METHODOLOGY FOR ORGANIZING THE RESEARCH ACTIVITIES OF STUDENTS IN EDUCATIONAL PROCESS: RESULTS OF THE STUDY

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Abstract. The relevance of the investigated problem is related to transformational changes in primary school. The result of these changes was the construction of a new school that will function on the basis of joint and active activity, the atmosphere of research and cognitive cooperation between the teacher and students teaching who will be carried out through research. *The purpose of the study* is to substantiate theoretical foundations of the problem formation of research skills of primary school students in the educational process of the New Ukrainian school; develop and experimentally check effectiveness of organizational and pedagogical conditions for the implementation of this process. *Research task:* based on the analysis of psychological and pedagogical literature to reveal the theoretical foundations of the problem of formation of research skills of primary school students in the educational process of the New Ukrainian school; diagnose the initial state of formation of research skills of primary school students; develop and theoretically substantiate organizational and pedagogical conditions for the formation of research ability of primary school students in the educational process of the New Ukrainian school; carry out an experimental check of the effectiveness of organizational and pedagogical conditions of the researched process. *Object* of the study is the formation primary school students' research skills in the educational process of the New Ukrainian school. *Subject* of the study are the organizational and pedagogical conditions of formation of research skills of primary school students in the educational process of the New Ukrainian school. *Research methods:* theoretical (analysis of psychological and pedagogical literature, synthesis, comparison,

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generalization); empirical (pedagogical experiment (determinative, formative and control stages)); diagnostic methods (pedagogical observation, questionnaires, testing, poll)). The theoretical foundations of the problem of formation of research skills of primary school students of the NUS are defined and analyzed in the study, the basis of which are the ideas of scientists who defined the priority concepts of optimal research-oriented orientation of this process: actualization the personally transforming meaning of the search activity of the education seekers; creation of a climate of research and cognitive cooperation; construction subject-subject developmental communication between the teacher and the child as equal partners. *Results*. It is proved that the education seekers' organization of educational and research activities should be built on a cognitive and instrumental set of actions of a teacher and a child on a partnership based under certain conditions: motivation and purposeful involvement of students in independent performance of research tasks; taking into account individual and psychophysiological characteristics of students; activation of the intellectual and creative potential of each individual with stimulating the maximum realization of one's own natural capability, achieving success; effective application of innovative teaching forms and methods. Organizational and pedagogical conditions of formation of research skills of primary school students in the educational process of the NUS have been developed and scientifically substantiated, in particular: providing the educational process with a research focus by creating an educational environment of an active and searching nature; realization of potential talents and opportunities of primary school students during the performance of search and research tasks by application differentiated approach; acquisition and enrichment of primary school students' research experience through the actualization of developmental subject-subject interaction of teachers and students. *Theoretical significance* of the research is to discover and scientifically substantiate organizational and pedagogical conditions for the formation of research skills of primary school students in the educational process of the New Ukrainian school. *Practical significance* of the obtained results of the study is to experimentally check organizational and methodological providing process of the formation of research skills of primary school students in the educational process of the New Ukrainian school.

1. Introduction

Modernization of the State Standard of Primary Education, The concepts of the New Ukrainian School testify to the fundamental achievements as a result of global transformations and changes in the primary school with a new, research-oriented, educational paradigm.

The construction of a new school became the epicenter of these changes. It will function though an open dialogue of all participants in the educational process, bi-directional communication relationship through mutual assistance, compatible activities, creation of atmosphere of research cooperation, and studying will take place through researches.

The State Standard of Primary Education talks about formation of competence in education seekers, which provides the development of curiosity, the desire to look for and offer new ideas, independently or in a group observe and explore, formulate assumptions and draw conclusions based on conducted researches, study oneself and the world around by observing and researches [1]. And the result of these radical changes and updates should become a modern alumnus – mobile informed personality, that can predict consequences of decisions, quickly and efficiently adapt to changing life situations, with a developed holistic, critical thinking, that knows how to find non-trivial solutions, reasonably defend their opinion, communicate, interact, convince, with an orientation towards the productive achievement to the result. One of the tools and ways to solve the goal of general secondary education is introduction of stimulating generative learning, the learning through researches.

The fundamental basis of the research are the works that present:

– theoretical foundations of the organization of scientific research (S. Goncharenko, V. Zagviazynskiy, I. Ziazyun, I. Lerner, V. Maiboroda, N. Nychkalo, O. Savchenko, S. Sysojeva, etc.);

– organization of research activities of education seekers (V. Alfimov, V. Buriak, V. Verbytskii, M. Kniazian, L. Levchenko, G. Pustovit, etc.);

– formation of research skills in younger students (T. Bajbara, N. Bibik, V. Bondar, O. Onoprijenko, V. Palamarchuk, O. Savchenko, S. Skvortsova, G. Chernenko, etc.).

