



ACTIVITIES OF THE INSTITUTE OF VOCATIONAL EDUCATION AND TRAINING OF NAES OF UKRAINE IN THE CONDITIONS OF MODERN CHALLENGES

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Abstract.

The relevance of the study is conditioned by the need to promote the results of scientific, educational, information-analytical, advisory activities of the unified scientific institution in Ukraine that provides scientific and methodological support to domestic vocational and professional pre-higher education, which is in a state of reform.

Purpose: to characterize the current challenges and risks for the system of professional and vocational pre-higher education, highlight the main results of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine (hereinafter: institute of VET of NAES of Ukraine) in 2021 and prospects for its further development.

Methods: theoretical (analysis, synthesis, generalization); empirical (study of legislative and regulatory documents in the field of vocational and professional prehigher education, analysis of the results of structural units of the institute of VET of NAES of Ukraine and materials published on its official website and the website of the professional journal "Professional Pedagogy").

Results: The Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine is presented as a single scientific platform that provides scientific and methodological support for the modernization of modern vocational and professional prehigher education; conducts research on issues relevant to vocational and professional higher education; develops and implements pedagogical innovations in educational institutions (concepts, methodological systems, methods, technologies, etc.); carries out innovative educational activities of different levels; prepares highly qualified personnel for vocational, professional pre-higher and higher education in the specialties 011 Education. Pedagogy and 015 Vocational education (by specializations); is engaged in publishing, information-analytical and expert activities; actively develops international scientific relations, participates in international scientific and educational projects; systematically implements the principles of predictability, academic freedom, integrity, student-centeredness. The main challenges and risks in the activities of the scientific institution are described, its current tasks and ways to solve them are identified.

Conclusions: the main *challenges* to the system of vocational education are described (strengthening of world integration processes, rapid development of digitalization, nationalization, greening, internationalization of professional training of future specialists in developed countries); *the risks* caused by them are analyzed

(centralized and bureaucratized management system in the field of scientific and technical activities; insufficient funding for socio-humanitarian research; low wages of research and teaching staff; reduced prestige of vocational education; underdevelopment of dual education). Based on the analysis of the institute of VET of NAES of Ukraine in 2021 *promising areas* for further development of scientific institutions are identified (basic and applied research, strengthening the principles of academic integrity; improving educational programs for Masters and Doctors of Philosophy; introduction of modular programs of professional development of pedagogical workers of institutions of vocational and professional pre-higher education); development of corporate culture of the institute and its international activities); *the main tasks* of the scientific institution are outlined (ensuring the quality of vocational and professional higher education; promoting the development of public-private partnership; improving the system of training teachers in the field of vocational education and training, etc.).

Keywords: *Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine, vocational education, scientific, educational, experimental, publishing, international, innovative educational activities.*

Introduction. In today's conditions, there is the importance of scientific and methodological support for the development of domestic vocational and professional prehigher education in accordance with modern challenges and trends (Radkevych et al., 2021), which is carried out in Ukraine by the Institute of Vocational Education and Training of NAES of Ukraine (hereinafter the Institute). The scientific institution is the legal successor of the Institute of Vocational Education and Training of the Academy of Educational Sciences of Ukraine, which was established on March 27, 2006 and renamed on January 31, 2022 (Radkevych, ed., 2018a; 2018b; 2018c; 2018d; 2018e). According to the development strategy (Development Strategy of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine for 2020-2025, 2020, p.8) the mission of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine is defined by the slogan "From research to best educational practices". In view of this, the main direction of its activity is to conduct basic and applied research for the needs of the individual, economy, society (Radkevych 2019b; Radkevych, Yershova & Nychkalo, 2021a; 2021b). The vision of the Institute is determined by a harmonious combination of scientific activity, educational process and scientific and methodological support of training of innovative specialists – individuals, citizens, professionals. The basic values of the Institute are academic culture, openness, humanism, democracy virtue and freedom, innovation, leadership, human-centeredness, partnership, predictability, personal development, etc. (Development Strategy of the Institute 2020, 2020, p.8; Bazyl, 2019b; Radkevych, 2021).

