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ICT as a Key Instrument for a Balanced System of Pedagogical Education

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Abstract. The article presents the results of the study of future pedagogical specialists competences development with the help of ICT. The sense of future teachers' professional training is analyzed within different scientifically views and approaches. Fundamental, invariant and variation components of a balanced educational system are defined.

The modern requirements to digital skills of future specialists are discussed. The quantitative and qualitative results of an experimental study proved the set of professional qualities of modern flexible alumnus.

The experience of implementing ICT in high education is reflected on the example of courses History of pedagogy and Frebelpedagogy.

A piloting course for mastering “soft skills” is described. Its object is to increase the level of general professional training.

Implementation of ICT in a balanced system (fundamental, invariant and variant components) affects the alumni competitiveness. It causes the capitalization of students as future specialists able to integrated their knowledge in changing social and cooperative environment.

Keywords. Web-multimedia encyclopedia, pedagogical specialty, ICT, soft skills.

1 Introduction

The formation of a professional, regardless of specialty, in modern conditions occurs only within the framework of quality training. It is such an integrated system of external and internal educational factors, which ultimately provides the graduate with the necessary and sufficient professional competencies.

At any stage of historical development, the system of professional training is created by a triad of components: fundamental, invariant and variable.

The intensive development of the modern information society has upset the balance of the training system, namely, increased the boundaries of the variable component and moved part of the invariant to the fundamental (for example, digital competencies are a required form of literacy at the level of reading, writing, arithmetic).

However, at the same time, at this stage of society's development, effective tools have emerged to balance the disrupted system. In this case, we are talking about ICT,

which affects the motivation, freedom of participants in the educational process, diversification of educational material, the emergence of new educational models, feedback, partnerships and more. The transition of humanity to a society of information diversity has led to unification and cultural integration in all spheres of life, globalization in its social, environmental and informational dimensions. The world is changing and as a result the whole system of values of society is changing: in particular, its most vulnerable structure is the personality in all its manifestations.

The Paris Communiqué states that digitization plays an important role in all spheres of society and recognizes its potential to change how higher education is provided, how people learn at different stages of their lives. This document calls on higher education institutions to prepare their students and support their teachers to act creatively in a digitalized environment. Educational systems must to make better use of digital and blended education, with appropriate quality assurance, in order to enhance lifelong and flexible learning, foster digital skills and competences, improve data analysis, educational research and foresight, and remove regulatory obstacles to the provision of open and digital education [3].

The results of the application of international experience show that digital technologies have become a driving force of socio-economic development, economic recovery of many countries and determine the basis of sustainable development in the future [14].

And in education, digital technologies determine the success of training a person to work in the information society. To do this, it is necessary to: develop a national scientific and educational space based on the integration of different national multi-purpose information and communication systems; to develop methodological support for the use of computer multimedia technologies in the teaching of school subjects and disciplines, to take into account the systems of education of students of pedagogical institutions of higher education and retraining of teachers features of work with ICT [8].

In these circumstances, the need to outline the most important educational indicators - knowledge, skills - remains urgent. However, the mission of the university education system is to form a new level of consciousness of a free person, a generation of personalities, human resources capable of striking a balance between economic growth and social development [17]. The result should be the capitalization of students, as future professionals, able to apply effectively the acquired knowledge, prepared for democratic changes in society and oriented towards cooperation.

The new educational conditions require the transformation of higher education institutions of Ukraine in accordance with the European requirements, the defining criteria of which are:

- quality of training of specialists;
- Fundamentalisation and individualization of learning;
- Strengthening trust among educational entities;
- compliance with the requirements of the European labor market;
- mobility of students and teachers;
- compatibility of qualifications;
- enhancement of competitiveness of university graduates, etc. [12].

The teaching profession is undergoing significant changes, namely: the educator increasingly frees himself from some didactic functions, including supervising, while remaining creative; its role is significantly changing and the possibilities of managing cognitive activity of students are expanded; qualitative characteristics of educational activity change, information technologies of new didactic functions are transferred to information technologies (presentation of educational information, demonstration of processes and phenomena); computer teacher training requirements are increasing [5].