The purpose of the study is to substantiate theoretical foundations of the problem organization of students' research activities in the educational process of the New Ukrainian school; development and experimental

check of effectiveness of organizational and pedagogical conditions for the implementation of this process.

According to the purpose the following tasks are defined:

1. Based on the analysis of psychological and pedagogical literature reveal theoretical foundations of the problem of forming primary school students' research skills in the educational process of the New Ukrainian School.

2. Diagnose the initial status of formation of students' research skills primary classes.

3. Develop and theoretically substantiate organizational and pedagogical conditions of research skills of primary school students in the educational process of the New Ukrainian school.

4. Carry out an experimental check of effectiveness organizational and pedagogical conditions of the researched process.

Research methods: theoretical (analysis of psychological and pedagogical literature, synthesis, comparison, generalization); empirical (pedagogical experiment (determinative, formative and control stages)); diagnostic methods (pedagogical observation, questionnaires, testing, poll)).

2. Formation of research skills of primary school students as a scientific and pedagogical problem

Psychological and pedagogical analysis of the development of the research idea orientation of the pedagogical process showed that the object of our research has a complex, multidimensional and multi-vector status, and its research follows to be carried out in the coordinate system, which is specified by different levels of the methodology.

Based on the organic synthesis of social and natural processes, our future setting becomes the development of ideas about the essence of formation active cognitive activity of students of primary school age, which is the foundation of development and improvement of one's research skills.

A special and significant place in the system of reforming the general secondary school education is occupied by an actual scientific and pedagogical theory, the essence of which is showed in the Concept of the New Ukrainian school [2]. The document states that it is extremely important in the organization of the educational process in primary school is the development of research skills of applicants for education (updating

own experience, offering hypotheses, synthesis of acquired knowledge, observation, collection and information processing, establishing cause-and-effect relationships, drawing conclusions, cooperation, independent understanding of knowledge), which contributes to productive and effective implementation of educational and research activities of students, solving educational problems by stimulating the manifestation of creativity, independence, development of intelligence, critical thinking, making optimal decisions.

The most important task of education in the information society is becoming development of research skills, because they are targeted and oriented to research activity of students. Exactly research activities begin to encourage the successful formation of a multifaceted junior student, contributing general intellectual development of personality and directly such characteristics of mental actions as how to summarize, systematize and classify, ability to choose all possible solutions, move from the one task solution search to another, develop a program actions on their work, associate objects and their complex, as well as compose tasks on a given topic and carry out self-control [3, p. 91].

Ukrainian linguists M. Valushenko and S. Dubovyk note that teacher's use of various interactive methods in the lesson and techniques that ensure the development of creative activity of young students, formation of their research skills, divergent thinking, problematic visions, fantasy and imagination contributes to the successful implementation of research activities in the educational process [4, p. 3].

O. Marchenko emphasizes that in the process of forming research skills students study to independently acquire knowledge through the mastery of specific procedures: to see the problem and offer hypothesis for its solution; to plan and carry out experiments; reflect and evaluate their activities; transfer previously acquired knowledge and skills to a new situation [5].

Also the thesis by N. Nedodatko is suitable. Which is under educational and research skills understands complex mental formation, synthesis intellectual and practical skills, that are used for solving educational and research tasks and arise as a result of management mental development of students [6].

The results of the analysis of the scientific works of most scientists (V. Andreev, S. Bryzgalova, V. Zagviazynskiy, I. Zymnia, M. Kniazian,

M. Ovczynnykova, T. Orlova, O. Shashenkova) consider research skills through search activity, its scientific and research form:

– ability to apply the appropriate technique of the scientific method in the conditions solving an educational problem, performing research tasks (V. Andreev) – as a way of implementing "separated activity" (S. Bryzgalova) – specific knowledge and skills: it is important to be able to observe, analyze and generalize, highlight the main points, be able to predict the development of the phenomenon by few signs, see an alternative to the obvious solution, combine accurate calculation with fantasy and guessing (V. Zagviazynskiy);

– the ability to make independent observations, experiments, searches, that are acquired in the process of solving research tasks (I. Zymnia);

– purposeful actions that are based on the system of previously learned in the process of educational and cognitive and scientific and research education seekers' activities, abilities and skills and correspond to the logic of research activity (M. Ovczynnykova);

– general teaching and complex didactic skills that are implemented under the conditions of search and search and experimental activity (T. Orlova).

Carrying out a categorical analysis of the studied phenomenon in accordance with the concepts of domestic researches, we established that in pedagogical theory, there is no unified approach to defining the concept of "research skills".

