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The fourth issue contains articles by scientists from different countries, prepared on the basis of their scientific work. It is designed for university teachers, graduate students, undergraduates, practitioners in pedagogy and education management.

# CONTENTS

# CHAPTER 1
# GENERAL PEDAGOGY AND HISTORY OF PEDAGOGY

## THEORETICAL FOUNDATIONS OF THE PROBLEM OF MENTORING

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***Abstract.*** *The article considers the peculiarities of mentoring and preparation for its implementation in higher education institutions. The purpose of the article is to study the possibilities of mentoring in the learning process in higher education institutions. The following methods were used: theoretical - analysis of scientific literature, legal documents, curricula, synthesis, classification, generalization, comparison and systematization of data to study the state of the research problem; empirical - questionnaires, surveys, interviews, in order to study the state of readiness of future professionals for mentoring; methods of Mathematical Statistics - using Pearson's consistency criterion for quantitative and qualitative processing of experimental data, proving the reliability of the obtained research results. The urgency of the problem related to the process of education is shown. For young professionals, the basis of the education system is mentoring, which is the main form of establishing personal relationships between team members. Scientists have determined the place of the mentor in the system of education of beginners. It is determined that the main factor of professional development of a specialist is individual professional position.*

*It is proved that preparation for mentoring is characterized by a number of specific terms: "mentor", "mentoring", "readiness of future professionals for mentoring". This process must meet certain requirements for the mentor: general erudition, professional intuition, intellectual abilities, general culture and morality, professional mastery of specific methods of education. The qualities that characterize the mentor are studied. These include: corporate culture; practical training; understanding of personal responsibility; purposefulness; vision of the end result; formed motivation; being an authoritative person; possession of leadership skills. Professional competence is prioritized by scientists. The ways of influence of the mentor on students / cadets were chosen: focus of activity on achievement of success; joint participation in solving unforeseen situations; organization of events using effective measures; own example. There are several types of mentoring: tutoring, coaching, mentoring, research guidance, supervision. All these types are characterized by individualization of the educational process. Insufficient study of the problem of mentoring has been identified.*

***Keywords:*** *mentoring, mentor, future specialists, the main qualities of a mentor, requirements for mentoring, ways to implement mentoring.*

**JEL Classification: A22, I23**

**Formulas: 0; fig.: 0; tabl.: 0; bibl.: 15**

**Introduction.** The problem of educating the younger generation occupies an important place in the training of future professionals in various specialties. Mentoring plays a significant role in this process. The effectiveness of the educational process depends on the skill of mentors. Therefore, mentoring needs to be taught. There are several ways to do this: courses at institutes of postgraduate pedagogical education,

special seminars, trainings, business and role-playing games, video conferences and other events.

For young professionals, the basis of the education system is mentoring, which is the main form of establishing personal relationships between team members.

One of the areas of organization of mentoring is the implementation of measures of educational and methodological preparation for such activities of future professionals. Such processes need to be carried out while studying at a higher education institution.

However, a comprehensive study of the problem of mentoring and training of future professionals for mentoring has not yet been conducted.

Theoretical principles of mentoring, ways to form mentoring competence and the introduction of effective factors to improve the quality of preparation for such activities require further research.

**Literature review.** Based on the analysis of psychological and pedagogical literature, we determined that the problem of mentoring is researched by scientists in the country and abroad. A. Galimoa, V. Georgieva, O. Didenko, L. Romanyshyna, S. Tovt, O. Torichny and others dealt with general issues of this problem. The question of the essence, content and features of mentoring is considered in the works of N. Alyushina, N. Denisenko, M. Zembitskaya, T. Osipova, S. Serkhovets, S. Sinkevich, V. Yarema. The works indicate the role of the mentor in the training of future professionals, ensuring this process during their training, highlighting the basic requirements for the mentor, and his role in the process of education and training.

This problem is also discussed in detail abroad, in the works of E. Alleman, J. Cochran, J. Doverspike & I. Newman, M. Baden, K. Wilkie who emphasize the importance of mentoring in vocational education.

**Aims.** The purpose of the article is to study the possibilities of mentoring in the learning process in higher education institutions.

**Methods.** The following methods were used: theoretical - analysis of scientific literature, legal documents, curricula, synthesis, classification, generalization, comparison and systematization of data to study the state of the research problem; empirical - questionnaires, surveys, interviews, in order to study the state of readiness of future professionals for mentoring; methods of Mathematical Statistics - using Pearson's consistency criterion for quantitative and qualitative processing of experimental data, proving the reliability of the obtained research results.

**Results.** The study of psychological and pedagogical literature has highlighted the main contradictions that hinder the process of formation of mentoring competence of future professionals while studying at a higher education institution. The main contradiction of such a process, in our opinion, is the need for competent mentors and the insufficient level of competence of modern mentors. This indicates that there is a need to train highly qualified mentors and the need to explore ways to increase the competence of such professionals.

Scholars have identified the place of the mentor in the system of education of beginners (starting from the 1st year of study) as the main representative of such a mission. According to S. Tovt [1] the basis of professional development of specialists

is an individual professional position. Therefore, the mentor needs to focus on individual work with subordinates.

Preparation for mentoring has a number of specific terms. Such terms include: «mentor», «mentoring», «readiness of future professionals for mentoring». The list of readiness can be extended for different specialties, as each of them has its own characteristics. We consider the essence of these terms: the concept of «mentor» is defined as a participant in professional activities, who provides direction of personal and professional growth of future professionals based on their own experience [2]. In our research, we have taken into account the scientific definitions of researchers that the mentor should be an authority for future professionals.

These issues are considered in foreign literature. In the works of foreign scholars, the term «mentor» is defined as an experienced person who helps the younger to prepare for all angles of life [3, 4]. According to these scientists, «mentoring» is the transfer of knowledge and psychosocial support for life and work to future professionals.

Among the defining requirements for a mentor, in our opinion, the most important are: general erudition, professional intuition, intellectual abilities, general culture and morality, professional mastery of specific methods of education. We supplemented this list with the following requirements: developed communication skills, positive attitude, mastery of psychodiagnostic techniques. These requirements were chosen because the degree of their development depends on the possession of verbal communication, which greatly affects the effectiveness of mentoring.

Among the above qualities, the most important are organizational and communication. For the organization of educational activities it is necessary to convey their importance to each student personally. Then the effectiveness of the mentor will be positive.

The next important quality is the ability to listen and understand the student. These skills are not inherent for many people, so they need to be taught. The success of mentoring largely depends on this. Additions to the list of qualities are given in the works of M. Morozova: corporate culture; practical training; understanding of personal responsibility; purposefulness; vision of the end result; formed motivation; being an authoritative person; possession of leadership skills [5].

The professional competence of a mentor is indisputable, which involves the possession of specific knowledge and experience of mentoring. The mentor must perform a number of functions: organization of work and planning of the desired results; demonstration of different situations with their further discussion; systematization of mentoring tasks; control measures; availability of feedback; motivation [6].

This follows from the purpose of mentoring - to ensure the adaptation of students / cadets to the learning environment and to prepare for further professional activities. The introduction of mentoring contributes to more effective training of future professionals for professional activities.

We are impressed by the opinion of M. Morozova [5] that «mentoring should be understood as a system that integrates and structures the processes of interaction aimed at the adaptation of young professionals».

Mentoring is seen as «a relationship in which a person with a high level of knowledge teaches, accompanies and develops newcomers to the organization or profession» in the works of foreign researchers [7].

According to I. Kruglova [8], the functions of mentoring include socio-psychological and didactic. This division is related to its role in educating future professionals. The scientist identified the main features of mentoring:

- flexibility in the organization of the educational process;
- professional direction of mentoring;
- providing «feedback».

Scientists identify ways of influencing the mentor on students / cadets as: the direction of activities to achieve success; joint participation in solving unforeseen situations; organization of events using effective measures; own example [9].

The analysis of psychological and pedagogical literature allowed us to conclude that mentoring is crucial in the education of the younger generation. At different stages of training, mentors are called differently, although they perform the same function - educational: educator, class teacher, curator. All of them are performing their function, and have features, depending on age and school.

According to T. Osipova [10], there are several types of mentoring in higher education institutions: tutoring, coaching, mentoring, scientific guidance, supervision. Tutoring refers to pedagogical activities for the individualization of education. The use of one of the principles of didactics - individualization, provides an opportunity to build the content of education according to their own educational program.

Individualization of teaching through the organization of tutoring is carried out through training, which involves their direct use in practice. Modern methods are used during the training: business, role and simulation games, modeling, group discussions [11].

Coaching is a type of mentoring and has common and different characteristics. The main difference is its greater independence. The method of independent search is chosen as the main method. The coach helps to build confidence in ability to perform tasks [12].

Thus, coaching promotes not only the transfer of knowledge, skills development, but also enhances the independent work of the student / cadet.

The term «mentor» is more used in professional pedagogical education, which is characterized by the following features: mentors periodically work either with a group of students or individually [5].

Researchers classify mentoring according to the following characteristics:

- by the number of participants in the process: individual, group, team;
- by the regulation of interaction: formal and informal;
- by the nature of conducting: direct, indirect, remote;
- by the vector of developmental action: collegial, mutual, reverse;
- by duration of the program: situational, corrective [13].

The following types of mentoring are distinguished in the works of scientists: mentoring-supervision; formal mentoring; situational mentoring; informal mentoring [5].

According to T. Osipova's classification, the following types of mentoring activities are studied: educational-cognitive, developmental, diagnostic, corrective, organizational, communicative, career guidance, research, reflective [10]. Each of these types of mentoring performs its function, which is only part of the overall function of mentoring.

Mentoring is based on the following pedagogical approaches: systemic, activity, axiological, humanistic, integration, synergetic [13]. In Ukraine, the concept of «mentoring» was borrowed from Western scholars, where it was presented as a «mentor». The mentor was a wise and responsible man, so he was entrusted with raising children.

Among the main methods that give a positive effect are the introduction of training, role-playing and business games, the principles of differentiation and individualization [14].

Among the tasks of mentoring, we highlight the following:
- improving the quality of professional training of future professionals;
- mastering the basics of independent activity by future specialists;
- reducing the period of adaptation to learning conditions;
- development of professional identity;
- continuous improvement of forms and methods of mentoring.

**Discussion.** To study the issue of the need for future specialists in mentors and their role in becoming a future specialist, a survey of third-year students of Chernivtsi National University named after Yuri Fedkovych was conducted, which addressed the following issues:

1. What is mentoring and what is its role in training future professionals?
2. What qualities should a mentor have?
3. Which of those around you do you want to see as a mentor?
4. What problems worry you the most and can they be solved with the help of a mentor?
5. Do you see yourself in the future as a mentor?
6. Do you have the basic qualities of a mentor?
7. What do you think needs to be improved to be a competent mentor?

An analysis of the responses of future primary school teachers led to the following conclusions: more students reduce the role of mentor to class teachers and curators. They do not understand the broader meaning of the mentor (78 %), and almost all students submitted a complete recalculation of the main qualities of the mentor (92 %). Some teachers are considered to be their mentors (they are not always curators), they mostly choose teachers with about 5 years of experience. In the answers, the fact that not all students see their parents as mentors is alarming and gives food for thought. 34 % of respondents indicated seeing themselves as mentors in the future. They explain this by saying that it is very responsible, because sometimes the fate of a person depends on the advice of a mentor.

When asked what they think needs to be improved, the majority of students (63 %) said that everything will come with experience. Some said that they did not think about it.

This analysis showed the importance of mentoring and the fact that some students are ready to rely on advice all their conscious lives.

**Conclusions.** The analysis of the psychological and pedagogical literature has shown the importance of the problem of mentoring in the formation of future professionals and the formation of personality. The mentor must be a specialist competent in both the profession and in solving various situations. The mentor needs to be taught and educated, prepared for life. In further research, we consider it necessary to study the psychological problems of mentoring, as the work is related to different psychotypes of people, their characteristics.