According to the results of research work and teaching practice, we summarize the following **contradictions** of modern higher professional education of teachers:

1. Non-compliance of the level of professional competence of graduates of higher education institutions with the requirements of the modern labor market.
2. Imbalance of fundamental, invariant and variable components in professional training.
3. Underestimation of ICT as a key tool for balancing the training system.

The purpose of the article is to consider the problem of integration of ICT in vocational education of teachers and to analyze the current tendencies of development of higher education in order to determine the components of a balanced system of the process of future teachers (fundamental, invariant and variant components of vocational training) and to understand the key and place of the system and the tool.

2 Three components of a balanced training system for future educators.

Consider the concept of "vocational training". Professional training is a complex psychological and pedagogical system with specific content, presence of structural elements, forms of relationships, peculiarities of the educational process, specific knowledge, skills and skills specific to the specialty.

The vocational training of future preschool teachers and primary school teachers is characterized by specific features. They are related to the harmonious combination of universal training, acquisition of research orientation, comprehensive, universal outlook (a fundamental component), which provides a high degree of amateur teacher and the formation of pedagogical skills and abilities; formation of the humanitarian composition of thinking, mastering of the graduates of the university the latest methods and technologies of pedagogical activity, orientation of teaching to the decision of didactic, educational and developmental tasks (invariant component) [6]. We believe it is effective to combine these elements with a system of flexible skills that allow you to solve the problem of the ratio of learning, development and self-development, to develop an individual trajectory of vocational training (a variable component).

The formation of an information society involves changing perceptions about the role of education, imposing new requirements on the system of education, necessitating the transition from a knowledge-based educational paradigm of an industrial society to a competent paradigm of post-industrial society. The modern model of three-subject relations provides for the introduction into the traditional subject-subject model, presented by the teacher and the student, of the third subject - information and

communication pedagogical environment - thus forming a complex system: "teacher - student - information and communication pedagogical environment", where each of the components is an active equal subject of the educational process. The information and communication pedagogical environment transforms the traditional subject-subject model of learning, directly influencing and somewhat changing the role and functions of other subjects of learning, partially taking over their functions.

In the conditions of three-subject interaction there is an active information interaction between the teacher, the student and the information-communication pedagogical environment which gives the chance to the student to get professional knowledge, to get abilities and skills of professional activity; teacher - to perform the functions of instructor, mentor and leader of the educational process; information and communication pedagogical environment - to realize the potential, abilities of the future specialist, increase his learning motivation and develop the individuality of the future specialist [10].

In accordance with current educational conditions, we propose to consider in detail the structure of a balanced system of vocational training for preschool teachers and primary school teachers. In our opinion, it consists of three interrelated structural elements - fundamental, invariant and variational components. In the following, we propose to use the concept of "triad" in relation to the structure of a balanced vocational training system covering the above components.

Let us dwell on the disclosure of the content and characteristics of the fundamental constituent of the triad. The analysis of the scientific-pedagogical literature proves that within the framework of the traditional (classical) university system of education, the fundamentality of education was understood as an in-depth preparation in a certain direction. For example, this view is held by V. Kuznetsov, whose conviction is fundamental to: justification of a certain sufficient number of questions in the basic spheres of knowledge of this field of science and general disciplines, without which it is impossible to imagine an intelligent person; studying this range of issues with complete justification, the necessary references, without logical gaps; defining a set of basic laws and concepts that serve as a basis for the study of the following disciplines [7].

According to the concept of O. Golubeva and A. Sukhanov, "fundamentality of education" is the provision of various humanities and science education based on mastering basic knowledge. Fundamental to preparation involves mastering generalized activities that provide the solution to the numerous tasks of the subject area. Education is fundamental if it represents the process of nonlinear interaction of the person with the intellectual environment, while the individual perceives this environment as an enrichment of his own inner world and thus multiplies the potential of the environment itself. [4].

Therefore, the task of fundamental education is to provide optimal conditions for the education of flexible and multifaceted scientific thinking, the development of scientific information base and modern methodology for understanding reality, the creation of an internal need for self-development and self-education during life.