In the context of our scientific exploration, we define research skills as the ability of the personality of a primary schools student to realize observation, comparison, analysis, search actions, synthesis of acquired knowledge from formed readiness for productive performance for tasks.

Scientific attempts to find out specific features of nature research activity of students led scientists to different conceptual conclusions, which were conditioned by various theoretical methodological principles, phenomenon, etc.

Let's take a closer look at modern classifications of research skills, for constructions of which scientists systematize according to certain characteristics (according to logic of scientific research, phasing of the activity process, defined aspects of research activities, etc.).

Interesting thoughts about the role of research activity in working with primary school students and its importance in personality development

are expressed by M. Valushenko and S. Dubovyk. In their creative work "Formation of research skills in Ukrainian language lessons" emphasized that one of the main tasks of the New Ukrainian school is education of a free personality, which is ready for self-development and continuous education; an important factor that gives ability to implement it successfully, is the involvement of younger schoolchildren in research activities, its implementation in the educational process activates mechanisms of the child's self-development and transforms learning into self-learning [4, p. 3]. Scientists distinguish that the main components of research skills are optional skills (observation, comparison, analysis, synthesis, classification, offering hypothesis, forecasting, reflation); technical skills (summarizing, abstracting, annotation, organizing an experiment, drawing conclusions, designing of research results); organizational (selection of methods and tools for work, self-control, self-analysis) and communicative skills (discussion, defending one's own point of view, cooperation, mutual assistance).

V. Lytovchenko [7] considers the following groups of research skills:

1) operational research skills (mental techniques and operations that are used in research activities: comparison, analysis and synthesis, abstraction and generalization, offering hypothesis, confrontation);

2) organizational research skills (application of organization techniques in scientific and research activities, planning of research work, introspection, regulation of own actions in the process of research activities);

3) practical research skills (elaboration of literary sources, conducting experimental studies, observing facts, events, processing of observation data, implementation of results in practical activity);

4) communicative research skills (application of cooperation techniques in the process of research activities, for implementation mutual assistance, mutual control).

In accordance with the above conceptual positions of scientists, it becomes clear, that the presented components of research skills cover methods and techniques of learning based on cooperation, principles of continuous developmental interaction between a teacher and students, formation of their research positions, behavior, practical skills of search, actualizing intellectual field, curiosity, sagacity and rationality of thinking.

Studying the problem of formation of primary school students' research skills in the educational process of the New Ukrainian school, we came to

the following conclusions: firstly, the search activity is especially bright manifests itself in childhood due to insignificant life experience personality and does not give it the opportunity to get answers to all questions that arise, therefore the period of childhood is a unique, crucial stage for the child's desire to learn about the surrounding world trough research; secondly, the implementation of research, reflexive and creative approach in the modern educational process provides an opportunity to transform to learning in self-learning, thirdly, exactly through the search, search activity there is a path of ascent of the individual to the real, deep self-realization takes place in a rapidly changing world, satisfying its own meta-needs.

3. Diagnosis of the initial state of formation of primary school students' research skills

Today's realities require a radical understanding, in context of research alternatives, and renewal of certain aspects of the educational process in institutions of general secondary education, focusing on actualization personally and transformative meaning of the search activity of primary school students, which requires teachers to create an atmosphere of research and cognitive cooperation, which will provide awakening, generative teaching which means accelerated transition to new, modified knowledge structures and research behavior.

In this regard, we consider it necessary at the ascertainment stage of the pedagogical experiment (2020–2022) to investigate target orientations regarding the process and state of formation of research skills of primary school students in the educational process of the New Ukrainian school: definition of their cognitive needs, desires for independent creative research activity; aspiration work in a group of young researchers, for experimentation; knowledge about working with information related to the planning of research activities; offering hypotheses; research presentations; diagnosis of mastery difficulties of theoretical knowledge, practical skills and competencies in carrying out search activities.

At the initial stage of the pedagogical experiment, 56 junior students of 2-4 grades on the basis of the Communal General Institution of secondary education "Balabinsk Gymnasium "Prestige" of Kushugum settlement council of the Zaporizhzhia district of the Zaporizhzhia region were covered.

The main methods of researching the state of formation of research ability of primary school students in the educational process of the New Ukrainian School the initial stage of the pedagogical experiment were: purposeful observations, discussions, interviews, surveys, testing and questionnaires.

The process of formation of research skills of primary school students in the educational process of the New Ukrainian school should be directed to three directions, i.e., positive dynamics of changes in motivational and value, procedural and active and reflective and evaluative components of the studied phenomenon should be ensured.