**Author contributions.** The authors contributed equally.

**Disclosure statement.** The authors do not have any conflict of interest.

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# CHAPTER 2
# INNOVATIONS IN THE MANAGEMENT OF EDUCATIONAL INSTITUTIONS

## APPLICATION OF MODERN INFORMATION SYSTEMS AND TECHNOLOGIES IN SCIENTIFIC ACTIVITY

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***Abstract.*** *The development of a single information space with the intensive introduction of information systems has led to the rapid accumulation of information resources, the bulk of which are publications of research results. In modern society, the most important result is the result of scientific research, not just the process of activity or thought. As the number of scientists increases, the question of the scientific contribution of each of them arises. The weight of a scientist in the scientific community, his influence on events in his chosen field of science, is now largely determined by how fully, constructively and organically presented the results of his research on the Internet. It is difficult to evaluate scientific activity with only one parameter, especially since there is a need to evaluate using quantitative and qualitative indicators. This is due to many problems, the main of which is to take into account the quality of scientific work and interpretation of indicators in the numerical dimension, which allows to obtain important information about the relevance of a particular topic and vice versa. It is important to remember that international open access scientometric platforms are a powerful non-profit tool for disseminating, publishing and analyzing the use of research results. They provide an opportunity not only for quality evaluation of scientific information, but also for close cooperation between scientists around the world. Scientometric calculations in such systems allow to determine important citation rates and statistics of scientific activity of researchers. The article highlights the problem of using international scientometric databases in research activities as web-oriented resources and services that are a means of publishing and disseminating research results. The basic concepts of the problems of using open digital systems for the evaluation of scientific research are systematized. Functionalities and tools of scientometric databases are investigated. An overview of the most popular open access scientometric databases. The advantages of using international scientometric databases and social scientific profiles in conducting research and their prospects, which are the allocation of cloud information and analytical services of this system.*

***Keywords:*** *informative systems, technologies, scientific activity, open and the closed access, scientifically metrical database*

***JEL Classification****: O 30, O 31, O 32, O 33, M 14*

*Formulas: 0; fig.: 1; tabl.1; bibl.: 17*

**Introduction.** It is difficult to evaluate scientific activity with only one parameter, especially since there is a need to evaluate using quantitative and qualitative indicators. This is due to many problems, the main of which is to take into account the quality of scientific work and interpretation of indicators in the numerical dimension, which

allows to obtain important information about the relevance of a particular topic and vice versa.

There is a problem of using web-oriented resources and services as a means of implementing the results of scientific research, in particular their publication and dissemination. This ensures, firstly, the publication of products based on the results of scientific research and access to it by Internet users, and, secondly, automates the processes of collecting, processing and submitting data on the quantitative and qualitative characteristics of such publication.

**Literature review.** The use of international scientometric databases in scientific activities is considered by domestic (O.R. Garasim, V.D. Ageev, D.O. Tarasov, G.O. Oborsky, A.A. Biloshitsky, V.N. Burkov, V.D. Gogunsky, O.M. Spirin, L.Y. Kostenko, V.M. Bykov) and foreign scientists (E.Z. Suleimenov, V.A. Frolova, D. Nicholas, V.M. Vasilieva, S.D. Khaitun, A.N. Leontiev, J. Bar-Ilan, R. Price, J. Kaur, D. Lupton,), and others.

Access to the publications of the world community of scientists opens new opportunities for the analysis of the scientific level of research. Citation of scientific works by scientists is an assessment of the quality and significance for science and practice of the results.

**Aims.** The aim of the article are the detailed analysis and ground of directions of the use of the modern informative systems and technologies in scientific activity.

**Methods.** For the decision of this aim such methods of research were used: supervision and generalization; organization of all basic elements; method of scientific generalization, that gave an opportunity to set forth conclusions.

**Results.** In modern society most ponderable is a result, that gives scientific research, but not only process of activity or idea. With the increase of amount of scientific a question appears about a scientific deposit each of them. Weight of scientist is in a scientific concord, his influence on events that take place in the select by him area of science, presently in a great deal determined by that, as far as full, structurally and the organically presented results of his researches in an Internet-network [1].

In particular this was reflected in various documents of the Ministry of Education and Science of Ukraine, which strengthened the requirements for obtaining degrees and academic titles based on the availability of publications in foreign and domestic journals indexed on Scopus and Web of Science platforms. Therefore, creating your own profile in reputable specialized scientific services and its optimization will help the researcher to effectively present their own scientific publications, find new colleagues, open new opportunities for research funding and improve their scientometric performance. At the same time, the effective presentation of preliminary research results by the scientist and his communication with foreign colleagues and partners becomes very important. An effective solution in solving this problem is the use of modern information and communication technologies and in particular specialized information services for scientists on the Internet [2].

Search and information capabilities of the system allow:

- look for colleagues involved in the relevant field of research;

- select lists of scientists by place of work, place of defense of the dissertation, institution, department, city;
- view the list of publications of the scientist: abstracts, dissertations, books, scientific articles;
- download available full texts of scientific publications;
- receive information on available information sources of reference and biographical nature;
- to determine the range of scientists connected by scientific and family ties;
- view information of bibliometric profiles of scientists;
- use the automatically created list of co-authors [3].

In addition, creating your own profile in reputable specialized scientific services and its optimization will help the scientist to effectively present their own scientific publications, find new colleagues, open new opportunities for research funding and improve their scientometric performance. We can say that a scientist should advertise his achievements. Also, when trying to get grants for research, conferences, internships or for re-certification in addition to CV (summary) and a list of publications, it is sometimes necessary to indicate your Scientific ID, H-index, etc. Such information should be always up to date with the scientist [4].

The so-called author identifier (ID) is a unique identifier used to identify a scientist, given that researchers have the same or similar surnames and names, and to combine all the scientist's publications and research with the scientist's own profile in databases. or in scientific social networks.

Most networks for scientists include various functionalities and tools (Figure 1).

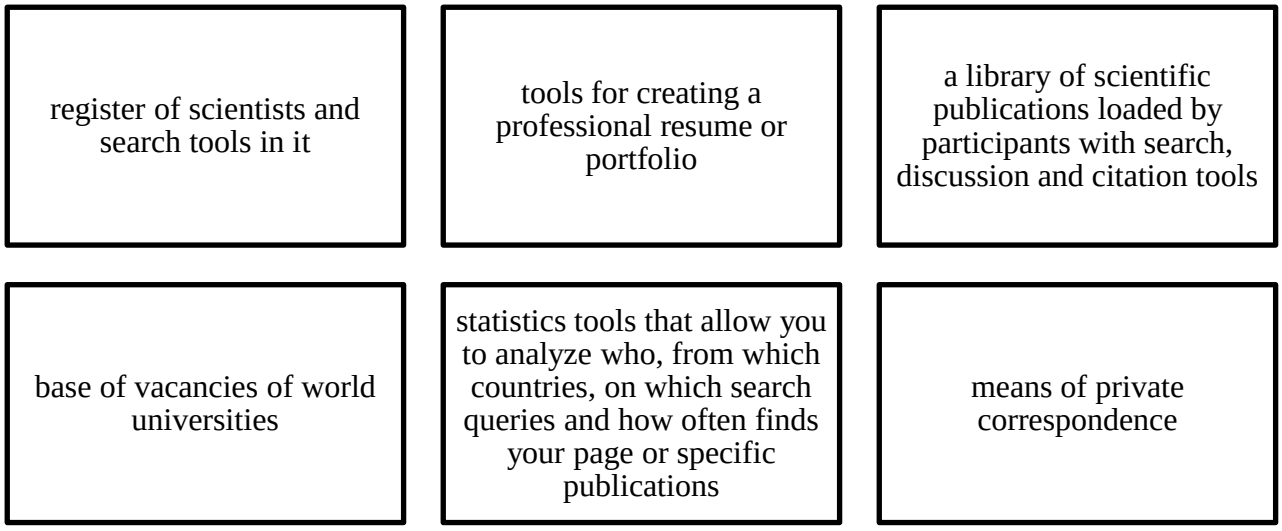


**Figure 1. Functionalities and tools of scientometric databases**

*Source: compiled by the author on the basis [5-6]*

At the same time, on the basis of the analysis of scientific, methodical literature, normative documents the basic terms and concepts concerning a problem of use of open digital systems for an estimation of scientific researches have been allocated (Table 1).

**Table 1. Basic concepts of the problems of using open digital systems for the evaluation of scientific research**

| Concept | Brief description |
|---|---|
| Open access | free, fast, constant, full-text real-time access to scientific and educational materials, which is implemented for any user of the global information network, carried out mainly to peer-reviewed research journals and institutional repositories. |
| Scientometric database | bibliographic and abstract database containing tools for tracking citations of scientific publications. Such databases are search engines that generate statistics to determine the status and dynamics of demand, activity and impact indices of individual scientists and research organizations. |
| Citation index | a quantitative indicator that indicates the impact of individual scientists or research teams on certain scientific fields, given the quantitative characteristics of the use of research results. |
| Monitoring the implementation of scientific results | collection, processing and submission of information on quantitative and qualitative indicators of the course of implementation and the volume and nature of implementation of products of scientific institutions (scientific, research and production, training, reference, electronic resources, etc.) are provided. |
| Information and analytical support of scientific research | assistance and assistance to the subjects of research activity in obtaining and analytical processing of information and data on the processes of planning, organization, conducting and implementation of research results by means of information technologies. |

*Source: compiled by the author on the basis [7-10]*

There are various specialized scientific services in which a scientist can create his own profile. Creating a profile of a scientist depends only on free time and the desire to disseminate information about their own scientific achievements in the national and international scientific and information space.

Today, the Scopus database platform is positioned by Elsevier as the largest platform with more than 24,000 scientific publications. It should be noted that these platforms are not the only scientometric bases of peer-reviewed scientific literature. The Google Scholar system is widely used on the Google Network platform. Less popular is the scientometric database created in 1999 in Poland, Index Copernicus. In Ukraine, there are also some attempts to introduce accounting for scientific activities through citations of scientists, in particular, the database "Bibliometrics of Ukrainian Science" is being formed. Thus, in the world market there is some competition between scientometric databases with peer-reviewed scientific literature.

It is advisable to consider the most common and authoritative scientific services with which you can create your own profile:

- *Scopus Author ID* - the author's identifier, which is automatically assigned to the researcher when his publications appear in publications indexed in the Scopus scientometric database. Given the automatic creation of the profile, there is a need for personal editing and making changes to the profile, which can be done regularly without even having a special subscription to the Scopus database [11].

It is a bibliographic and abstract database and a tool for tracking citations of articles published in scientific journals. Is one of the components of the integrated scientific and information environment SciVerse. For authors who have published more than one article, Scopus creates individual accounts - author profiles with unique Author IDs (with one publication, profiles are also created but hidden). These profiles provide information such as author's name options, list of places, number of publications, years of publication, research areas, references to major co-authors, total citations to the author's publications, total number of sources cited by the author, Worse author index etc. The database allows users to use unique author IDs to generate search queries and set up notifications (email or RSS) about changes in author profiles.

In many countries, the Scopus database is one of the main sources of scientometric data for evaluation research at the state and / or corporate level.

- *Researcher ID* - a register of unique identifiers of scientists from Clarivate Analytics (developer of the Web of Science platform). Some journals require this number to be provided when submitting an article for further correct indexing by the author. The free add-on from Clarivate Analytics allows the author to compile their publications and evaluate their citations on the basis of Web of Science, even if these articles have not been published in publications indexed by Web Of Science. It is possible to add publications to the profile via EndNote or ORCID. From 2019, ResearcherID and Publons profiles have been merged into a single account to take full advantage of Web of Science [12].

This unique identifier is aimed at solving the problem of author identification. Scientific publications often indicate the name, surname and initials of the authors of the article. Sometimes, however, there are authors with the same name, with the same initials, or the name printed in the journal may contain an error that leads to several spellings of the name of one author, or the same spelling of the name and surname of different authors.

On the website of the database, authors have the opportunity to link their articles to their own profile. Thanks to this, in particular, they can also keep their list of publications up to date and online. Thus, it is possible to create an exhaustive list of the author's work, as not all publications are indexed in the Web of Science database.