Sources. Normative-legal, reference, information-analytical, reporting products of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine, its official website, the site of the professional journal "Professional Pedagogy", scientific publications (on reforming the education system in Ukraine) are analyzed in order to highlight the results of the scientific institution in 2021.

Purpose: to characterize the current challenges and risks for the system of professional and vocational pre-higher education, to highlight the main results of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine in 2021 and prospects for its further development.

Methods: theoretical (analysis, synthesis, generalization); empirical (study of legislative and regulatory documents in the field of professional and vocational prehigher education, analysis of the results of structural units of the institute of VET of NAES of Ukraine and materials published on its official website and the website of the professional journal "Professional Pedagogy").

Results and discussion. The basis of the Institute's activity is practical cooperation with institutions of professional (vocational and technical) education (hereinafter (VET)) and professional prehigher education; scientific and methodological relations with educational (scientific) and methodological centers (offices); cooperation with employers interested in modernizing the domestic education system; communication with state and local authorities and public associations; development of international scientific relations (Yershova & Bazyl, 2020; Kremen, 2021; Luhovyi, Reheilo & Hudym, 2021).

Close cooperation of the Institute with various groups of stakeholders increases the level of influence of science on the educational policy of the state and the quality of professional training of future professionals; improves information-analytical, expert, consultative and advisory activities of scientists; contributes to the popularization of scientific achievements of scientists; helps to disseminate advanced scientific and pedagogical experience; develops innovative educational activities of educational institutions; contributes to improving the quality of training of pedagogical and scientific-pedagogical staff for the system of professional, professional prehigher and higher education; provides new opportunities for professional development of scientific and scientific-pedagogical workers) (Bazyl, 2019a; 2019c; 2020a; 2020b).

During 2006-2021, 32 scientific studies (26 fundamental and 6 applied) were conducted on issues relevant to vocational and professional pre-higher education: designing the content and creating standards of vocational education based on the competence approach; development of marketing management technologies; development of energy-efficient, health-preserving, career, entrepreneurial, self-educational competencies of future skilled workers and pedagogical workers; study of vocational education and training systems in the countries of the European Union; introduction of distance and dual forms of vocational education; project management development; creation of electronic textbooks and SMART-complexes of academic disciplines; preparation of future qualified personnel for entrepreneurial activity in the conditions of small business development; development of methodical bases of application of digital technologies in preparation of future skilled workers; development of project management in vocational education institutions in domestic and foreign practice; development of professional competence of masters of industrial training in establishments of vocational education; introduction of the dual form of training in professional training of future skilled workers of construction, machine-building branches, sphere of service and public catering; assessing the quality of training in institutions of vocational pre-higher education, etc.). (Radkevych, 2021).

Currently, the Institute has six research laboratories (foreign systems of vocational education and training; professional career; distance vocational training; vocational training technologies; scientific and methodological support of training in colleges and technical schools; e-learning resources). Within the framework of the performed scientific research carried out by the Institute, 30 concepts and models,

50 methods and technologies, dozens of other scientific developments were developed, tested and implemented in vocational education institutions (Pedagogical Innovations for Educational Practice, 2022); 1943 types of scientific products were prepared, 145 – production and practical, 84 – educational, 73 – reference (Planned products on research topics of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine, 2022). More than 2,000 resources have been downloaded to the e-library of the National Academy of Educational Sciences of Ukraine and more than 307,428 downloads have been recorded. In Google Scholar, the Hirsch Institute's index rose to 48 and “the 10-index” to 290.

The main scientific achievements of the Institute: *concepts* (content libraries of electronic textbooks for vocational education in Ukraine; vocational guidance of young people in working professions; formation of students' values of health; development of young people's ideas of professional success; vocational training of the unemployed in the workplace; modular professional training of skilled workers in production; development of information and analytical competence of pedagogical workers; project and distance professional training; designing the information and educational environment of vocational education institutions and SMART-complexes of academic disciplines; managing the development of vocational education in a market economy; activities of professional career centers; standardization of professional training of professional junior Bachelors; assessment of the quality of training of specialists in institutions of vocational pre-higher education); *models* (marketing management of vocational education institutions; development of information and analytical competence of heads of vocational education institutions; networking of vocational education institutions with social partners; online counseling of students on professional career development); *methods and technologies* (training of teachers for the introduction of personal developmental pedagogical technologies; application of distance learning; standardization of professional training of future professional Bachelors; creation of a career counseling system; formation of educational content on a competency basis; development of project technologies; development of professional, energy saving, environmental, information-analytical, self-educational, project, digital, career and entrepreneurial competencies of teachers and future skilled workers, development of electronic textbooks, professional and educational standards, de-