Diagnosis of the motivational and value component of formation research skills of primary school students required a number of such indicators, as: cognitive activity that develops into a cognitive need; curiosity; interest; active and positive attitude to learning new things; independence in selection of research tasks; active, interested participation in the discussion results of the implementation of research tasks, perseverance in overcoming difficulties in solving them; showing a desire to self-education.

In order to obtain the results of the study by indicators the motivational and value component, diagnose motivation learners of primary education before acquiring knowledge; questionnaire; observation were used.

The procedural and activity component of the formation of primary school students' research skills has in its structure such indicators as: knowledge sufficient to solve research problems of all types, about work with information, digital technologies; search engine achievements activity and its regularity in the process of solving research problem; the development of the ability to analyze, forecast, correct one's own work; the ability to independently make decisions in the course of performing research tasks. It was measured using the following methods: "Raven's Progressive Matrices" (study of the level of development of analytic and synthetic skills (nonverbal option)); testing (test to determine the level of development of logical thinking), (Cairn-Yirasek and D. Wexler's test for studying the level of development of analytical and synthetic skills); conversations; interviewing; results of tests.

Reflective and evaluative component of formation of research skills of primary school students is represented by the following indicators: self-

criticism, adequate self-esteem, self-regulation of behavior; expression critical judgments.

The process of its study was carried out on the basis of the diagnosis of the level of subjective control over the methodology "My self-esteem", conversations, interviewing and surveys.

The obtained data were differentiated on three levels: elementary (low), productive (medium) and creative (high), generalized digital indicators that are shown in table 1.

We emphasize that the generalized level of formation of the studied phenomenon of isolated components was defined as the arithmetic mean quantitative values of each indicator.

Therefore, with the help of complex application of scientific methods we carries out the search at the initial stage of pedagogical experiment analysis of the development of research skills of primary school students. It made it possible to determine the levels of formation of the studied phenomenon: creative, productive and elementary.

The creative level is characterized by stable internal motivation personality of the student for acquiring knowledge, its cognitive activity that develops into a cognitive need; understanding the role and meaning of the solution research tasks; curiosity; active and positive attitude towards learning new things; system manifestation of independence in the choice of research tasks and showing persistence in overcoming difficulties in solving them; disclosure desire for self-education.

The productive level is characterized by unstable motives and the interest of primary school students un search activities; episodic building a personally and meaningful goal; skills to set a goal, task, classify, highlight the main points, draw conclusions; the presence of a basic level of knowledge, sufficient to solve research tasks of most types rational ways; independent determination of research tasks, but without showing appropriate persistence in case of facing difficulties; using research and experimental actions, usually, this happens with the help under the partial control of the teacher.

The elementary level is characterized by the lack of interest of primary school students in search activity; unawareness the importance of acquiring knowledge; lack of "drive to search"; absence of ability to analyze, apply analogy, generalize, highlight the main points, draw conclusions, predict,

Table 1

Indicators of formation of research skills of primary school students according to motivational and value, procedural and activity and reflexive and estimated components (initial stage of the experiment), %

Diagnostic technique	Indicators that are diagnosed	Levels of formation		
		creative	productive	elementary
Motivational and value component				
Diagnosis of motivation of primary education applicants to obtain knowledge (survey)	level of motivation to acquisition of knowledge	15,68	29,02	55,30
Observation	perseverance of applicants for education in overcoming difficulties in solving them	10,64	24,89	64,47
Questionnaire about formation cognitive activity that develops into cognitive need	cognitive activity that develops into cognitive need	14,93	28,26	56,81
Procedural and activity component				
"Raven's Progressive Matrices" (study of the level of development of analytic and synthetic skills (nonverbal option))	availability and level of development of analytical and synthetic skills	17,59	26,87	55,54
Test to determine the level of development of logical thinking	determination of the level of logical thinking development	20,37	29,03	50,6
Cairn-Yirasek and D. Wexler's test for studying the level of development of analytical and synthetic skills (verbal option)	level research development of analytics and synthetic skills	21,95	25,56	52,49

(End of Table 1)

Diagnostic technique	Indicators that are diagnosed	Levels of formation		
		creative	productive	elementary
Reflective and evaluative component				
Diagnostics of the subjective level control over method "My self-esteem"	level of subjective control	19,31	29,78	50,91
Diagnostics of self-assessments (conversations, interviewing and poll)	Formation of the self-esteem level	23,84	31,97	44,19

correct one's own work, independently make decisions in the process of performing research tasks; self-analysis and self-regulation of behavior, expression of critical judgments are absent.

A thorough empirical study of this phenomenon showed that each component has indicators reflecting its essence. According to the obtained data of three components of the formation of research skills of primary schools students, we will give a generalized characteristic based on the specified phenomenon (table 2).