The combined use of ResearcherID and Digital Object Identifier by the researcher allows to obtain a unique association of authors and scientific articles. ResearcherID can be used to link researchers to registered clinical trials, or to search for colleagues and staff in a specific field of research.

- *ORCID (Open Researcher and Contributor ID)* - the only open, international, multidisciplinary register of unique identifiers of researchers. Provides free access to the profiles of scientists and transparently represents their research activities. The 16-digit ORCID number is a link to the online CV (resume) of the scientist, which must be indicated for the correct identification of the scientist when applying for grant funding, articles, etc [13].

ORCID is unique due to its independence from scientific disciplines and national borders, as well as a well-established system of interaction with other identification systems (eg scopus). ORCID-identification of scientists also allows to solve the

problem of conscious or accidental use of homoglyphs in writing the names of scientists. No information about the person is encoded in the ORCID number. These identifiers have been designed to be useful in situations where personal information should not and cannot be publicly available. In addition, the identifier is intended for long-term use, all information that may change during a person's career can be properly edited and edited by the user.

- *Google Scholar* - is a non-profit specialized search engine that indexes scientific publications and provides citation data. The Google Scholar profile is part of the Google search engine. This search platform indexes the full text of scientific publications of all formats and disciplines, allows authors to monitor citations of their own publications or citations of a particular author, follow a specific topic, see your coefficient of Hirsch, and more. The profile can be closed (accessible only to the owner) and open (then it will be displayed in the search by person's name). If the profile is open and linked to the author's university address, such a profile is taken into account when determining the ranking of universities by the citation index (Webometrics). The author's publishing activity is most widely represented in Google Scholar [14].

Creating your own Google Scholar profile allows authors to keep track of bibliographic references to their articles. You can view who cites publications, view citation graphs over time, and calculate several scientometric metrics. In addition, the names of researchers with a verified Google Scholar profile are highlighted in the search results as hyperlinks. Articles in publications not presented on the Internet and not indexed by Google Scholar can be submitted manually (subject to identification of the scientist and registration by e-mail at a scientific institution or educational institution).

Google Scholar provides both simple and advanced searches for academic literature across many disciplines and sources, including peer-reviewed articles, dissertations, books, annotations, and articles published by academic journals, professional associations, universities, and educational organizations. In addition, it shows the best results in the ability to search for citations, as some of them are placed in patents, conference proceedings, books, ie in documents that are poorly represented in the largest scientometric databases. This allows you to find the research that best meets the demand, among the large number of academic research papers. Like Google's universal search engine, specialized Google Scholar informs the user of the title, snippet and hyperlink to the document.

In addition to scientific identifiers, it is possible to maintain scientific profiles in scientific networks (Academia, Figshare, ResearchGate and others):

- *ResearchGate* - is a free social network, an information platform for the scientific community and a tool for collaboration between scientists from different scientific fields. This is a scientific network that can be registered only from a university or business address. In it, the authors inform about their publications - with or without the text, projects, etc. The system allows you to follow certain authors or specific scientific topics (research interests). A feature of this network is the ability to ask a public question and get an answer from colleagues. The system generates its own

Hirsch coefficient, ranks scientists, in particular, according to the statistics of viewing within the educational institution [15].

- *Figshare* - a platform for the accumulation of scientific, academic texts. It can store both drafts and working materials (in a closed format, accessible only to the owner), and published works in the public domain. It is possible to see how many readers were in the publication [16].

- *Academia* - is a scientific network where anyone can register. It allows you to teach any published and unpublished works, presentations, lecture texts or something, follow certain authors or specific scientific topics (research interests). If the author submits a full-text file, it is available for download by readers. An important function of this scientific network can be considered the discussion of a draft of the manuscript with a closed group or certain persons, the ability to communicate directly with a particular author. Currently, about 150,000 scientific articles are uploaded to the site every month. The number of registered users is more than 30 million [17].

**Discussion.** The above-mentioned profiles and social networks are useful for universities, as they allow you to track information on research and teaching staff, to generate reports on research activities. For libraries, the cataloging process by authors is simplified. Grant organizations have the opportunity to see a list of publications by a particular author and the grants they have received. Scientific communities can see the publishing activity of their members or potential conference participants.

Research shows that texts published in scientific networks may have a higher level of citations, although some scholars question the impact of online profiles on the use of scientific documents and the quality of citations.

However, the effective use of new online opportunities by researchers helps to promote the results of research and higher education institutions. Moreover, the use of Internet tools by scientists has led to the development of new areas of knowledge, including webometry, which studies information resources using bibliometric and infometric approaches.

**Conclusion.** The impact of new information technologies on modern life society is significant and multifaceted. The Internet continues to have a significant impact on the nature of mass communication, on the one hand, increasing the availability of dissemination channels, providing scientists with great opportunities to disseminate scientific and popular science content, on the other - creating conditions for high competition for readers. science. If science wants to maintain its authority and be a significant factor in public life, it is necessary to look for new and effective forms of popularization of science, in particular, Ukrainian scientists should actively use new online and free means of scientific communication, especially new social media, which significantly expand the audience of popular science materials.

Thus, scientific profiles and academic networks are not only a practice of publishing houses and a requirement of certain organizations, but also promote the development of scientists, provide them with up-to-date information about the work of colleagues, provide feedback and scientific advice. At the same time, international open access scientometric platforms are a powerful non-profit tool for disseminating, publishing and analyzing the use of research results. They provide an opportunity not

only for quality evaluation of scientific information, but also for close cooperation between scientists around the world. Scientometric calculations in such systems allow to determine important citation rates and statistics of scientific activity of researchers.

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# CHAPTER 3
# THEORY AND METHODS OF VOCATIONAL EDUCATION

## PREPARATION OF FUTURE EDUCATORS IN HIGHER EDUCATION INSTITUTIONS FOR THE SPECIFICS OF THEIR PROFESSIONAL ACTIVITIES IN AN INCLUSIVE EDUCATION

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***Abstract.*** *The article identifies the importance of inclusive education in Ukraine based on the analysis of psychological and pedagogical literature. The main qualities that should be inherent in an educator working in an inclusive environment: humanity; the ability to ensure the connection between the child and the educator; spirituality; the ability to shape the child's personality; possession of methods of practical pedagogical activity, pedagogical technologies; availability of pedagogical abilities. The necessity of preparation of the future educator for the following is proved: composition of the complex program of development of the child with special educational needs; providing additional services and introducing new forms of support in the learning process; organization of observation of the dynamics of the child's development. The method of preparation for such activities is shown. Positive results are gained by psychological and pedagogical support, which means a comprehensive system of measures for the organization of the educational process and child development according to the individual program. It is participated by the director of the preschool institution, methodologist, educators, practical psychologist, social worker or teacher, special education teacher, rehabilitation teacher and parents, medical worker of the educational institution, doctor, child assistant, social protection specialists, various services children, etc.*

*It is determined that the professional activity of an educator in the system of inclusive education involves mastering a specific way of working in an inclusive environment: to treat all children equally, give students with special needs feasible tasks, involve such children in group work, joint problem solving; with the use of modeling, games, projects, theatrical performances, artistic creativity. Much attention is paid to the professional competence of the educator.*

***Keywords:*** *future educator, inclusive education, preschool institution, individual program, specifics of preparation for work in an inclusive environment, professional competence of the educator.*

**JEL Classification: A22, I23**

**Formulas: 0; fig.: 0; tabl.: 0; bibl.: 11**

**Introduction.** Ukraine is creating conditions for equal access to education, both general and professional. This ensures the development of another area of the educational process of inclusive education. It is known that the birth rate of children with certain abnormalities in physical and psychological development is increasing in

Ukraine. Identifying and eliminating developmental deficiencies is a matter for health professionals, and providing normal conditions for the development of such children is the task of educators and psychologists, ensuring equal access of every child to quality education, regardless of social background, abilities and place of residence. The educational process in the system of inclusive education goes through all the general stages that correspond to the established educational process. Therefore, inclusive groups and inclusive classes are organized at each stage. Mixed groups, mixed classes also are established. In higher education institutions, children with special needs are engaged in general groups. Because inclusive education has the same consistency as general education, we started our research with preschools.

**Literature review.** The issues of professional training of future teachers are paid attention to in the research of A. Aleksyuk, V. Bobrytska, A. Boyko, L. Vovk, N. Demyanenko, N. Kichuk, V. Kuzya, V. Lugovoi, N. Nychkalo, D. Nikolenko, O. Oleksyuk, O. Pekhota, O. Savchenko, L. Romanyshyna, R. Skulsky, I. Shorobura and others.

G. Bilenko, A. Bogush, L. Zdanevych, I. Lutsenko, K. Krutiy, O. Kucheryavy, N. Lysenko, V. Rozgon, and others covered the problem of training future educators of preschool institutions in their works. I. Zvereva, I. Ivanova, A. Kapska, O. Molchan, L. Pisotska and others considered the organization of social and pedagogical work with children with disabilities in their works. All works draw attention to the need to train professionals who will work in an inclusive education. The works indicate the gradual introduction of inclusive education from preschool to vocational.

**Aims.** The problem of preparation of future educators to work in inclusive education has not been studied enough. Therefore, the aim of the article is to study the problem of preparation of future educators for the specifics of work in an inclusive education.

**Methods.** Theoretical methods (analysis, synthesis, comparison, modeling) were used in order to study the state of research of the problem, to determine the main directions of further research, to build a structural model of training of future educators. Empirical methods (surveys, questionnaires, testing) were used in order to study the readiness of future educators for professional activities in an inclusive education. Methods of mathematical statistics were used to determine the effectiveness of the study.

**Results.** Based on the analysis of psychological and pedagogical literature on the training of future educators, the importance of the problem of inclusive education in Ukraine was determined. The urgency of this problem is indicated by legal documents, in particular: Laws of Ukraine «On Fundamentals of Social Protection of Persons with Disabilities in Ukraine» [6], «On Rehabilitation of Persons with Disabilities in Ukraine» [7], which guarantees children with special needs opportunities equal to other children.

The main figure in the educational process in the preschool is the educator. According to O. Kononko, a modern educator is a teacher who uses modern technologies of education, knows the basics of child psychology, uses pedagogical techniques, directs his professional activities to help children with disabilities. This

educator «... looks at education as a process of expanding the child's competent choice of content, place, duration, partners, materials for their classes; creating conditions for its self-development, manifestation of essential forces; search for pedagogical technologies for building a developmental lifestyle of preschoolers; formation of the foundations of personal culture; creating an educational environment» [2].

The psychological and pedagogical literature identifies the main qualities that should be inherent in the educator who works in an inclusive environment:

– human: the ability to ensure communication between the child and the educator on the basis of mutual understanding;
– spiritual: on the basis of pedagogical experience of mankind to direct the educational process on the formation of the child's personality;
– practical: mastery of methods of practical pedagogical activity, pedagogical technologies;
– availability of pedagogical abilities, ability to create personal-humane interaction [2].

The available qualities imply that the educator should promote the development of those qualities of the child that ensure its entry into the educational environment in the future. In this process, special knowledge, possession of information are in pair with professional-pedagogical culture of educators (balance, high mobility, emotional stability, sufficient level of intellectual development, high level of imagination, imagination, fantasizing).

The educator needs to know that an inclusive educational environment is characterized by a system of values to the educational process, the development of children with special educational needs, and is based on a combination of tools, external and internal conditions, and modern technologies [6].

To work in an inclusive environment, the educator must have methods of working with children with limited educational needs and know the possible practical situations for the formation of skills and abilities of students. This is the main specificity of the work of educators and inclusive groups.

This requires that the educator must form the tasks of the program within the educational capabilities of the group, correctly assess the results of its implementation, and take into account the individual capabilities of each student, ensuring their motivation. Therefore, individualization of the educational process is mandatory. And this is a prerequisite for successful learning of students with special educational needs [10]. Future educators should know this and be ready for such features of their professional activity.

