists, organizers of preschool education and upbringing, capable on the basis of deep knowledge of science, psychology, preschool pedagogy and professional methods to work on the organization and management of logical and intellectual development of children in the process of learning about the world around them".

Borisov (1996) also defines personality-oriented technology as a kind of pedagogical activity; process and result of creation (design) adequate to the needs and capabilities of the individual and society system of socialization, personal and professional development of man in an educational institution, consisting of specially designed for a given purpose methodological, didactic, psychological, intellectual, informational and practical actions, operations, techniques, steps of participants in the educational process, which guarantee the achievement of educational goals and the freedom of their conscious choice. The author includes the following actions, which are carried out both at the level of the whole educational institution and at the level of a specific teacher: specification and/or concretization of the model of the future specialist (prognostic type) and identification of the component provided by humanities. technologicalization of educational goals); selection of the content of educational material within a specific discipline on the basis of the state educational standard in all its manifestations: qualification characteristics of the professional and the results of marketing research needs in specific regions and sectors of the economy (technological interaction of goals and content of education); structuring of educational information taking into account the specifics of future activities, goals of personal development, features of thinking and perception of students (technologization of the presentation of primary subjects); correlation of basic classes in all disciplines studied in higher education institutions, in order to synthesize their content and the formation of a holistic perception and thinking of future professionals (technologicalization of the conceptual apparatus); deployment (organization) of pedagogical interaction through the use of personality-oriented educational technologies in terms of classroom and extracurricular communication (technology of personal-professional interaction of participants in the educational process); monitoring the qualities (control and correction of the process) of achieving educational goals set in the qualification characteristics of a professional, based on the use of personality-oriented procedures (feedback technology) (Borisov, 1996).

Bespalko (1980) believes that "pedagogical technology" is a scientific structuring (description) of the pedagogical process through analysis, selection, design and control of all its controlled components in all their relationships with the subsequent reproduction of the project in the classroom. We share the opinion of Sysoeva (2002), who believes that pedagogical technology is an active scenario for the organization of educational and cognitive activities of students in order to master the chosen profession. In its specific form, pedagogical technology is a predictable model of the system of actions of teachers and students, which must be performed in the process of optimally organized educational process in order to obtain a high level of professionalism. We also agree with the scientist's point of view that technology is based on the laws of learning and personal development, the dynamic processes of formation of intellectual, moral, social, spiritual traits and professional qualities. Pedagogical technology of education in higher education is based on clear criteria for diagnosing, forecasting, monitoring and correcting the changes achieved.

Thus, the concept of "pedagogical technology" is considered in the study as a set of actions, tools of the teacher, the components of which are material, algorithmic and psychological components that guarantee the activation and development of consciousness, high mental and physical performance of students. The study determined that the pedagogical technology of formation of readiness for research activities of students of pedagogical universities in the process of professional training is based on the

principles of pedagogical creativity: diagnostics (provides for the organization of educational process taking into account the results of assessing students' skills); optimality (expresses the need to select forms, methods and means of teaching, regardless of the level of development of skills and specific conditions of pedagogical work); creativity (identifying opportunities for content, forms and methods of teaching to strengthen its focus on the formation of research skills of students); variability (the need to overcome the monotony of content, forms, methods of teaching) (Sysoeva, 1998).

Content and technological support for the formation of research skills in future educators of the school to research activities includes: pedagogical assessment of the level of formation of students' skills for the implementation of experimental research activities; selection of the content of educational material on the formation of students' skills to carry out experimental research activities; determination of expedient forms and methods of realization of the content of professional psychological-pedagogical and scientific-subject disciplines; development of a system of didactic tasks for the formation of students' skills to carry out research activities; establishing a full type of control. Knowledge and skills in professional disciplines are an important element of pedagogical education, and the content of education, which is mastered by the future preschool teacher, provides in its pedagogical activity one of the main functions – it is a means of influencing the formation of the child's personality.