Table 2

Levels of formation of research skills of primary school students according to motivational and value, procedural and activity and reflexive an evaluated components (the initial stage of the experiment), %

№	Components	Levels		
		Creative	Productive	Elementary
1	Motivational and value	13,75	27,39	58,86
2	Procedural and activity	19,97	27,15	52,88
3	Reflexive and evaluated	21,57	30,88	47,55
	General result	18,43	28,47	53,1

In quantitative terms, we have the following results: creative level formation of research skills of primary school students revealed in 18,43% of respondents, productive in 28,47%, formation of skills for implementation

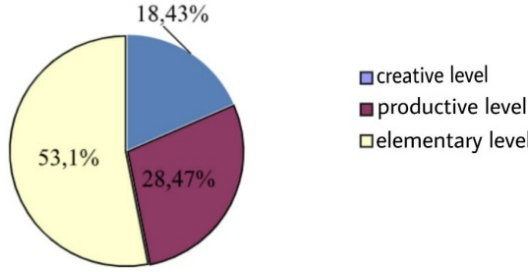

Figure 1. Final results of the formation of research skills of primary school students in the educational process of the New Ukrainian school

of research activities is almost absent in 53,1% of participants of this stage of the study (elementary level).

The results of the initial stage of the pedagogical experiment are presented in the table 2 will be also presented using a diagram that is clearly displays generalized data.

Thus, the diagnosis of the state of formation of the research ability of primary school students in the educational process of the New Ukrainian school was carried out, the results of the initial stage of the pedagogical experiment confirmed insufficient and even low level of formation of the studies phenomenon. After all, the majority of primary school students demonstrate lack of formation the ability to observe, analyze, abstract, apply analogy, generalize, draw conclusions, establish casual relationships, describe the obtained experimental material, correct your own work, take part in a discussion, use collaboration techniques and carry out self-control.

4. Organizational and pedagogical conditions for the formation of research skills in primary school students in the educational process of the New Ukrainian school

Demonstration of the students' research position, which is directly reflected in the detection of a high level of critical development thinking, scientific and rational knowledge of the value direction, disclosure energy and creative potential is impossible without external influencing factors,

where organizational and pedagogical conditions are an important component formation of this phenomenon.

A kind of reference point in the study of this section and the subject of special analysis are the positions of scientists that interpret organizational and pedagogical conditions as: interconnected set of internal parameters and external performance characteristics, that provide high effectiveness of educational process and meet psychological and pedagogical criteria of optimality [8, p. 153]; conditions that provide a certain direction of development of pedagogical process; a set of objective possibilities of content, forms, methods, techniques, means of pedagogical activity [10, p. 12]; totality multifaceted (external and internal) social and pedagogical and didactic factors that are necessary and sufficient for the emergence and rational sustainable functioning of a certain pedagogical system [9, p. 44].

If organizational and pedagogical conditions are interpreted as a certain totality ways, which will contribute to the transformation of the planned into reality, then formation of research skills of primary school students in education according to us, the following external conditions should help in the educational process of the New Ukrainian school, that will provide an opportunity to realize the essence of nature of this process as such and reveal the peculiarities of formative and pedagogical impact of it. So, let's consider the organizational and pedagogical conditions in more detail.

Providing the educational process with a research orientation by creation of a learning environment of an active-search nature

Prospective opportunity and productivity of psychological and pedagogical supporting the formation of research needs and abilities, skills and competencies of primary school students depends on many factors, first of all, from creating such an educational environment, which will allow a personality to feel like an individual capable of self-determination, self-building and self-development.

There is an objective need for the teacher to create innovative educational environment, in which the research of real problems through the introduction and active use of innovations, initiative to create its own trajectory of educational and cognitive activity is given, the education of a student-researcher with a scientific type of thinking is taking place, in the end, the research experience of the primary school student is formed.

A personally centered approach is to build such a continuous developmental interaction of participant in educational process, which is aimed at realization of the essential nature of the subject of education on the basis of stimulation the child's natural need for novelty and research of the new, skill development watch, see contradictions, hypothesize, formulate questions, draw conclusions through discovery, systematization of new information or development and further awareness of existing information or practice. In this understanding of achieving the maximum effectiveness of the formation process of research skills of elementary school students in the educational process of the New Ukrainian school looks quite promising if implemented principles of organization of students' educational and research activities, in particular: humanism, innovation, anticipatory development, openness, choice of individual educational trajectory, learning productivity, personal setting the student's goal, partnerships and integration of science and education.