To ensure the individualization of education, students must learn to: develop comprehensive programs for the development of children with special educational needs; provide additional services and introduce new forms of support in the learning process; organize observations of the dynamics of child development [8]. They must learn to compile individual child development programs. «An individual development program is a written document that is generally a contract between the teaching staff and the child's parents or guardians. It establishes requirements for the organization of education and correctional and developmental work of a child with special educational

needs, in particular, determines the nature of educational services and forms of support» [8]. Parents of children should be involved in drawing up an individual program, because they know the possibilities of children better.

The following components were introduced into the individual development program:

1. General information about the child.
2. Current level of knowledge and skills.
3. Information on developmental disorders of the child.
4. Special and additional educational services needed by the child.
5. Ability to adapt.

Adaptation is a must because it affects the way the content is presented while preserving the content.

Another component of the individual program is the system of assessment of students' knowledge. It should be built in such a way as to motivate children to learn. Each individual program should have time dedicated to correctional and developmental classes. A modular training program will help determine the location of such work. As a rule, such work is carried out after studying a block of topics with common concepts.

Positive results are obtained by psychological and pedagogical support, which means a comprehensive system of measures for the organization of the educational process and child development according to the individual program.

Psychological and pedagogical support involves the presence of various specialists: the director of preschool education, methodologist, educators, practical psychologist, social worker or teacher, special education teacher, rehabilitation teacher and parents. In addition, the following are invited: a medical worker of the educational institution, a doctor, a child's assistant, specialists in social protection, various services for children, etc.

The professional activity of an educator in the system of inclusive education involves the possession of special ways of working with students with special educational needs: not to emphasize that they are special children; to involve them as much as possible in the same activities as other children, but to give them feasible tasks so that they feel that they are coping with them; to involve children in group forms of work, joint problem solving; using modeling, games, projects, theatrical performances, artistic creativity [9].

Definitions with their new reading play an important role in solving the problem of inclusion: «interaction, mutual activity, cooperation of teachers and students in the process of their communication at school» [3].

Pedagogical interaction is understood as the unity of functional-role (the teacher acts as the organizer of the process) and personal aspects of the relationship (transfer of the educator's own individuality). Such interaction is based on values: human value in all its perspectives; everyone has the right to have their own opinion; real education can only be carried out in the context of real relationships; all people need the support and friendship of their peers; for all, progress may be in what they can do rather than in what they cannot; all people need each other.

The main purpose of the work of a preschool teacher is to provide counseling and assistance to families raising children with special educational needs. But for this they must undergo appropriate training in higher education institutions. Practice shows that the parents of such children, in addition to the help of health professionals, psychologists, need the help of teachers, who are educators. Parents and their children need attention, patience, care, and communication with other parents. This allows the family to live a normal life.

When working with such families, teachers are obliged to take into account the characteristics of both children and parents, which requires a creative approach to choosing methods of work. Their modernization will help to avoid common methods of work, make the right decisions, and modernize methods of pedagogical interaction.

There is now a need for educators-innovators who understand the needs of families with children with special educational needs, know how to help such families, and know how to prepare children for life. Thus, the modern educator of the inclusive group of preschool education should be able to perform the following functions: health, educational, developmental, communicative, informational, coordinating. Each of these functions has its own tasks that need to be performed to achieve a positive result. And to perform these functions, the educator must be professionally competent.

According to G. Belenka, the professional competence of an educator is an integrated concept that includes: worldview of the individual, deep awareness and practical skills in the chosen field of activity, developed professionally significant qualities, authority built on this foundation. At the same time, the researcher warns: «Professional competence of a preschool teacher cannot be considered only as a cognitive component of pedagogical professionalism and the basis of the culture of professional thinking, consciousness and self-awareness. Professional competence of a teacher-educator of preschool children is a much broader concept» [4].

The educator must have the following personal qualities, which T. Ponimanska points out: the ability to reflect, cooperate with the child and his parents; ability to give moral support of the child; desire for emotional communication with the child; desire to replenish knowledge, engage in self-learning and self-education, the ability to identify and take into account the interests of children in education and their right to respect [5].

Nowadays, an educator must have computer literacy, which means mastering the means of information and communication technologies.

**Discussion.** Before making a plan for the pedagogical experiment, we conducted a statement phase of the experiment on the basis of the Khmelnytsky Academy of Humanities and Education. To analyze the completeness of students' knowledge about the features of inclusive education, we conducted a survey of students of different courses in the specialty «Preschool Education» [11].

The results of the study: 78% did not give a reasoned answer to the questionnaire «What do you think the term inclusive environment means?», 15% of students gave complete answers, and others did not answer at all.

In the answers to the questionnaire «Who do you think belong to the category of children with special educational needs» almost all of the students gave the correct

answers. We also observed the same in the analysis of students' answers to the question «What, in your opinion, are the features of the professional activities of educators of preschool education?», 45% gave a complete answer.

Questionnaire question «Can inclusive competence of students be formed during the period of study at a higher education institution?» caused significant difficulties for students. 74% could not give a clear and reasonable answer to this question

The question of the questionnaire «What method of education, in your opinion, is most conducive to the development of the personality of a child with special educational needs» received the following answers from almost all respondents:

- special education – 28%;
- individual training – 73%.

No less difficult for students was the question of the conditions that contribute to the preparation for work in an inclusive environment, which almost students could not answer. «What conditions need to be provided for the implementation of inclusive education.» The majority of respondents answered as follows: individual approach – 43%; individual program for which all children with disabilities will study – 36%; improvement of material and technical base – 11%; increasing the level of inclusive competence of educators – 7%. However, a significant number of respondents could not answer this question.

These results suggested the idea of further research on the impact of pedagogical conditions on the readiness of future educators to work in an inclusive environment.

**Conclusions.** The analysis of psychological and pedagogical literature showed the importance of introducing inclusion into the educational system. Preparation of future educators to work with children with limited educational needs should be carried out in higher education institutions in the study of special disciplines and during pedagogical practice. The effectiveness of the process depends on the right pedagogical conditions. Therefore, further research will be aimed at studying the effective pedagogical conditions for preparing future educators to work with children with limited educational needs.

**Author contributions.** The authors contributed equally.

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# THE ESSENCE OF READYNESS OF FUTURE FORESTRY PROFESSIONALS FOR PROFESSIONAL ACTIVITY ACCORDING TO INFORMATION AND COGNITIVE CRITERIA

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***Abstract.*** *The article reveals the essence of readiness of future forestry specialists for professional activity according to the information-cognitive criterion. It is established that the criterion is related to reasonable structuring of the content of professional training during classroom classes, introduction of pedagogical technologies, actual justified effective methods of professional training, including formation of professional and personal characteristics of the applicant. The components of the information-cognitive criterion of readiness of future forestry specialists for professional activity are revealed: informational and cognitive. It is established that the information component of the information-cognitive criterion contains the following components: determination of the characteristics of forestry information; identification of information sources; collection of operational information in areas of forest production activities; data processing and analysis using general and special purpose computer technologies; formation of qualitatively new knowledge about forest objects. It is established that the cognitive component contains a set of theoretical knowledge that reflects the intellectual development of the individual, such as understanding the unity and integrity of the scientific picture of the world, the presence of a system of methodological knowledge and categories, the ability to establish intra- and interdisciplinary links. . It is revealed that the content of the cognitive component includes: the system of knowledge both at the level of information and at the level of knowledge that allow to form personal skills and abilities; ability to process the received information, which includes comparison of the received knowledge with own life experience, studying of properties and the analysis of structure of the received data, revealing of their signs and features; the need to master new knowledge that characterizes the presence of cognitive interest; ability to perceive information materials in order to increase the social and professional significance of their own activities. Indicators of information-cognitive criterion are offered: indicator of formation of professional knowledge and receptivity of theoretical material, indicator of comprehension of special forestry theories , indicator of formation of professional competencies.*

***Keywords:*** *readiness, future specialists, forestry, professional activity, information-cognitive criterion, competences, knowledge, skills, information culture.*

**JEL Classification: A22, I23**

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**Introduction.** In the current conditions of reforming the forestry sector, overcoming the crisis and stabilizing the forestry complex, the priority area of transformation is the training of forestry specialists. Modern society today requires from future forestry professionals deep theoretical and practical knowledge in the field of forestry. The success of the process of formation and development of civilized, highly developed forestry production depends on their professional competence, personal and social maturity.

The task of transforming forestry education can be found in the implementation of the cognitive function of learning, rational structure of learning content, using effective methods, taking into account the specific needs of the region. Therefore, the problem of strategic and practical development of the paradigm of providing professional training for future forestry professionals needs the attention of theorists and practitioners.

**Literature review.** To date, the national forestry education has accumulated considerable experience in the field of professional training of future specialists in the forestry industry (I. Vdovenko [2], S. Vyhovska [3], L. Makodzei [7], E. Mishenin [8], V. Hryk [18, 19] and others). Scientists argue that the training of future forestry professionals is aimed at equipping them with deep and comprehensive knowledge and skills in their specialty, knowledge of the content and methods of forestry science.

In this logic , it seems necessary to include in the system of professional training of future forestry specialists indicators of awareness, education, competence, which characterize the information and cognitive criteria of their readiness for professional activity. Regarding the specifics of professional training, information-cognitive is manifested through the focus of the learning process on creating conditions for conscious acquisition of professional knowledge. Thus, awareness, education, competence, as indicators of the quality of training of future forestry professionals, are manifested in the ability and need to discover and create themselves in the main forms of educational activities; opportunities for self-determination, self-actualization taking into account the acquired competencies ; the need and ability to communicate with the world based on a competency -based approach.

The component composition of training is analyzed in dissertation research and scientific publications of various authors. Thus, S. Tolochko in the structure of professional competence of farmers identifies among others the cognitive component [15, p.129].

According to E. Shmatkov, the content of preparation of future masters of forestry for future professional activity in general and management in particular should be aimed at forming managerial competence of applicants, in particular such a component as cognitive, aimed at mastering a set of scientific-theoretical and scientific-practical knowledge. management activities in general, and the peculiarities of its implementation in forestry in particular [17, p.43].

In the study of the process of formation of language and communicative competence of future specialists in forestry specialties O. Gridzhuk identifies content-cognitive criterion [5, p.448].

For the systematic development of self-educational competence of future foresters E. Chebotaryova proposes a cognitive criterion (mastery of knowledge, skills and abilities in self-education; formation of a positive "self-concept"; readiness for continuous self-education throughout life, etc.) [16, p.45].

N. Suchkina points to the presence in the structure of the value attitude of the applicants of the agricultural college to the professional activity of such a criterion as cognitive. The basis of the cognitive component of values, according to the author's research are the presence of professional values and ideals, socially valuable motives;

wide range of professional interests; awareness of personal responsibility for their work; the degree of formation of a professional position [14, p.40].

The criteria for the formation of professional competencies of applicants for agricultural free trade T. Vasiliev includes: the formation of professional knowledge, understanding and awareness of the social significance of the future profession; formation of interests, needs, motivation to acquire knowledge, skills, competencies of future professional activity in the agricultural sector [1, p.91].

**Aims.** The purpose of the article - to reveal the essence of readiness of future forestry specialists for professional activity according to information and cognitive criteria.

**Methods.** In writing the article, general scientific research methods, empirical (description) and theoretical (analysis, generalization, explanation, etc.) were used.

**Results.** In order to clarify the generalized indicators and to conduct high-quality diagnostics L. Nesterova developed criteria and functional indicators that characterize the information culture of future engineers of the forest complex, to which the author includes:

1) information activity - a process in which implemented different degrees of stability and development of information needs, interests and research abilities of the individual;

2) readiness for information communication, which is realized in the process of communication and is one of the most important characteristics of individual behavior in the information environment;

3) information style of thinking, which is manifested in the ability to assess the quality of information, to select from the mass of reliable information, to correlate it with existing information, etc .;

4) technological readiness, which is realized in the process of information activities and is formed on the basis of knowledge of information sources and the ability to use them in search of the necessary information;

5) emotional activity the author presents as a process in which emotions, emotional states, experiences and feelings that accompany the information activities and behavior of the individual, regulate and guide his actions and deeds due to the need for information;

6) worldview activity, which determines the process in which the need of each person in the system of attitude to the processes of informatization, the need for value orientations, the need to defend and approve them by their actions [9, p.100].