Contents of professional disciplines at the Pedagogical Institute of Borys Hrinchenko University of Kyiv and ("Introduction to the specialty", "General Psychology", "General Pedagogy", "Preschool Pedagogy", "History of Pedagogy", "Child Psychology", "Pedagogical Creativity", "Fundamentals of scientific research", "Fundamentals of pedagogical skills", "Information technologies in preschool education", "Child practical psychology", "Theory and methods of formation of elementary mathematical concepts", "Fundamentals of science with methods", "Psychology of children's creativity", "Theory and methods of native language development", "Children's literature (with methods)", "Foreign literature for preschool children", "Foreign literature for preschool children with methods", "Methods of work on ethnography", "Fundamentals of fine arts with methods "leadership", "Methodology of psychological and pedagogical research", "Preparing a child for school") affects the formation of research skills of future educators of blackboard helps to acquire the necessary knowledge, develop the ability to navigate the methodology of these sciences, to know their worldview potential and options for practice, during which there is effective interaction with preschool children, the development of their creative abilities in the educational process of preschool education.

In addition, the study of mathematical and natural sciences and computer science disciplines directs students to master the latest information and communication technologies (ICT). All professional subjects are mastered during the entire period of study in higher education institutions. The study of these subjects is an important reserve for the enrichment of pedagogical thinking, the basis for the formation of research skills of the future educator of preschool education, his ideas about ways and means of solving educational problems in preschool education. In the process of mastering these subjects, students also learn samples of pedagogical activities, nurture the features of the creative personality of the teacher-researcher.

Analysing the possibilities of the content of educational material for the formation of research skills of students, we use student readiness cards on a particular topic of professional disciplines, which allows us to analyse the content of educational material for effective use in the development of student skills. Based on the analysis of the content of educational material, the potential opportunities inherent in the content of educational professional disciplines in relation to the development of both the necessary skills and the creative personality of the future educator as a whole are revealed. This allows you to comprehensively use the content of educational material of professional subjects in order to enhance its effectiveness in developing skills to carry out research activities. In addition, this approach makes it possible to select such forms and methods of organizing the educational process that would ensure the most effective use of the content of a particular topic for the development of such skills that will contribute to further successful creative activity of future preschool teachers.

The main forms of teaching that contribute to the formation of research skills are: problem lectures; problem seminars; optional classes; exploratory independent work (individual tasks, creative tasks, creative works); laboratory-practical work; non-standard classes in the form of travel, research, conferences,

competitions, riddles, etc.; training conference; control testing; pedagogical practice. In our opinion, all these forms of teaching make it possible to effectively develop research skills by solving creative problems, solving educational problems, conducting discussions and scientific debates, using a variety of creative knowledge during classes. They also help to conduct a pedagogical assessment of the level of development of research skills and make adjustments in the process of their formation.

CONCLUSIONS

The study showed that the effective formation of research skills in future educators of preschool education significantly depends on research-oriented design of the educational process, taking into account the basic patterns and stages of the educational process. In our opinion, these active forms and methods of professional training of future preschools institutions' teachers should also provide students with mastery of research technology, which includes the formation of knowledge about research, theoretical foundations of such activities and stages of solving problems. It is necessary to conduct training minutes in which students acquire knowledge, skills and abilities of research activities; independent research actions and tasks; monitoring, i.e. mandatory coverage of the obtained results and on their basis planning of further research work.

The process of research work should be built on certain stages: preparatory (involves the choice of topic, the study of "history of the issue", i.e. what knowledge has accumulated by humanity on the topic at the moment); research (depending on the motive or needs, the task of the teacher at this stage – to help them understand. This stage is a certain algorithm. Problem – hypothesis (assumption) – experimentation – research results. In order for the results of research activities to be truly research work, students should be aware of the socially useful value of the actual application or use of the results of their work and present them in the form of presentations, exhibitions, albums, fairs, etc.

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