It is about building a research-oriented environment of an actively searching nature, which is aimed at the formation of a student's holistic scientific perception of the world, when it develops a generalized worldview about nature, society, oneself, about the role and place of each science in the system sciences through subjective discovery and search.

It is proved that the education seekers' organization of educational and research activities should be built on a cognitive and instrumental set of actions of a teacher and a child on a partnership based under certain conditions: motivation and purposeful involvement of students in independent performance of research tasks; taking into account individual and psychophysiological characteristics of students; activation of the intellectual and creative potential of each individual with stimulating the maximum realization of one's own natural capability, achieving success; effective application of innovative teaching forms and methods. As a result of the implementation of a such learning model, it is expected to form individuals with a developed analytical and abstract thinking, worldview of an active creative researcher and research style of work.

Realization of potential resources and capabilities of primary school students during the performance of research tasks by application of a differentiated approach

Our vision of solving the problem of educational differentiation research tasks is that it should stimulate the level of intellectual development and creative

abilities of primary school students, promote independent search, initiative, dynamism, openness, intensive development as a research personality.

The opinion of researcher I. Prudchenko is correct, she notes that "modern education is mainly focused on mastering generalized algorithms of mental actions and is not concerned with the disclosure of human creative forces; the last one is impossible without close attention to human's individuality, the detection of which is whether not the only guarantee of her creative intellectual growth; … therefore education should focus firstly on the personality, individuality of the student and any educational problem should be solved through the prism of the personality's problem" [11, p. 17; 19].

We completely agree with the researcher because the students' scientific creativity possible only in conditions of freedom choice of element of educational activity through creating personal training programs, in which any element of education is implemented using its own search. Indeed, consideration individual and differentiated approach in the organization of the formation process research skills of primary school students contributes to the development of a holistic personality, its unique research position through the affirmation and cultivation of the individuality of each, providing an opportunity for applicants to live, create, learn in accordance with the potencies inherent in nature.

In summary, we note: under the implementation of individuality-differentiated approach in the formation of research skills of primary school students we understand the organization of search activities that are carried out in the conditions of collective educational activity within general limits goals, tasks and its content taking into account the individual characteristics of each child. We have established that the level of independence and individualization search and creative activity of student is the main feature, that actively influences the formation of their research behavior, experience, position, strength and productivity of scientific knowledge, systematic thinking.

Acquisition and enrichment of research experience of primary school students through the actualization of the developmental subject-subject interaction of the teacher and education seekers

From our point of view, the next stage, which will largely determine the nature of functioning and peculiarities of the process of formation of research ability of primary school students in the educational process of the New Ukrainian school is creating an emotional background, emotional

contact between teacher and students with focus on the principles of humanity. Such communication is the most productive regarding common activities and this type of communication characterizes first of all relations of equal communication partners. In this case, the teacher definitely accepts the child as a value in itself and involves focusing on its individual uniqueness, thereby stimulating interpenetration, mutual disclosure and mutual enrichment of people who communicate.

According to the conceptual positions of the Ukrainian researcher K. Horash, principles of humanism, which establishes a person as the highest social value, contributes to the creation of positive conditions for the self-realization of participants in the educational process, meeting their diverse professional and educational needs, in particular by granting freedom of choice of forms, terms, types of education and cognitive activity [12, p. 2].

A thorough analysis of psychological and pedagogical literature provided an opportunity to find that the indicators of a humanely developing educational environment are: subject-subject orientation of the interlocutors as equal partners; persuasive communication in which the student consciously appropriates a certain moral norm, turning into a corresponding personal value; democratization the relationship between teacher and student; mutual openness of both parties; communication tactics – cooperation based on the acceptance of each child, providing conditions for revealing its research position, position, activity, initiative, independence actions, choosing optimal solutions, etc.

Therefore, implementing the principles of humanistic education in the implementation of students' search activities, the productive process of forming primary school students' research skills in the educational process of the New Ukrainian school looks like sufficiently promising in the corresponding harmonious atmosphere, where is the humanist student respects himself, people around him, interests, positions, even if they contradict his own and the child's behavior is determined by desire to self-development moreover, the orientation of the individual to the principles of humanity gives him the ability to realize this desire without harming others.

Thereby, defined and scientifically substantiated complex of proposed organizational and pedagogical conditions for the formation of primary school students' research skills in the educational process of the New Ukrainian school is motivated by the fact that their implementation will help to stimulate

students to generating new ideas, finding ways of their realization, formation of research skills by creating conditions for creative self-improvement and self-realization, creative self-development of each child.