In the course of determining the criteria for assessing the professional training of agricultural specialists, which allow to determine the depth of his professionalism O. Karteshkina determines the relevant indicators. The criterion of professional competence includes knowledge, skills necessary for innovative activities of agricultural workers (assessment of the suitability of agricultural landscapes for cultivation of crops, implementation of their technologies, etc.), professional initiative - organizational and managerial skills of agricultural specialists (organization of production teams and management, making management decisions in different natural conditions, etc.). The author connects the development of initiative in the process of

professional training with the inclusion of a specialist in innovation, transformation of practice, the creation of new professional activities based on humanistic values. Initiative is a confirmation of the presence of high motivation to achieve, a steady need for self-realization, which is recognized by others. Professional competence includes knowledge and erudition that allow a person to competently judge the issues of professional activity, be aware of a particular field, as well as personality qualities that enable a person to act responsibly and independently. Professional competence is manifested in the successful solution of a certain class of professional tasks, is an important component and an indicator of a high level of professionalism [6, p.81].

The information component, as pointed out by O. Samokhvalov, is the result of many interrelated actions that form the basis of the future specialist, is presented in the form of a product, according to the goal and contains, in addition to production indicators, top level information [ 12, p.30 ] .

The information component of the information-cognitive criterion contains the following components: 1) determination of the characteristics of forestry information; 2) identification of information sources; 3) collection of operational information in areas of forest production activities; 4) data processing and analysis using computer technologies of general and special purpose; 5) formation of qualitatively new knowledge about forest objects.

Cognitive component contains a set of theoretical knowledge that reflects the intellectual development of the individual, such as understanding the unity and integrity of the scientific picture of the world, the existence of a system of methodological knowledge and categories, the ability to establish intra- and interdisciplinary links on various scientific concepts and methods.

Cognitive component, carries the semantic load of the subject, its content, the formation of fundamental, basic professional and special professional knowledge [ 6, p.63 ].

This component synthesizes humanitarian, socio-economic, natural, professional knowledge in the field of forestry, which allows to apply them effectively in different situations, providing an information basis for professional activities.

The content of the cognitive component includes: 1) a system of knowledge both at the level of information and at the level of knowledge that allows you to develop personal skills and abilities; 2) the ability to process the information obtained, which includes comparing the knowledge gained with their own life experience, studying the properties and analysis of the structure of the data obtained, identifying their features and characteristics; 3) the need to master new knowledge that characterizes the presence of cognitive interest; 4) the ability to perceive information materials in order to increase the social and professional significance of their own activities.

Gridzhuk , the formed cognitive component of a specialist in forestry and woodworking industries should have an ecological and economic way of thinking, understand the organic unity and interdependence of man and nature, be able to ensure sustainable development of society in harmony with nature [ 4, p.232 ]. .

The cognitive component of the information-cognitive criterion presupposes the presence of professional competence in its structure. Scientists who deal with the

problems of professional competence (O. Ovcharuk [10], M. Popova [11], V. Strelnikov [13] , etc.) distinguish its components:

1. Actual qualifications (knowledge, skills and abilities in professional activities, necessary and sufficient for professional activities, ie knowledge of the subject of the specialist).

2. Cognitive readiness (ability to acquire new knowledge at the activity level, new tools, new information and computer technologies, the ability to successfully search and master the ability to learn and teach others).

3. Socio-communicative readiness (language skills, business ethics, explanation of their opinions and suggestions, understanding of their colleagues, knowledge and skills related to the implementation of social and professional contacts).

4. Possession of methods of technical-economic, ecologically-oriented analysis of production in order to rationalize and humanize.

5. Creative readiness, the ability to find fundamentally new approaches to solving known and new problems, both in the professional sphere and in related fields.

6. Understanding the trends and main directions of professional development in combination with spiritual, political, social and economic processes.

7. Conscious positive attitude to professional activity, both within the profession and the need, desire and willingness for professional development, corporate self-identification and positioning.

8. Personal-individual readiness, which is represented by a set of knowledge and ideas about oneself in the context of a professional role. This is a person's knowledge of their "strengths" and "weaknesses", both professionals and individuals.

With a person's focus on self-creation and self-affirmation, career growth is associated with personal growth. Personal growth determines the nature and dynamics of career growth, and vice versa, career motives stimulate personal growth [6, p.84].

Thus, professional competence is the basic basis for the criteria for determining the quality of training of future forestry professionals, the concept is integrated and includes several competencies . In this study, the most important are: special , environmental, design and research, organizational and communicative, individual competence. It is these components that ensure the completeness of the overall assessment of professional competence, actualize the importance of its complex manifestation in behavior.

The analysis of the scientific literature has shown that to date the criteria and indicators of readiness of future forestry specialists are insufficiently defined. Based on the developments of the above authors and a set of selected professionally important qualities , we are convinced of the relevance of our assumption of the selection of not cognitive but information-cognitive criterion as an algorithm for developing professionally important knowledge, skills, competencies and personality qualities, information culture.

This criterion is associated with reasonable structuring of the content of professional training in the classroom, the introduction of pedagogical technologies, relevant justified effective methods of professional training, which includes the formation of professional and personal characteristics of the applicant.

The content of the criterion, expressed as a set of competencies that include theoretical knowledge, practical skills and personal attitude to them, is shown in table. 1.

**Table 1. Content of information-cognitive criterion of readiness of future forestry specialists**

| Professional competence | Content | | |
|---|---|---|---|
| | knowledge | skills | personal attitude |
| Special | opportunities and areas of application of knowledge used in the activities of forest specialists farms | have professional skills in the field of forestry; preparation, processing and transfer of professional information of forestry orientation | ability to search and process the information necessary for high-quality performance of forestry tasks; understanding of the main tasks and promising areas of development in the forestry sector |
| Ecological | special information sources on modern achievements of domestic and foreign science in the field of forestry ecology | use information technology and communication tools as information support for environmental activities in forestry | value attitude to nature and the environment in the conditions of modern industrialization and technologicalization of production processes in the forest industry |
| Design and research | methods of obtaining and organizing various information; optimal research methods , systems and design methods using special software | choose the means of the most appropriate research methodology, correctly interpret the results of data processing; apply the information obtained in research and production activities | the ability to transform information in accordance with the goals and objectives; readiness to analyze and critically interpret information, forecast performance and make competent, operational decisions based on them |
| Organizational and communicative | opportunities for communication and network communication; means and methods of bringing various information to the members of the workforce; rules and requirements for the preparation of information and analytical reports, reviews, feedback and conclusions | process the information received for making operational management decisions; carry out professional and personal communication through forums and teleconferences, e-mail in compliance with generally accepted rules of conduct on the Internet | ability to choose decisions based on the received information, readiness for personal communication with using network communication technologies; readiness to master scientific and social experience together with the subjects of information interaction |
| Individual | diagnostic and testing programs for self-monitoring and self-assessment of activities; ways to protect against the negative effects of the information environment | navigate the diversity of information sources on electronic and printed media | ability to perceive and interpret information; conscious understanding of the need for constant replenishment of knowledge and the formation of new skills in the field of informatization |

*Source: compiled by the authors*

As a clear example, we can consider the process of studying forest soil science, in which it is important to know the method of determining the moisture content of the soil sample. Soil moisture is defined as the fraction of the mass of water contained in the soil during sampling by the mass of absolutely dry soil, expressed as a percentage.

Initially, applicants write a formula for better memorization, but later write only the equation, replacing some variables with values from the condition of the problem.

As applicants trained in problem solving, they learned to perform the sequence of actions needed to solve a problem or part of a problem - called tactical training (tactics means achieving a specific goal). But when problems become difficult, tactical training cannot help solve the whole problem. Then you need strategic training, which is to master the method of organizing the solution of the problem, which is best suited for any problem in a particular area. For example, when making recommendations for the use of forests for the cultivation of specific crops, you need to give a more complete agronomic characteristics of forest soils located in these areas, properly assess them, calculate the possible economic outcome.

Another dimension of competencies is that applicants who solve problems of a production nature learn competently perceive problems, offer alternative solutions, analyze the expected results, which allows them to apply more effective problem-solving procedures.

This can be demonstrated by the example of the topic "Erosion and protection of forest soils", quite difficult to understand, which has laws, theoretical provisions that underlie the visible characteristics of soil problems. Applicants are asked to classify a large set of problems into categories on the basis of similarities and differences: applicants receive several samples of forest soil with pronounced erosion. Applicants who have not developed the competence to determine the nature of soil damage, rely only on surface indicators (color, density, structure become the basis for their classification). Applicants who developed professional competencies attributed soil samples to the same type of erosion visually different, because they were associated with a common feature - low humus content, lack of fine soil (for example, for samples damaged by wind erosion).

Considering the mechanism of formation of professional competencies of applicants, we came to the conclusion that it is based on the process of acquiring knowledge and skills. This process consists of several cognitive stages, which are most closely interrelated: the perception of the material provides knowledge of phenomena and subjects of training in general, its understanding realizes the understanding of internal logical connections between parts of the subject, memorization and mastery contribute to preservation in the memory of the mastered material and the formation of readiness to reproduce it at any time to solve educational and production tasks.

To translate knowledge and skills in competence, the demand for acquired information in practical professional activities is organized, for which the applicant converts verbal or declarative knowledge (knowledge of facts and objects) into procedural knowledge (knowledge of how to perform various cognitive actions - search and processing information), which leads to its proceduralization (the process of transition from the explicit use of declarative knowledge to the direct application of procedural knowledge).

The most significant sign of increasing the level of competence of applicants is the formation of a set of perceptual properties that are used to encode problems. Formation and development of professional competencies is possible only if the applicant has motivation to learn, which affects the emergence of dialectical, systematic, logical generalization and contributes to a broad vision of problems and solutions, and

ultimately develops the scientific style of thinking of future professionals needed in further production .

Therefore, not only the completeness of the answer, knowledge of methods of agronomic indicators and analysis of forest soil properties, correctness of tasks in the final control were taken into account, but also active work throughout the semester, attendance, grades obtained in intermediate control, ability to work with equipment and devices, the results of definitions and analyzes obtained by the applicant, the ability to analyze, summarize and understand the data obtained, to prove them. All these parameters indicate a comprehensive approach to the assessment of academic achievement and the formation of professional competence as a result.

**Discussion.** The above allows in the information-cognitive criterion to identify the following indicators: indicator of the formation of professional knowledge and receptivity of theoretical material (degree of understanding of the essence of forestry concepts , laws, patterns, degree of logic of theoretical material in accordance with the educational situation); degree of understanding of the peculiarities and tasks of the production situation, the degree of mastery of the ability to classify and differentiate forestry concepts), an indicator of the formation of professional competencies .

**Result.** Thus, the information and cognitive criterion of readiness of future forestry professionals for professional activities is associated with reasonable structuring of the content of vocational training during classes, introduction of pedagogical technologies, relevant justified effective training methods, including the formation of professional and personal characteristics of the applicant. The components of the information-cognitive criterion include: informational and cognitive. Indicators of information-cognitive criterion are offered: indicator of formation of professional knowledge and receptivity of theoretical material , indicator of comprehension of special forestry theories , indicator of formation of professional competencies .

Prospects for further research are seen in the experimental verification of the readiness of future forestry professionals for professional activities in information and cognitive criterion.