sign of distance courses, measurement of educational outcomes, organization of distance and dual learning; managing the competitiveness of educational institutions; development of safety culture of professional activity of enterprise personnel); *professional standards* ("Methodist of vocational education", "Teacher of vocational training", "Master of industrial training"); *content library*, which includes 35 electronic textbooks for training future professionals in various fields; *a repository* containing more than 300 electronic training resources for the training of future skilled workers.

The research topics of the Institute are advanced and are a timely response to the urgent challenges of today, in particular to improve the quality of professional (vocational), professional prehigher education and their compliance with the requirements of the modern labor market. This is clearly illustrated by the results of research conducted at the Institute in 2019 – 2021. Thus, received and implemented in educational institutions pedagogical innovations on the development of entrepreneurial competence of future professionals helped increase their interest in starting and successful business doing; improving the activities of career centers, business centers, business incubators, business accelerators, business simulator websites; increasing the level of digital culture, creativity, stress, competitiveness of future professionals and their readiness for self-employment in small business development. Implementation of the applied research "Development of project management in institutions of vocational (professional-technical) education in domestic and foreign practice" allowed the scientists to develop, publish and test current pedagogical innovations designed to promote the competitiveness of the VET institution in the market of educational services of the region/city; modernization of mechanisms of cooperation of educational institutions with social partners; improving the diversification of funding sources for educational institutions; improving the quality of the educational process. The results of the implementation of applied research "Methodological foundations of professional competence of masters of industrial training of vocational education institutions" were aimed at: improvement of the value attitude of masters of industrial training to pedagogical activity; increasing the quality of special knowledge of masters of industrial training related to pedagogical, methodological and professional activities; improving the ability of masters of industrial training to successfully implement job competencies in the process of their professional activities; increasing the activity of masters of industrial training, awareness

of their own actions, personal and professionally important qualities, professional self-esteem, self-reflection and professional "I-concept". Research of "Methodical bases of introduction of elements of the dual form of training in professional training of future skilled workers of construction, machine-building branches, sphere of service and public catering" will develop the dual form of education, increasing the level of professional competencies of applicants of VET institutions, necessary for professional activities and their competitiveness in the labor market; reducing the adaptation of workers in the first workplace; increase in the number of social partners in VET institutions (executive authorities, employers' associations, trade unions, enterprises of various forms of ownership and subordination, employment service institutions, etc.); growth of investments in the system of VET.

The Institute continues to develop methodological principles for assessing the quality of training in vocational prehigher education institutions (2020-2022), which involves improving the objectivity of assessing the quality of training in colleges and technical schools, increasing the motivation of applicants for professional prehigher education and improving their training. Methodical bases of application of digital technologies in preparation of future skilled workers (2021-2023) are studied, thanks to what it was already possible to substantiate advantages of use of digital technologies in educational process of VET establishments, to classify digital technologies applied in professional training of future skilled workers, to improve the methods of choosing digital technologies for the training of future skilled workers, to develop criteria, indicators and levels of competence of teachers to use digital technologies in the training of applicants of VET.

An important activity of the institute of VET of NAES of Ukraine is *publishing*, which ensures the publication of pedagogical innovations (scientific results) developed by scientists through the preparation and publication of planned and additional final results. The institute has done systematic work to improve the quality of publishing. All unpublished works prepared in previous years and stored in the library of the institute on the rights of manuscripts were digitized and published on the website of the scientific institution and the electronic library of the NAES of Ukraine. In 2017, the branding of the publishing products of the institute of VET of NAES of Ukraine was carried out, the purpose of which is to create a unique name of the scientific institution and the image of intellectual products prepared by scientists and researchers (*Fig. 1*).