5. Analysis of the results of research and experimental work

Determined and scientifically substantiated organizational and pedagogical conditions were in the basis of the methodology for the formation of research skills of primary school students in the educational process of the NUS, which provided for the implementation of experimental technology of continuous pedagogical influence of teachers on development of educational and research activity of education seekers; cultivation strategies of tolerant partnership and emotional developing communication in interaction "teacher – student".

The purpose of the formative stage of the pedagogical experiment, which was carried out taking into account the results of the initial stage, became implementation of organizational and pedagogical conditions for the formation of research ability of primary school students in the educational process of primary school.

At the initial stage of the pedagogical experiment, 56 junior schoolchildren of II–IV grades were covered on the basis of the Communal General Institution of secondary education "Balabinsk Gymnasium "Prestige" of Kushugum settment council of the Zaporizhzhia district of the Zaporizhzhia region, where a creative group with two teachers who carried out approbation in the educational process of primary school comprehensive program "I am a researcher" was created.

Dominant in its conceptual understanding of the experimental program "I am a researcher" became the following conditions: taking into account age and individual characteristics of students of primary school age; motivation development to perform search tasks; implementation of a research approach through research lessons, special classes, reflexive and innovative forms of training, etc.

We will give fragments and examples of tasks that provided formation of research skills in elementary school lessons.

So, during the implementation of the language and literary field (content line "Exploring media") students were offered to work with modern media products. Then in the lessons "Lesson of creativity. Let's be friendly in

network!", "TV in the life of a modern person", etc. children were offered materials (video clips, photos, drawings, collages, etc.) for implementation analysis, interpretation, critical assessment of information in media texts and its using (questions for reflection, comparison, construction of questions, the opportunity to fantasize, plan, etc.).

All students in the classes were involved in independent analysis of the simple media products, collective discussion of their content, form, search and selection in the sources of the necessary information with its processing was carried out, attempts to learn to record information in writing with help of various types of recording were made; the data of various information sources was analytically compared in order to better cover the problem and design variants of its solution; joint discussions were carried out using techniques of cooperation, mutual assistance, mutual control in the process of activity.

One of the most effective forms of organization of the educational process of the NUS is the lesson-nature tour, which provides an optimal opportunity for conducting observations, study of objects and natural phenomena in natural or artificially created conditions, including exercises with elements of search and research activity, creativity, at the same time, it should be based on an activity approach, which is designed to shift the emphasis in education to active activity.

Thereby, during the lesson-excursion to the spring park in the 3rd grade in the class of natural science on the topic "Healthy lifestyle. Outdoor rest" the goal of expanding students' knowledge about a healthy lifestyle was pursued, about the importance of recreation in nature, teaching a junior schoolchild correctly chooses things and clothes for a walk in nature, follow safety rules during recreation in nature through the implementation of a research approach. Students of primary education work in pairs, providing a description of the weather, determining the air temperature with a thermometer, made the appropriate ones notes in notebooks using notation. Also compared the results of observations, expressed assumptions about expectations from experiments; described one of the objects in the park to choose from with the direct connection to material passed in previous lessons (Mathematics, Art, Ukrainian language and Reading). In the conditions of team work students compiled advices about healthy lifestyle, based on the names of the teams "Aybolites", "Organizers", "Cooks", "Cleaners",

aiming to acquire experience in performing research tasks (observation in nature, environmental modeling, forecasting, solving situational problems, practical nature conservation activities), ability to make assumptions, ask questions, draw conclusions, establish cause-and-effect relationships, find original solutions to problems, work in a team.

All proposed tasks required the implementation of a research approach in their solution with mandatory analysis of the obtained results, assessment of the situation, forecasting according to their further actions.

Continuation of psychological and pedagogical support of the formation process of research skills of primary school students in the educational process of the NUS occurred during the study of mathematical, civics and history, social and health-preserving, informative, artistic and technological educational fields. Their main purpose is provision a certain synthesis of the information processed by them, its correlation with the material of previous lessons, development of critical thinking, cognitive motivation and research behavior.

As testified by the results of the experiment, with systematic implementation and realization of the research approach in the educational process of the NUS is, first of all, stimulated students to scientific search in the process of learning, contributed receiving subjectively new knowledge and gave them the opportunity to make their own small discoveries.

Accordingly, optimal educational process that provided conditions for effective self-study of students of primary school, mastering of culture synergistic thinking, search technology and effective processing of new information.

In order to systematize experimental data at the control stage of the pedagogical experiment, we carried out a set of monitoring actions regarding the diagnosis of the final level of development of primary school students' research skills in the educational process of the New Ukrainian school, at what the same methods that were chosen at the initial stage were applied.

It should be emphasized that in the experimental groups (EG) of the study was carried out in accordance with the scientific and methodological ensuring process of formation of research skills of junior students developed by us and participants of the control group (CG) received primary education according to the traditional scheme of the educational process.