**Author contributions.** The authors contributed equally.

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# PROBLEMS OF WEB TECHNOLOGY'S INTRODUCTION IN THE INFORMATICS AND MATHEMATICS FUTURE BACHELORS TRAINING

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***Abstract****. The article highlights the main tasks for the introduction of web technologies in the education sector. The study of the use and implementation of norms and methods of teaching future bachelors in the process of teaching mathematics and computer science courses using web resources requires special study. The introduction of web technology in the higher education system can be carried out in the following areas: support and functioning of the local network of faculties and the university as a whole; organization of the educational web portal or website, where all materials created by teachers and students can be accumulated; transferring library resources to electronic and providing access to them through the local network; involvement of all university teachers in the creation and use of open educational resources; formation of educational web space on the basis of web technologies. Each of these areas requires the availability of highly qualified personnel in the education system, and especially teachers and lecturers who would ensure the study of computer science and mathematics at the appropriate level. It becomes clear that the processes of informatization and mass global communication of society create a new social order in the higher education system for the training of computer scientists who have fundamental knowledge in computer science and mathematics and are able to use modern web technologies in future careers. Mathematical training of future specialists in computer science with the use of web resources should be cross-cutting and carried out both in the process of studying mathematical disciplines and through the introduction of appropriate special courses and workshops. It is this training that allows the future specialist to develop the appropriate skills and abilities. Systematic, purposeful use of web resources in the process of studying computer science disciplines allows students to deepen their understanding of educational material, increase learning motivation, provide creative, research direction, develop practical skills on specific material with a mandatory focus on professional tasks. to be a specialist in computer science.*

***Keywords***: *higher education; future bachelors; professional training*; *informatics and mathematics training; introduction of web technologies.*

**JEL Classification: A22, I23**

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**Introduction.** Today only the knowledge, skills and abilities acquired by young professionals during their studies are not enough to adapt to the conditions of market relations. Increasing the requirements of the modern labor market to the educational level led to changes in the educational systems of most countries and Ukraine in particular led to the search for ways to reform the educational process. One of the main tasks of the State Program of Higher Education Development for 2005-2007 was to ensure the innovative direction of higher education and its advanced nature, as well as deepening international cooperation, integration of the Ukrainian higher education

system into European and world educational and scientific space, expanding participation of higher education, scientists and students in international research projects. This way of education development emphasizes the importance of the competence approach as a factor in the convergence of educational systems.

In the context of joining the Bologna Process the national higher education system is undergoing significant structural and substantive changes. Today the task of higher education is to form in students a scientific worldview, a system of modern professional knowledge, the development of creative abilities, professional qualifications. The learning process should focus on the gradual creation of students' appropriate system of knowledge, certain skills, key and professional competencies, including information and digital. Competences are the criteria that determine the readiness of the graduate for professional activities.

The Law of Ukraine «On the Concept of the National Informatization Program» outlined the main ways to modernize national education through the introduction of information and communication technologies. Thus a modern school, both higher and secondary, needs teachers who respond quickly to changes in the social environment, effectively apply scientific and technological progress in learning, competently guide the personal development of students, creatively work to improve the learning process, use and demonstrate use of modern information technologies, in particular web technologies.

Analysis of the state of teaching mathematics and computer science in higher education shows that the level of formation of professional competencies of future specialists in computer science after graduation from these courses does not sufficiently meet the requirements of today; in terms of credit-module system, due attention is not paid to the study of the formation of information and digital competencies in the teaching of mathematics and computer science.

A significant role is played by web technologies, which are rapidly penetrating all spheres of society, including education, which aims to ensure the transition from industrial to information society through innovation in teaching, education and scientific and methodological work. The introduction of web technologies in the higher education system will accelerate Ukraine's transition to the information society and ensure that it receives a worthy place in the global educational space.

**Literature review**. The importance and necessity of introducing web technologies in the field of education is mentioned in a number of normative documents. The Decree of the President of Ukraine «On Urgent Measures to Ensure the Functioning and Development of Education in Ukraine» of July 4, 2005 states that it is necessary to ensure effective use of information, including multimedia and electronic learning tools, create a network of information support in education. On December 7, 2005, the Cabinet of Ministers of Ukraine adopted a resolution approving the State Program «Information and Communication Technologies in Education and Science» for 2006-2010, which directly indicates the need to introduce information and communication technologies, including web technologies, in education.

Analysis of the main aspects of informatization of the educational process, which is based on the works of V. Bykov, E. Vinnychenko, M. Zhaldak, V. Zabolotny,

V. Klochko, M. Lapchyk, Y. Mashbits, V. Monakhov, N. Morse, S. Rakov, Yu. Ramsky, S. Semerikov, O. Spivakovsky, O. Spirin, Y. Trius, S. Yashanov and others, made it possible to determine the strategy of IT implementation in the learning process, according to which educational and cognitive activities could provide productive development of each pupil and student. Leading domestic and foreign scholars have devoted research to the psychological and pedagogical features of the organization of higher education, didactic foundations of development and introduction of innovative pedagogical technologies.

Analyzing these studies, it can be argued that a number of aspects require further study. In particular, it is emphasized that the change and improvement of the content of education and training is in different directions, the importance of which changes with the development of the process of informatization of society. In this regard, the tasks of reforming the system of information and mathematical training and advanced reform of the system of training specialists in informatics are becoming especially important.

**Aims**. To identify problems related to the reform of the system of information and mathematical training of future specialists in informatics, and on this basis to outline the overall strategy for the introduction of web technologies in the field of their training.

**Methods.** Theoretical methods: systematic analysis of scientific, psychological and pedagogical, methodological literature; generalization and systematization of theoretical information on the introduction of innovative changes in the higher education system of Ukraine.

**Results**. The introduction of modern web technologies in the field of education for its development requires large financial costs, so the spread of these technologies is somewhat slow. This explains the relatively small number of information resources devoted to education. In order to better understand the problem of implementing modern web technologies in the field of education, it is necessary to clearly present the existing obstacles to this process. This will determine the direction of concentration of efforts and the necessary conditions for the successful solution of the problem itself.

In our opinion the introduction of web technologies in higher education institutions is hampered by psychological, pedagogical and logistical factors. Among the psychological and pedagogical factors include the following.

1. Lack of a complete theoretical basis for building learning systems based on the use of web technologies.

2. Insufficient development of methodological and organizational aspects of the use of web technologies in the educational process, the use in their construction mainly empirical approach.

3. Weak psychological readiness of most teachers to use web technologies as a means of learning, due to a number of reasons, including the natural resistance of man to innovation, lack of computer skills and knowledge of its use in the educational process.

4. Lack of understanding and a certain level of knowledge among some educators about the use of web technologies on the Internet.

5. Insufficient motivation for the introduction of web technologies in pedagogical activities and their use in the educational process.

Among the material and technical factors include the following.

1. Unavailability (due to high cost and other reasons) of quality software.

2. High tariffs for communication services and, as a result, high tariffs for Internet users.

3. Insufficient computer equipment of most institutions.

4. Insufficient number of specialists for technical support of the web technology implementation process.

5. Lack of domestic providers a sufficient number of direct channels of access to global educational networks.

6. Lack of legal framework for the use of educational web space on the Internet.

To address these issues, it is necessary to determine the overall strategy for the introduction of web technologies in education. The main directions of this process include the following.

1. More widely implement web technologies in all types of educational institutions. This will contribute to the creation of information and educational space, development of software and pedagogical software and, as a consequence, improving the quality of knowledge of pupils and students and the implementation of one of the main tasks of education - the transition from industrial to information society.

2. To train teachers to use local and global networks.

3. To create open educational resources and fill the Ukrainian part of the educational web space of the Internet with them. A powerful impetus to this process could be provided by the creation of a center where information on the location of these resources could be accumulated.

4. Identify typical web technologies that should be used in the educational process and the feasibility of their use. Based on such data, predict possible ways of developing web technologies for certain categories of users.

5. Facilitate the creation of educational information search engines and web directories.

6. Stimulate the creation of public servers in the field of education, useful for teachers.

These are the main tasks for the introduction of web technologies in the field of education.

The introduction of web technology in the higher education system can be carried out in the following areas:

- support and functioning of the local network of faculties and the university as a whole;
- organization of the educational web portal or website, where all materials created by teachers and students can be accumulated;
- transferring library resources to electronic and providing access to them through the local network;
- involvement of all university teachers in the creation and use of open educational resources;

- formation of educational web space on the basis of web technologies.

Each of these areas requires the availability of highly qualified personnel in the education system, and especially teachers and lecturers who would ensure the study of computer science and mathematics at the appropriate level. It becomes clear that the processes of informatization and mass global communication of society create a new social order in the higher education system for the training of computer scientists who have fundamental knowledge in computer science and mathematics and are able to use modern web technologies in future careers.

The rapid development of information technology, programming paradigms, improvements in computer technology, increasing the flow of data and the need for its processing have prompted leading educators to reconsider approaches to teaching computer science and mathematics in general.

The future specialist in computer science must have a basic level of mathematical training, regardless of theoretical knowledge of computer science, have scientific methods, implement numerical methods in practice and more. Mathematical methods and formal considerations are part of most branches of computer science. Computer science depends on mathematics and its fundamental definitions, axioms, theorems and methods of proof. Mathematics provides tools for working on concepts related to computer science, real tools of analysis and verification, as well as a theoretical basis for understanding different types of computer science ideas. Functional programming and solving problems using a computer is based on mathematical theories and analysis of functions; knowledge of combinatorics and probability theory, graph theory is necessary for analysis of algorithms; verification of algorithms is based on formal logic and deduction. Thus, to understand the theoretical foundations of computer science, the curriculum of the future teacher of computer science should include a sufficient list of disciplines of the mathematical cycle.

Students must acquire certain knowledge, skills and abilities in mathematical analysis, geometry, linear algebra, statistics, numerical methods, number theory, probability theory and logic. Students should also be familiar with the techniques of discrete mathematics.

The use of modern web development environments in the classroom significantly increases the motivation of computer science students to study mathematics. Practical testing of such tools provides an opportunity to form a clear idea of the current process of design and development of software products. It is not enough for a modern computer specialist to have skills in the use of traditional technologies, but it is necessary to know and study the educational segment of the Internet, have the skills to implement digital technologies in the educational process and so on.

For example, when studying mathematical disciplines, it is advisable in the process of studying graphic data to give students the task to search for graphic images on the Internet or create your own image using a graphic editor. In the future, such tasks can be combined into a project on a specific topic in mathematical disciplines and completed by creating a page in the system of wiki-encyclopedia.

**Discussion**. Web technologies have become widespread in the field of education. Web technologies will be considered information technologies, the use of which allows

the processing of web resources hosted in the web space of computer networks (local or global). Web space should be understood as an information component of local or global networks, through which the use of web resources (text, graphics, audio, video resources), which are interconnected by hypertext links.

Today, web technologies are best implemented on the Internet, which covers more than 150 countries. According to research firm Netcraft [3], which studies the global Internet, as of January 1, 2009, there were more than 185 million sites on the Internet. As for Ukraine, the beginning of the use of web technologies can be considered 1992, when the official registration of the UA domain took place. As of February 2009, the total number of registered domains in the UA territorial domain was about 390197.

At the end of 2005, the term Web 2.0 (second-generation web technologies) appeared, which was proposed to be used for the whole set of progressive trends in the development of web technologies [4; 6]. The use of this term quickly became widespread in all areas of information relations, and derivatives of this term began to appear: Business 2.0, Education 2.0, News 2.0, Advertising 2.0, and so on. In many aspects of the introduction of web technologies, Ukraine lags far behind the world's leading countries. According to the latest data [2], 14.6% of the population in Ukraine use the Internet, on average in Europe – 48.5%, in the world – 23.5%. Regarding thematic content, there are about 60 thematic catalogs in the Ukrainian web space of the Internet.

Analysis of web resources of other categories of the thematic catalog gives grounds to claim that most of them are commercial, which means that the Internet in Ukraine is developing largely due to commercial structures that already operate under market economy laws and can finance those technologies. which have a positive effect on their development [5].

The use of web technologies in the process of professional training of future specialists in computer science allows to form information retrieval skills. Such activities aim at the student's conscious acquisition of knowledge in the process of solving professional problems, increases the effectiveness of training future professionals, as well as contributes to the formation of skills of independent work in the process of solving the problem. Methods of using these resources in the training of future computer scientists should be focused not so much on studying the use of specific web resources, but on forming an approach to their selection and use in professional activities to achieve pedagogically significant results [1].

**Conclusions**. The study of the use and implementation of norms and methods of teaching future bachelors in the process of teaching mathematics and computer science courses using web resources requires special study. It is necessary to create conditions in educational institutions of Ukraine for the formation of information and digital competencies of students of mathematics and information specialties, who in the future will use web technologies as a means to solve not only professional problems.