The second component of the triad is invariance. In the context of our study, we will refer to the term invariant (from Latin *invarians* - unchanged), which is character-

ized by considerable stability, stereotype. It is dominated by: independence from external influences, orientation to preserving traditions; integrativeness and convergence of processes, their integrity and generalization; lack of flexibility; striving for order and heredity. The invariant part (core) of psychological and pedagogical training provides an opportunity for the scientific and pedagogical worker to assign cultural and national values, but at the same time to form professionally significant qualities in accordance with the contemporary requirements of the development of psychological and pedagogical science and practice through their transformation in accordance with new social conditions.

The third component of the triad is variability. Variations are inherent in: flexibility, innovative orientation, openness to new in sciences and technologies; dynamics of internal processes, their differentiation and divergence, dissociation and specificity; instability and dependence on external changes; dominance of differentiated knowledge [15]. The variational component is a condition for the individual development of future specialists, is determined by the individual requests and characteristics of the subjects of the educational process, the characteristics of the profession and allows to solve productively the problem of the correlation of training, development and self-development, to develop an individual trajectory of vocational training. It provides a set of special courses, special workshops, etc.

All three constituent triads are closely interconnected. The quality of an individual element affects the overall measure of professional competence. The high level of formation of fundamental knowledge, skills and abilities provides the opportunity to apply them depending on the educational situation. In turn, variability and invariance of professional activity rest on a fundamental component and at the same time serve as a basis for creativity, self-development and motivation for professional growth. Thus there is a mandatory requirement - the balance of all elements of the triad.

An important characteristic of this system is its openness, which ensures the quality of training and mobility of participants in the educational process. In particular, vocational training is not limited to the walls of an individual university or faculty, but is a synthesis of the results of cooperation with employers, with foreign partners, centers of non-formal education. We consider such interaction possible due to the real and virtual cooperation of educational institutions and other institutions in the implementation of research work, educational activity, project cooperation.

3 ICT in the balance system of professional pedagogical education

Today, a specialist employer has serious requirements that involve collaboration with a creative personality, able to easily adapt and be well-versed in modern conditions. In this regard, institutions of higher education have tasked with training specialists who are able to make their own decisions, to be able to keep track of the emergence of new information necessary for their self-development, to be able to assess their need for new knowledge and skills, to approach their self-education critically and to constantly improve. One of the tools that can assist teachers in addressing this

issue is the introduction of ICT learning into the learning process. The use of ICT in the fundamental training of future educators requires the development and implementation of changes in the teaching methods of all disciplines. This is due to the fact that the teacher ceases to be the only source of knowledge for the student. Today the student has many opportunities for self-education as the necessary materials can be found on the Internet. Memories and playbacks inherent in traditional learning are becoming obsolete today. Students are faced with new requirements: the ability to map, analyze, evaluate, predict and plan.

The introduction and dissemination of educational technologies that use ICT in the learning process contributes to the quality of higher education. Educational technologies in the development process become more user-friendly, they are rapidly penetrating all disciplines as more and more teachers recognize the need to train professionals with knowledge of the purpose and potential of using ICT for professional activity.

The informative competences of constructive use of ICT in all components of practical activity of the future teacher allow to optimize the educational process, and most importantly - to help prepare students for life in the information society [13].

The special significance of ICT is that increasing the level of process automation leads to better evidence and objectivity of the analysis results (the Feedback system, the rating system Publication.ksu).

Let us consider separately the possibilities of using ICT in each of the components of a balanced system of professional training of future preschool teachers and primary school teachers. These opportunities depend on the competencies that we plan to form in students. In our view, the requirements for basic training are linked to the key competences that all citizens need for personal realization and development, an active civic life, social cohesion and employment opportunities. The invariant component encompasses the process of formation of special (professional) competences, which are actually pedagogical, necessary for mastering the pedagogical profession and future professional activity. The variational component is a condition for the individual development of future specialists, is determined by the individual requests and characteristics of the profession and allows to solve the problem of the correlation between training, development and self-development.

The creation of such conditions promotes, on the one hand, academic freedom and, on the other, the possibility of access to the educational system by the external environment.