At the control stage of the experiment, the results of the study were processed, comparison with tasks and relevant analysis. Because of

carrying out experimental formative influence in EG positive changes took place in the levels of formation of research skills of primary school students in the educational process of the NUS according to the indicators of the free identified components. The results of the experimental work, shown in Table 3, testify that during the control stage of the pedagogical experiment, the levels of formation of the mentioned phenomenon in EG students underwent significant changes in contrast to the students of CG education, where they didn't turn out high.

Analysis of the results of CG and EG showed discrepancies in the change in diagnosed parameters. Thereby, according to the results of a pedagogical experiment, the number of students of EG education with an initial level of development of research skills decreased by 45,54% and the number of students with productive and creative levels increased by 26.33% and 19.21% respectively. Instead, in the control group indicators had slight positive changes.

Table 3

The dynamics of the levels of formation of research skills of primary school students according to indicators of motivational and value, procedural and activity, reflective and evaluative components, %

Levels	The initial stage of the experiment (56 people)	The control stage of the experiment	
		CG	EG
		26	30
Creative	18,43	22,63	37,64
Productive	28,47	39,65	54,80
Elementary	53,1	37,72	7,56

It should be noted that to verify the reliability of the results obtained during the experiment, we conducted a statistical analysis of the data (Table 4).

Statistical comparison of control and experimental samples was carried out simultaneously according to three criteria: chi-square, coefficient Phi and Pearson correlation coefficient.

The level of reliability of the differences is 90%, and the number of degrees of freedom in this case is 10. The obtained results allow rejecting the null statistical hypothesis of homogeneity control statistical sample. So, these samples are qualitatively different according to the investigated

Table 4

Statistical analysis of trait conjugation tables for the combined group

Variable	Chi-squared	Coefficient Phi	Pearson's correlation coefficient	Significance	Hypothesis H0
1	22.9	0.362	0.341	0.0113	-
2	6.32	0.192	0.188	0.788	+
3	9.64	0.237	0.23	0.473	+
4	22.1	0.357	0.336	0.0147	-
5	19.7	0.338	0.321	0.0322	-
6	19.8	0.338	0.32	0.0313	-
7	17.5	0.321	0.306	0.0635	-
9	17.9	0.323	0.307	0.0567	-
10	22.6	0.352	0.332	0.0122	-
11	14.4	0.288	0.277	0.153	+
12	16.6	0.311	0.297	0.0832	-
13	12.6	0.271	0.261	0.246	+
14	22.7	0.364	0.342	0.0117	-
18	18.5	0.328	0.312	0.0468	-
19	11.5	0.26	0.252	0.319	+
20	24.3	0.376	0.352	0.0069	-
22	17.9	0.323	0.307	0.0574	-

quality, the diagnosis of which is aimed at our method. Therefore, the experimental technique developed by us has obvious and discriminant validity, that is, it demonstrates different values for qualitatively different groups, and these values are statistically authentic.

Thereby, we can state with confidence that the implementation of organizational and pedagogical conditions of formation research skills of primary school students in the educational process of the New Ukrainian school really led to significant positive changes in the level of formation of the phenomenon in study experimental group. According to this, a convincing reason the achievement of the goals and objectives set in the research is considered.

6. Conclusions

The conducted theoretical and experimental research made it possible to formulate general conclusions.

1. The theoretical foundations of the problem of formation research skills of primary school students of the New Ukrainian school are defined and analyzed, which form the basis ideas of scientists who determined the priority concepts of optimal oriented orientation of this process: actualization of personally transformative meaning of the search activity of education seekers; creation climate of research and cognitive cooperation; construction of subject-subject developmental communication between the teacher and the child as equal partners.

2. Diagnosis of the initial state of the formation of research skills of primary school students in the educational process of the New Ukrainian school was carried out, the results of the initial stage of the pedagogical experiment confirmed insufficient and even low level of formation of the studied phenomenon.

3. Organizational and pedagogical conditions of formation of research skills of primary school students in the educational process of the NUS have been developed and scientifically substantiated, in particular: providing the educational process with a research focus by creating an educational environment of an active and searching nature; realization of potential talents and opportunities of primary school students during the performance of search and research tasks by application differentiated approach; acquisition and enrichment of primary school students' research experience through the actualization of developmental subject-subject interaction of teachers and students.

4. As a result of experimental formative influence in EG there were positive changes in the levels of formation of the studied phenomenon according to indicators of three components. Qualitative and quantitative analysis of the received results confirmed the effectiveness of implemented organizational and pedagogical conditions for the development of creativity of younger schoolchildren, formation of research ability of primary school students.

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