Mathematical training of future specialists in computer science with the use of web resources should be cross-cutting and carried out both in the process of studying mathematical disciplines and through the introduction of appropriate special courses and workshops. It is this training that allows the future specialist to develop the

appropriate skills and abilities. Systematic, purposeful use of web resources in the process of studying computer science disciplines allows students to deepen their understanding of educational material, increase learning motivation, provide creative, research direction, develop practical skills on specific material with a mandatory focus on professional tasks. to be a specialist in computer science.

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# PRESERVING NATIONAL IDENTITY OF UKRAINIAN HIGHER EDUCATION IN THE CONTEXT OF GLOBALIZATION

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***Abstract.*** *The article reveals the impact of globalization on changes in the field of higher education, which are characterized by creation of a unified European educational space, increasing the importance and awareness of the need for purposeful training of the national elite in the country's universities. It was found out that with the development of globalization educational services extended beyond the national borders, transnational and international educational programs are developing. Among the reasons for high growth rate of the global system, the article highlights: increasing the number of adults receiving additional education in one form or another, and rapid introduction of information technology in the educational process (distance learning courses, e-textbooks, curricula, e-learning systems, etc.). In the context of globalization, the task of strengthening internal national, civic ties, patriotic unity of the nation, the people gains more importance, because globalization is a tendency not only to the unity of the world, but also to intensifying - in a civilized framework - competition between nations. And only a consolidated nation will be able to realize its own national interest and effectively defend it in relations with other states. It is revealed that nation-building is impossible without national self-conscience and self-identification; higher education in Ukraine as an institution of human development is intended to ensure personal direction of human development on intellectual, spiritual and moral background; state support is not a decisive factor in the development of higher education, but is a guarantee of maintaining national identity and self-identification in the context of globalization.*

***Key words:*** *higher education, globalization, national self-identification, national self-identity, international cooperation, European integration, innovation.*

**JEL Classification: A22, I23**

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**Introduction.** The formation of a democratic independent state is a complex, multidimensional process that affects all aspects of its citizens' lives. Among them, the priority is the problem of education as the basis of state power. Without realization of the role played by higher education in the process Ukrainian state formation, its place in socio-cultural transformations, further progressive development of our society is impossible.

One of the main trends of our dynamically developing modern world is the search for the most effective educational systems, the efforts of countries and their political systems to interact, integrate in the field of educational system, strengthen international cooperation in this area. At the same time, Ukraine emphasizes the need to preserve the effective features of the national component.

Modern reforms in higher educational system, taking place on the background of Ukraine's joining European educational space, are aimed at improving its quality. Ukraine's integration into the world educational space requires constant improvement of its national higher educational system, search for effective ways to improve the

quality of educational services, real equal access of the citizens to quality higher education, opportunities and freedom of choice in higher education, modernization of higher education content and its organization in accordance with the world trends and labor market requirements, ensuring continuity of education and lifelong learning.

**Literature review.** The works of scientists outlining general pedagogical and methodological aspects of the development of higher education (T. Baibara, N. Bibik, V. Bondar, M. Vashulenko, P. Gusak, O. Dubaseniuk, N. Kichuk, A. Kucheryavy, S. Skvortsova, G. Tarasenko, L. Khomych, L. Khoruzha, etc ) are essential for the study of higher education in Ukraine.

Important is the study of comparative pedagogy, which characterizes modern educational systems of developed foreign countries (N. Abashkina, N. Bidyuk, I. Gushlevskaya, N. Dichek, N. Lavrichenko, O. Lokshina, L. Pukhovskaya, A. Sbrueva, etc.).

The purpose of the article is to reveal the features of preserving national self-identification of higher education in the context of globalization.

**Methods.** In the article, general scientific research methods, empirical (description) and theoretical (analysis, generalization, explanation, etc.) methods were used.

**Results.** These days scientists express the view that the most important characteristic of the modern world is "globalization" [1; 2; 6; 7], that, in its turn, causes changes in the field of higher education, which are characterized by the creation of a unified European educational space; increasing the importance and awareness of the need for purposeful training of the national elite in the country's universities.

Let’s point out that globalization is a complex and controversial phenomenon. On the one hand, it creates opportunities and benefits for social progress, on the other hand, they are not evenly distributed between nations and states, and between representatives of certain social groups. The main danger of globalization is seen in the fact that instead of unity in diversity and expanding educational opportunities, it is possible to obtain unification, uniformity and loss of original creative potential of national (regional) educational systems. This explains the ambiguous attitude to this process.

As soon as much of the world's population is deprived of the benefits of globalization, its course is highly controversial and therefore ambiguous. Globalization should not be regarded as a factor that creates a model of a harmonious world community, and a universal process of global integration, in which cultures and civilizations come together.

Globalization affects education in different ways:

- causes changes in the labor market (widening the gap between the incomes of skilled and unskilled workers, so the number of people wishing to obtain higher qualifications, university degrees and continue their lifelong studies is growing;

- requires additional resources from the educational system (skilled workers need quality education; at the same time, national governments face challenges in trying to allocate additional resources to the political sector because it is not favorable for expanding the role of the public sector);

- raises issues of decentralization and privatization of education;

- requires international measurements and evaluations of educational systems;
- accelerates the development of information technology, which allows you to create a global educational network;
- promotes global culture (certain social groups feel left out of the process of cultural globalization, they oppose it by joining the anti-globalization movement and trying to return to traditional local and national values. This creates a new conflict of values in the context of global economy) .

Accelerating the processes of globalization in the economy and politics advance new demands cconserning the structure and quality of education. During the last 10-15 years, globalization has significantly increased the impact on the transformation of national higher educational systems.

Scientists link the globalization of higher education with the fact that at the turn of the millennium the humanity entered a new type of civilization and acquired a new way of thinking and a variety of progress [1; 2; 6; 7].

Science as a field that produces new knowledge, and education as a field that humanizes this knowledge gain the highest priority in the XXI century. At the same time, we should avoid only declarative nature regarding priority of education, associated with many challenges of globalization, namely the intensification of competition between traditional universities and young educational providers.

The views of scientists [1; 2; 6; 7], which link globalization with the formation of educational inequality deserve attention. Unequal access to knowledge, information technology and languages of international communication is one of the main reasons of inequality in the field of education.

Progressing cultural globalization is challenging the entire higher educational system. In recent years, higher education is increasingly regarded as a product and its commercialization is reaching the level of the world market [5].

The emergence of educational providers is a particular threat to national higher educational systems. In economically less developed countries, this trend increases the "outflow of intellect" abroad. As a result, the flow of immigration of talented young people will increase.

The potential of educational providers is growing with globalization, which is objectively accelerated by the actions of UNESCO European Center of Higher Education , the Council of Europe, the European Commission and other international European organizations.

We can say that cultural globalization of higher education is an unbalanced, contradictory and complex phenomenon. Despite a great number of opinions conserning this complex phenomenon, it is obvious that globalization of higher education leads to a qualitatively different entity - a "cosmopolitan" university, built on the cultural values of the Western world. Therefore, not everyone will be able to take advantage of this process, except the countries of Euro-Atlantic civilization with a certain set of socio-cultural characteristics.

With the development of globalization, educational services have crossed national borders, transnational and international educational programs are developing. The indicator of the integration process is cooperation of educational organizations and

national educational systems in the development of common quality standards and units of measuring academic loading. The role of education in the modern world is also changing: it is becoming a long and continuous process, because during the whole life a person faces the problem of knowledge obsolescence, the need of their updating, broadening and mastering new professional areas.

Among the reasons for the high growth rate of the global system are the increase of adults receiving additional education in one form or another, and rapid introduction of information technology in the educational process (distance learning courses, curricula, e-textbooks, training programs, e-learning systems, etc.).

Ukraine, which seeks to integrate into the world and European space, cannot stand aside from the globalization processes that are taking place today and affect almost all countries. However, in our opinion, more attention should be paid to the process of internationalization of education.

Higher education in the age of globalization is a factor of social stability, economic well-being of the country, its competitiveness and national security. Therefore, it should be approached as a national, strategically important problem.

In the context of globalization, the task of strengthening internal national and civic ties, patriotic unity of the nation and the people gains more importance because globalization is a tendency not only to the unity of the world, but also to intensifing - in a civilized framework - competition between nations. And only a consolidated nation will be able to realize its own national interest and effectively defend it in relations with other states.

The present political and socio-economic situation in Ukraine made the country's citizens and educators think over preserving national self-identification of higher education in Ukraine in the context of current transformation. The experience of the leading countries that managed to preserve national features and historical heritage in their higher education system is being actively studied, and this experience shows that national self-identification should play a prominent role both in the citizens' conscience and in the activities of educational institutions.

Ukraine can base the educational process on its own national achievements, adapting and transforming them in accordance with present day challenges. In the current political and socio-economic situation, it is worth remembering certain historical facts and events, in particular the absence of age restrictions for students; encouraging professors for searching the truth and appropriate sources of knowledge, adapting the logic of thinking, which corresponds to the current provisions of the theory of noosphere and critical-innovative thinking.

A profound humanistic content of Ukrainian culture, its significance for the national identity of the Ukrainian people is analyzed by culturologists, educators, sociologists, philosophers as a holistic system that exposes the spiritual world of the people on the background of historical objectivity without artificial division them by residence, wealth, religion, etc.

It is noteworthy that the formation of a personality in the information society is taking place by means that have developed historically - culture, education, science. Culture is a spiritual and material foundation of the organized society, sustainable

human development, civilizational progress and is expressed through the external form of existence and internal content.

The updated legislation in the field of higher education of Ukraine (laws, bylaws, letters of instruction, etc.) is aimed not only at reforming the system in the context of European integration, but also at preserving national heritage and emphasizing responsibility for one's own actions.

In our opinion, one of the main tasks is to improve the educational space that would meet the present day needs and at the same time ensure the development of the educational sphere of the state, which would have its own advantages and achievements. This will be facilitated by the formation of a personality with a new creative innovative thinking, which could self-improve, realize himself\herself and advance constructive proposals with their further implementation in practical professional and social activities.

Since education and, accordingly, educational policy has been, is and will be a strategic area of development of the state and society, which in the long run determines and shapes the human factor, it is important to develop and improve the educational space through the formation of worldview and innovative thinking of the citizens.

The innovativeness of education should be manifested in the creation of a system of purposeful training of specialists that are patriotic, professional, spiritual and moral. Such specialists are competitive in the labor market in the context of European integration.

The University is the centre of forming a new type of a person with innovative thinking.

Thus, we affirm the legitimacy of the triad "higher education - research - innovation". We see innovation as creating new future. For its (new future) creation, strategic tasks include, in particular, ensuring the transition of the economy to an innovative model of development, accelerating the development of high-tech industries, the introduction of resource-saving technologies etc. It is the triad "higher education - government - production" that should ensure the implementation of these tasks.

Priority areas of scientific and technological development include the main areas of research that can lead to the creation of new technologies and industries that contribute to the development of the national economy and social sphere. Without University researches aimed at solving these issues, it is impossible to solve the outlined provisions.

In the age of the information society, the strategic role belongs to science, high technology, intellectual resources, and, accordingly, merging of science, education and culture, which are the means of human formation. Education, as a component of culture, in its change and modification is inseparable from the areas of perspective development of Ukrainian culture: issues of existence of the individual, nation and state, national traditions and their renewal in accordance with the requirements of time, cultural dialogue at the international and interstate levels. awareness of the proper place of the nation in the world historical process [3].

Culture is the manifestation of the level of historical progress achieved by mankind. Globalization, establishment of the information society, market relations and democratization require appropriate cultural support in the context of growing importance of intellect and a desire to give (acquire) education.

The civilizational challenges of the XXI century, which national educators should focus on are:

- unceasing globalization, which covers all spheres of society and not only enriches the humanity and makes it interdependent , but also intensifies competition between countries, peoples, individual citizens in the process of their interaction and geographical and economic mobility;
- variability that progresses in any field of activity and is based on an innovative type of development;
- democratization and humanization of modern societies along with strengthening the requirements for personal competence and human self-sufficiency;
- formation of a new civilizational phenomenon of network society through innovative development of ICT.