The fundamental component requires professionals to master the key competencies:

- The ability to realize their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of man and citizen in Ukraine.
- Ability to preserve and multiply moral, cultural, scientific values and achievements of the society on the basis of understanding of history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use different types and forms of motor activity for active rest and healthy living.

- Ability to think abstractly, analyze and synthesize.
- Ability to communicate in the state language both verbally and in writing.
- Ability to evaluate and ensure the quality of work performed.
- Ability for interpersonal interaction.
- The ability to learn and master modern knowledge.
- Ability to apply knowledge in practical situations.
- Implementation of safe activities [9].

In implementing this component of vocational training, it will be effective to use the following ICT tools: the use of presentation material through technical means, the use of pedagogical software, and online services.

When preparing presentation material, it will be effective not only to use the usual linear, static presentations (using Power Point), but also dynamic ones - "flying" presentations, the use of a multimedia board, etc.

Software Teaching Tool is a holistic didactic system based on the use of computer technologies and the Internet, which aims to provide training in individual and optimal training programs to manage the learning process.

Important points in the achievement of this goal are the high level of information technology support using modern IT technologies and compliance with international standards.

The biggest advantage of this educational product is that it is not a regular electronic textbook on electronic media, but a holistic program that combines theoretical and practical issues, virtual labs and workshops, has an electronic success log, lesson designer, computer animations, interactive and test tasks and more. Software pedagogical tools provide a large number and high quality of illustrative materials (drawings, graphs, maps, diagrams, photographs, video fragments, sound series, interactive models, simulators, 2D, 3D animations, etc.), which contributes to a high level of learning efficiency. PPPs allow you to objectively and accurately determine the levels of student achievement through a variety of multi-level tests, tasks, simulators.

Online services make the educational process more efficient.

New information technologies are characterized by the availability of the World Wide Web, such services as e-mail, telecommunications, which offer ample opportunities. Live communication is an integral part of information technology, so at the present stage of development of technical and software information, technology is called information and communication. The computer takes its place in these communications. It provides comfortable, individual, diverse, highly intelligent communication of the objects of communication.

The International Media Consortium has identified trends in the development of ICTs that affect the development of the education system: mobile technologies, open content, e-books, augmented reality, touch interfaces, data visualization.

Information technologies can be focused on special technical information tools, as currently the education system uses a variety of information tools: electronic textbooks, multimedia systems; expert systems, automatic design systems, banks and databases, electronic library catalogs and the Internet (global), national (regional, sectoral and local) networks, etc.

A sharp leap in the development of computer technology and software has contributed to the introduction into the educational process of technologies such as multimedia technologies, Internet technologies, Web-design, and their proper use contributes to the integrated development of personality and abilities.

- computer training programs that include electronic textbooks, simulators, tutors, laboratory workshops, test systems;
- training systems based on multimedia technologies, built using computers, video equipment, optical drives;
- intellectual and educational expert systems used in various subject areas;
- means of telecommunications, including e-mail, teleconferencing, local and regional communication networks, data exchange networks;
- electronic libraries, distributed and centralized publishing systems.

The final product of the student project activity can be presented at different forms: web site; analysis of sociological survey data; a business plan; electronic newspaper, magazine; bill; collection; design - layout; model; package of recommendations; advertising prospectus; virtual or real excursion and more.

The quality of fundamental training of students gives positive results by increasing the informativeness of basic lecture courses with the required use of ICT.

4 ICT integration into the invariant component

The invariant component of vocational training, in turn, requires the formation of special (professional) competencies. They include:

- Ability to work with sources of educational and scientific information.
- The ability to develop basic personality traits in children (arbitrariness, independence, creativity, initiative, freedom of behavior, self-awareness, self-esteem, self-esteem).
- Ability to develop curiosity, cognitive motivation, cognitive actions in children.
- The ability to form in children ideas about the subject, natural, social environment, properties and attitude of objects; development of self-awareness ("I" of the child and his place in the environment).
- The ability to develop speech in children as a means of communication and interaction with peers and adults.
- Ability to develop the skills of consciously adhering to socially recognized moral and ethical rules and rules of conduct.
- Ability to nationally patriotic upbringing of children (love for the Motherland, native language, native city; interest and respect for state symbols of Ukraine, national traditions, customs, holidays, rituals).
- Ability to develop in children the skills of environmentally safe behavior and activities in everyday life, nature and the environment.
- Ability to develop perceptual, mnemonic processes, various forms of thinking and consciousness in infants and preschoolers.