Higher education acquires a greater social dimension, as the mission of higher educational institutions includes such a component as the labour market, which provides for the interaction on the level of "employer – higher educational establishment", expands the list of socionomic professions, regulating the relationship "an individual - social institution". These professions involve graduates who possess legal, sociological, psychological competencies in general, organizational, managerial and conflictological competencies - at a high level of implementation in practice, formed by project-research thinking.

Ukraine is characterized by the tendency of not only of curtailing the production of its own cognitive product, but also of reducing it to the local level. Significant for understanding the position ( of possible leadership) of the country in the globalized world is the level of human capital development as an integration indicator that determines the country's internal capacity to produce knowledge and its use in industrial and social development.

**Discussion**. Thus, a new relationship is formed between countries that produce knowledge and countries that have shortage of knowledge what is seen as cultural confrontation of globalism, as it involves culture of thinking, planning (predicting), modeling, production and application of creative cognitive product.

Educational environment of the university is a system of forming a new type of a personality with the freedom to choose worldviews, positions, ideals; it is personality-oriented, as it develops the potential of students and promotes the development of their professional qualities; it is adapted to social conditions, challenges of society; it is dynamic and determines the development of the individual; it is multicultural and tolerant of the achievements of the past.

The tasks of the state in the field of higher education are to optimize the network of higher educational institutions and streamline their separate structural units, improve the quality of educational services, to create the most professional and independent licensing and accreditation system that would act in the interests of consumers of

educational services, full support of scientific activity. Also unresolved are the problems of expanding the rights of higher education institutions to allocate financial resources, diversifying of funding sources, transparency and accessibility for public control of all their academic and financial activities.

**Conclusions.** Thus, nation-forming is impossible without national self-conscience and self-identification; higher education in Ukraine as an institution of human development is intendeed to ensure the personal trajectory of human development on the intellectual, spiritual and moral background; state support is not a decisive factor in the development of higher education, but it is a guarantee of maintaining national identity and self-identification in the context of globalization.

We see the prospects for further research in the identification of the determinants in the development of higher education that contribute to the preservation of national identity and self-identification.

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# CURRENT CHALLENGES OF HIGHER EDUCATION IN UKRAINE

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***Abstract.*** *A number of challenges that the system of higher tourism education in Ukraine is facing at this stage of its development is considered in the article. The objective of this article is to analyse some current challenges of higher tourism education in Ukraine. The methods used include the following, namely the study and generalization of literature and sources on the topic, the method of extrapolation, comparison, analysis of practical issues of the educational process, reflection on the author's own pedagogical experience. Problems of digitalization of educational processes, organization of distance learning, changes in teaching methods and criteria for monitoring students' knowledge, outflow of Ukrainian applicants to foreign vocational educational establishments have been formed in recent decades and exacerbated in the current conditions of global pandemic and full-scale war in Ukraine. The conclusions of the publications suggest possible ways to solve these problems, including further improvement of teaching methods and criteria for monitoring students' knowledge in distance learning, improving the quality of Ukrainian scientific school in tourism, using a double degree system, etc.*

***Keywords:*** *digitalization of higher education; distance learning; advantages; disadvantages; differentiated approach; double degree system.*

**JEL Classification: A22, I23**

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**Introduction.** In recent decades, the world has undergone through significant changes that have affected not only the production sphere, but also the social one. They have radically changed the systems of relations that have developed in the society during a long period of time. The use of modern technologies, globalization and integration that are taking place in various spheres of human life, the commercialization of humanitarian institutions, combined with the deepening of differences in approaches to common social issues have created a number of problems in higher education, including its tourism direction. Today, the world is going through difficult times, i.e., the coronavirus pandemic, political and military conflicts, financial problems for large and small business. All the above could not but affect the main social institutions such as medicine, culture, education, deepening the existing problems.

**Literature Review.** The problems of higher tourism education in Ukraine at the present stage were highlighted in the works of many domestic scientists, in particular, those of Bykova V., Andrusenko N., Gerasimenko V., Vyshnevskaya G., Lukyanova L., Kucherenko N., Prybylova V., Shtykhno N. etc. But the dramatic changes in the country's educational environment, such as the coronavirus pandemic and, in particular, the Russian Federation's military aggression against Ukraine, have exacerbated the existing problems and necessitated their more detailed consideration.

**Aims.** The objective of this article is to analyse some current challenges of higher tourism education in Ukraine.

**Methods.** The methods used include the following, namely the study and generalization of literature and sources on the topic, the method of extrapolation, comparison, analysis of practical issues of the educational process, reflection on the author's own pedagogical experience.

**Discussion.** One of such problems is the digitalization of educational processes and the transition to distance (on-line) learning caused by the epidemic situation. Opinions of the scientific community in Ukraine are divided on this issue.

Most researchers consider distance learning a promising direction in the development of modern education, highlighting a number of its advantages, including possibilities for students to maintain regular contact with the teacher at any time and in any place [1, p. 7]; a significant increase in the subjects of the educational process; use of materials from electronic libraries; increase of the scale of independent work of students, listeners, etc .; organization of a single information educational environment; a significant reduction of costs for the organization of the educational process (no costs for rent of premises, cost savings in staff payroll, etc.) [2]. This form of education largely ensures the internationalization of education not only the contentwise but also in terms of organizational forms and methods of teaching [3, p. 81]. The distance education opens access to non-traditional sources of information for students, increases the efficiency of independent work, provides new opportunities for creative activities, and enables teachers to implement fundamentally new forms and methods of teaching [4].

At the same time, a number of disadvantages about the organization of this form of education are emphasized. They include the lack of direct communication between the teacher and students, which reduces the effectiveness of knowledge transfer; insufficient contact between the teacher and the distance student due to the extraordinary professional workload of domestic teachers; low bandwidth of electronic networks, which, first of all, affects distance students of small urban settlements of Ukraine [5] and, finally, a complicated identification of students and a difficult-to-determine extent of students' independence to which the students fulfil their home and control tasks [6, p. 82].

**Results.** The digitalization of various aspects of the world society will continue to intensify, and we must be ready for that. Today in Ukraine it is possible to organize on-line training on different platforms like ZOOM, Teams, Classroom, Google meet and others. Internet coverage is quite wide. The advantages of on-line learning are indisputable. They include a possibility to get connected and participate in classes almost regardless of the distance and location of the student; a possibility for the teacher to use the Internet materials and his/her own computer archive at any time; absence of needs for training premises or additional technical facilities, etc. However, there are also shortcomings about the on-line learning. The most significant ones are the lack of or limited interactive teacher-student communication, as well as a low feasibility to control students' attention during lectures. Therefore, even in real conditions of quarantine and military restrictions, higher education institutions often use a blended form of the educational process, i.e., lectures are most often provided on-line, while seminars and workshops are conducted in the classroom.

Such a system of organization of classes proves correct. However, in our opinion, as it is up to the teacher to decide how to conduct classes based on the characteristics of the subject/course. For example, when it comes to the course "Excursion Studies" ("Organization of excursion activities") it is recommended to conduct practical activities related to excursion materials on-line, while lectures are increasingly becoming interactive and require direct communication with the audience. Moreover, study tours and direct acquaintance with the materials during the route tour proved to be an effective form of such classes.

Some employees of higher educational establishments believe that students are less likely to attend lectures if they are conducted via distance learning, although this is not the case. Unfortunately, students often miss classes both on-line and off-line, as they are forced to earn money on their own and are not always able to combine work with studies. At present, some students are outside the city where the higher educational institution is located, and sometimes outside the country, being in forced emigration. This results in another serious problem, i.e., the lack of current control and the need to evaluate students' knowledge in the process of final control, which makes control provisional and turns learning into profanation.

In search of a solution to this problem, we had to focus on a differentiated approach to evaluating the student's knowledge. When it comes to bachelor's courses of specialty 242 "Tourism" "Organization of excursion activities", "Organization of tourist activity", "Tour operating" the students who completed the program in full and diligently accomplished their final project (i.e. they developed a selection of excursion materials, a travel agency project, tour projects), can claim an excellent grade; students who have not completed the program in full, but performed the task well can get a good grade; further on, depending on the extent to which the program has been completed as well as on the final result students can receive a satisfactory (60 - 69 points) or mediocre grade (50 - 59 points).

In addition, in the future it will be useful to review the organization of the educational process and remuneration forms for academic staff in terms of individual teaching of students.

However, the problems associated with the digitalisation of education have been considerably exacerbated by the Russian military invasion of Ukraine. The active phase of the war in Ukraine now requires almost complete transition to distance learning. Today, more than 10 million people in Ukraine have fled their homes, out of which almost 6.5 million are internally displaced persons and 3.5 million Ukrainians have emigrated abroad. The war hit the civilian population, causing great losses in the country's economic infrastructure and economy. This has caused great damage to Ukrainian tourism. According to the head of the State Agency for Tourism Development of Ukraine M. Oleskiv, the capacity of the Ukrainian tourist market in pre-war times was estimated in the amount of billions of dollars, and the main task of the agency has been and remains such up to now is to attract these funds to the Ukrainian economy and help it work more efficiently. Unfortunately, the hospitality industry in Ukraine cannot now do what it has always done best, i.e., to receive and serve tourists. Now hospitality establishments are doing what they have to do. In other

words, they are feeding the Ukrainian army in "hot" areas and accepting refugees in the western part of the country [7].

On the one hand, in this situation higher education in Ukraine should be result-oriented, training professionals that are to reignite the Ukrainian economy and social sphere and develop them further. At the same time the education sector is experiencing additional difficulties related to the problems of accessing cyberspace. This applies both to students and teachers. The situation requires the maximising of teachers' means of communication with students, review of educational tasks with emphasis on creative tasks, improvement of methods of organizing independent work of students, revision of the evaluation system, search for alternative means of teacher-student communication.

Finally, a serious and urgent challenge for higher education in Ukraine today is the outflow of applicants abroad to universities of Poland, the Czech Republic, and other countries of Western Europe. This has objective reasons. Ukraine is actively integrating into the European community, adopting its standards. Studying abroad gives students an opportunity to obtain a European diploma, gain a foothold in Europe or get a more prestigious and well-paid job in Ukraine. There are other reasons: sometimes education abroad is cheaper or offered for free, there is mass advertising of foreign universities and so on. This problem is going to be exacerbated in the future, as the higher educational institutions of some countries that have accepted our refugees offer them education in their own educational institutions, in particular in higher professional education institutions. This enables Ukrainian youth to receive a quality European education.

At the same time, in our opinion, foreign educational system should not be thoughtlessly projected on the realities of Ukrainian society. This is especially true in the field of tourism education, as tourism is recognized as a dialogue between different civilizations, lifestyles, and cultures [8, p. 51]. The most effective way to solve this problem, of course, is to improve the quality and prestige of domestic education, of the Ukrainian scientific school. At the present stage, applicants can also be attracted by a possibility of receiving a double degree based on agreements with higher educational institutions of this profile abroad, foreign practices and internships. In the future, after the victory of Ukraine, which has already gained prestige in the world as the only stable nation capable of defending itself and taking a worthy place in the world community, such cooperation in higher education should be significantly simplified and strengthened.

Further digitalization of educational processes in the current circumstances in Ukraine leads to strengthening the role of distance learning and requires its further improvement by maximizing the means of communication between teachers and students, reviewing educational tasks with emphasis on creative tasks, improving methods of independent student work, review of the evaluation system, search for alternative means of communication teacher-student. The complexity of the current control of the evaluation of the students’ real knowledge in the process of final control in the context of distance learning can be removed by a differentiated approach to the criteria for evaluating this knowledge.

In our opinion, the problem of outflow of Ukrainian applicants to foreign institutions of higher education should be solved, in particular, by improving the quality and prestige of domestic education, of the Ukrainian scientific school. Applicants can also be involved in the organization of a double degree based on agreements with higher educational institutions of this profile abroad, foreign practices and internships, which should be intensified after the active phase of the war in Ukraine.

In this article we have identified only some of the problems of modern higher education in Ukraine, named possible ways to solve them. However, the problems of optimizing higher education in Ukraine in modern conditions are by no means limited to those listed above and require further research and solution.

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