- Ability to draw up an Individual Development Program and documents necessary for teaching children with special educational needs, to be familiar with universal design in education and reasonable accommodation.
- The ability to form in children ideas about different types of art and means of artistic expression (words, sounds, colors, etc.) and experience of independent creative activity.
- The ability to physically develop children, correct and strengthen their health through exercise and physical activity.
- Ability to organize and direct the play (leading), artistic-speaking and artistic-productive (visual, musical, theatrical) activities of children.
- Ability to develop healthy lifestyle habits in children as a basis for a personality culture (valueological culture).
- The ability to individually and differentiate the development of children with special educational needs according to their abilities.
- The ability to bring up tolerance and respect for others in children, to prevent and counteract bullying.
- The ability to be responsible for decision making in unpredictable working conditions.
- Ability to find, process, and use educational information when working with children, parents.
- Ability to interact with children, parents, colleagues.
- Ability to self-education, self-development, to continuity in education for continuous deepening of general education and professional training, to transform the acquisition of education into a process that lasts throughout the life of a person [9].

Consider the process of implementation of this component of vocational training on the example of the use of ICT in the study of professional disciplines at the pedagogical faculty of Kherson State University.

The Web-multimedia encyclopedia "History of Pedagogy" and "Frebelpedagogy", which are elements of a dynamic information and communication pedagogical environment, are successfully functioning and used in the educational process.

Web-multimedia encyclopedia helps to focus students' attention on demonstrating ways and means of implementing new concepts of education, contributes to the formation of an active creative personality of the future teacher; developing new approaches to knowledge acquisition; creation of new more effective means, methods and forms of education and upbringing of children; designing developmental pedagogical processes.

While reading the lecture, the teacher presents the basic concepts, gives explanations and instructions for independent study of the educational material. When using Web-based multimedia resources, the need for abstracts is eliminated, as the student has the opportunity to view its contents at home. Multimedia support of the lecturer's report improves the perception of the questions that are proposed for discussion, creates comfortable conditions for the classroom work (the accompaniment is a logically structured slide sequence in PowerPoint format). Different types of information are used for content: text, graphics, animation and video snippets.

The use of an interactive whiteboard in practical classes allows you to combine traditional and innovative forms of work, develop crossword puzzles, riddles, graphic problems, create your own sensory-cognitive tasks.

Therefore, Web-multimedia is aimed at the implementation of personality-oriented, activity-based, systemic, synergistic and competent approaches to the organization of educational and cognitive activities of students. It allows to provide remote control of students' independent work, to exercise self-control; form groups for joint learning activities for correction and control purposes; to hold discussion forms of educational work already at lectures.

5 ICT implementation in the variable component.

We see the implementation of the variant component in mastering soft skills, which will help the future specialist to improve the level of their professionalism.

Soft skills (soft skills) are a set of skills that are important for professional growth, closely related to personal and social qualities. There is an interpretation of the non-substantive, super-professional competencies of a specialist, that is, "universal skills" that enable more effective interaction with other people.

Since the profession of teacher is public, especially important are the skills of self-presentation, the ability to build relationships with all participants in the educational process, the ability to creatively solve pedagogical problems, to show leadership, to have self-management, critical thinking as a capacity for productive activity. Equally important in this context are situational awareness, adaptability, flexibility, tact.

These skills and abilities are of particular relevance in an era characterized by the processes of transformation of both society as a whole and education in particular [2].

The development of soft skills today is defined as the process of dynamic transformation of personality throughout life. This leads to a motivated development of existing personal qualities in accordance with the environment and surrounding people. The future specialist should focus their attention and activity on improving their own efficiency, promoting themselves and their own individual trajectory of professional development. The development of soft skills is a personal motive of each person, on which the effectiveness of pedagogical activity depends [1].

Tony Wagner, Research Fellow at Harvard University's Center for Innovative Educational Programs, researching education and upbringing for a generation that will change the world for the better, identifying the traits of a successful innovator, driving the progress:

1. Interest - The habit of asking the right questions for the sake of gaining a fuller understanding
2. Collaboration ("collaboration"), which begins with the ability to listen and learn from someone who has a different experience and has other skills
3. Associative or integrative thinking

4. Propensity for active action and experimentation [16].

According to T. Wagner, these qualities can and should be developed through the following interrelated elements: play, capture and purpose.

In order to be able to develop these traits in the child, the teacher himself must have basic "flexible skills". According to T. Wagner's research, the main of these skills are as follows:

1. Critical thinking and problem-solving skills.
2. The ability to collaborate and influence others.
3. Agility and adaptability.
4. Initiative and enterprising.
5. Effective oral and written communication.
6. The ability to evaluate and analyze information.
7. Curiosity and imagination.

Analyzing the scientific literature on the development of soft skills, we can say that professional competence, personal growth and social and psychological skills in the aggregate are the basis for successful self-realization of each personality.

V. Shipilov suggested to divide soft skills in the following areas:

1. Basic communication skills (helping to build relationships with others, communicate effectively and behave in critical situations - the ability to listen, prove, argue, be persuasive; public speaking skills; team skills; result orientation).

2. Self-management skills (allow to control time, own state, actions - management of emotions, stress states; reflection, goal-setting, initiative etc.).

3. Effective thinking skills (helping to manage thought processes - systemic, functional, creative, logical thinking; analysis and processing of information; critical appraisal and decision making).

4. Managerial, leadership skills (planning, motivation, management and control of execution, organization of mentoring, change management, delegation of authority, etc.) [11].

We consider the effective use of ICT in the formation of skills:

Table 1. The effective use of ICT in the variable component.

| Skills | Propositions |
|---|--|
| - teamwork | Creation of a joint media product, participation in project activities. |
| - effective interaction | Communication through social networks, blogs, chatting. |
| - time-management | Use of electronic and mobile applications in the targeting and planning process. |
| - confronting stress - confronting stress | Use of ICT tools in the process of restoration of work capacity, emotional stability, adjustment for future activity. |
| - public speaking | Participation in the work of the Discussion Club, presentation of the results of pedagogical studies in the format of a webinar. |

6 Experimental study of partnership

V. Shipilov suggested to divide soft skills in the following areas:

The level of ownership of each component of a balanced system makes it possible to define partnership interaction. II Indicators are personality, empathy, internality, assertiveness, communication and organizational skills.

A study was conducted on the real state of future teachers' readiness for partnership.

In order to find out the level of readiness for partnership, we conducted a study at the Pedagogical Faculty of Kherson State University. The survey included 150 Bachelor's degree recipients. A study of the level of empathic tendencies (according to Mehrabian) showed that in the group of students (n = 100) the high (46%) and medium (50%) levels of empathy prevail; (low - 4%), which indicates the ability to adequately perceive people's experiences and feelings. This is a positive trend that can be an incentive to help others.

Frequency analysis of communicative and organizational inclinations showed that the majority of students showed medium (52%) and low (32%) levels of development of identified inclinations. Only 16% of those surveyed found it high.

The results obtained show that the respondents do not avoid contact with people, do not limit the circle of their acquaintances, although the potential of their inclinations does not differ with high stability. Most students avoid making independent decisions, leadership roles, initiating ideas, and taking no initiative in making contact with others.

Frequency analysis of indicators of behavior styles (by K. Thomas) showed the following results: rivalry - 4.7; cooperation - 10.8; compromise - 9.2; avoidance - 5.9; Adaptation is 6.2. The predisposition to cooperate and to compromise has been demonstrated.

The least used behavioral strategies were "avoidance" and "rivalry." This means that the researchers are committed to discussing issues and needs together, to long-term, effective interaction. At the same time, respondents show a tendency to compromise in order to maintain relationships with their partners.

To determine the locus of subjective control, that is, general internality, a test questionnaire developed by E.F. Bazhin on the basis of the scale of locus of control of J. Rotter. The locus of control is a characteristic of the volitional sphere of a person, which reflects his inclination to attribute responsibility for the results of his activity to external forces or only by his own efforts and abilities. That is, an indicator is determined among two polar personality types depending on the location of the control. In the first year students a high level of internality was found in 32,2%, average - in 67, 8%. In the 2nd year the high level was -17, 5%, the average - 47, %%. Third-year students - respondents have a high level - 8%, average - 52%, low - 40%. Undergraduate graduates have 26, 9% high level of internship, 73, 1% - average level.

The next professional quality of the researched teacher is assertiveness. It is the ability not to inflict school on anyone and respect the rights of others, while being aware of one's own rights. It is the ability to be able to say "no", ask and make demands, constructively talk

1st year students showed high level - 5.08%, average - 64, 4%, low - 30, 52%

2 students have the following indicators: high - 7.55, medium - 70%, low - 22.5%. Higher-level fourth-year applicants have a high assertiveness of 12%, a secondary of 60% and a low of 28%. A large number of respondents expressed their ability to evaluate themselves realistically. And this is a good base for mastering the skills of effective contact with others.

A test questionnaire of organizational and communication skills (by B. Fedorishin) became quite informative. Respondents with low levels of communication and organizational skills do not want to communicate, feel uncomfortable in the new team, want to spend more time alone with one another, have difficulty in making contact with other people, are afraid of speaking to the audience, are unable to defend their position, avoid standing. Among the surveyed freshmen, the high level of communication skills - 11, 2%, organizational - 6, 78%; the average level - respectively - 23,72% and 27, 11%; low level - communicative - 64,40%, organizational - 66, 10%.

The sophomores demonstrated only 10% of the high level of communication skills, organizational - no; average - 37, 5%, 47,5%; low level was the highest - communicative - 52, 5%, organizational - 52,5%.

In the 3rd year the results are as follows: high level of communication skills - 12%, organizational - 16%, opposite low level demonstrated communication - 28%, organizational - 52%.

Indicative indicators of 4-year students' communication skills are high: 15.4% and 3.85%, average - 42.30% and 46.15%, low - 42.30% and 50%.

The results of the study suggest that bachelor's degree holders have the potential to improve the quality of vocational education and need to be involved in innovative forms of work to build the foundations of professional competence of future educators using ICT.

Table 1. Recommendations to use of ICT for the development of the empathy, the assertiveness, the internality, communicative abilities and organizational abilities

| | |
|-------------------------|--|
| Empathy | Creation of databases "Helping Hand", collection, analysis and processing of information on the results of charitable activities. Creating a network of "Diary of our actions.ua" Development of the project "Our strength is in cooperation". Increasing motivation to collaborate through the use of Web resources. |
| Assertiveness | Execution of joint projects on the use of social networks, electronic correspondence. Computer visualization of situations and objects. |
| Internality | Use of ICT to distribute responsibilities within a group. Personal blogs "My ideas and suggestions". Development of didactic computer support |
| Communicative abilities | Creation of a site, filling it: a business card, distribution of responsibilities, correspondence, response to certain situations through Skype contacts. Development of multi-level tasks with elements of gamification. |
| Organizational | Chat with the group via chat, messenger. Delegation of respon- |

| | |
|-----------|---|
| abilities | sibilities: Leader-leader organizer, Presentation team responsible for preparing and conducting webinars, Reflection of group activities via electronic voting, Answering questionnaires. |
|-----------|---|

7 Conclusions

The use of ICT is a multi-purpose solution to the educational problem: improving the educational process, the ability to provide more information, the development of independence and logical thinking of students; promoting student activity, individualization and differentiation; diversification of forms of partnership, increase of motivation for further professional activity.

1. The use of ICT allows to harmonize the level of professional competence of graduates of higher education institutions with the requirements of the modern labor market.

2. ICTs change perceptions, technologies, content. These changes affect the balance of the three components (variable, invariant, fundamental).

3. Originality, novelty is to strengthen the invariant and variable components of the triad. As a result of the research (historical-logical aspect) it was determined that there is a tendency to increase the significance of the variable component of the triad. This is facilitated by the increased use of ICT tools. The variable component allows to effectively solve the problem of harmonization of learning, development and self-development.

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