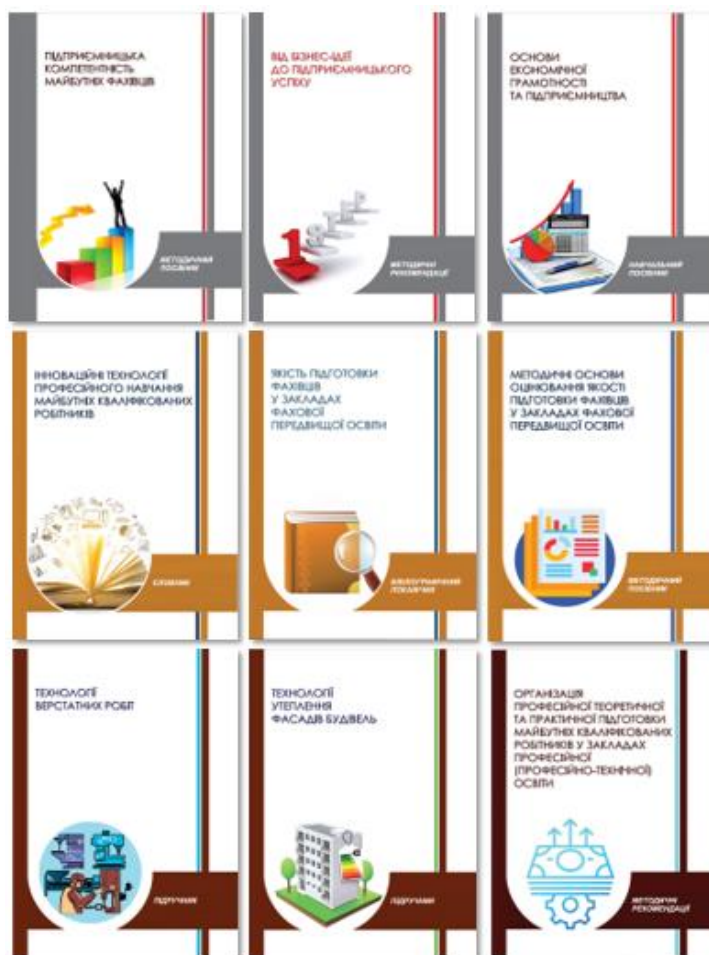


Fig.1. Branding of publishing products Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine

The Institute published collections of scientific works "Vocational Education: Problems and Prospects" (2013-2018), "Vocational Training in Work" (2006-2015) and electronic scientific publication "Theory and Methods of Vocational Education" (2011-2018). The Institute is also the founder of the professional scientometric journal (category "B") "Professional pedagogics" (until 2011 – "Scientific Bulletin of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine. Professional Pedagogy") and co-founder of the scientometric publication "Art education: content, technology, management" and the scientific-methodical journal "Professional Education" (which publishes materials on didactics and history of vocational school, education, vocational guidance and effective study of various subjects in vocational education institutions, comments and articles by leading vocational educators) (Fig. 2).

In 2021, the establishment of an electronic continuing publication "Innovative Vocational Education" was initiated in order to publish the

results of theoretical and practical work of scientists of the Institute and teachers-innovators, which are relevant for the modernization of domestic vocational education.

The important area of the institute of VET of NAES of Ukraine is *experimental work*, primarily focused on obtaining empirical data needed to determine the features, factors, patterns, mechanisms of the studied pedagogical phenomena, as well as activities to test the validity, productivity and feasibility of socially important pedagogical innovations. In addition, the organization and conduct of experimental activities aimed at improving the quality of research of the institute, implementation of its results in practice, uniting pedagogical teams of experimental educational institutions, increasing the scientific and methodological level of teachers participating in experimental activities, increasing the credibility of teachers and strengthening the image of experimental educational institutions, theoretical and practical assistance in the process of reforming the domestic system of professional and vocational prehigher education.



Fig. 2. Periodicals of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine

The subjects of experimental activity are the following: the Institute (endowed with the appropriate powers to open, implement research and report on the use of budget funds received for this purpose; six laboratories (that provide development of the program of experimental activity, organization of collection of empirical data, experimental verification of the developed pedagogical innovations and implementation of the received results; scientific and organizational department that provides information and communication support of experimental activities; researchers, as direct developers and executors of the tasks provided by the research program at

each stage of experimental work according to the individual work plan. *Objects* of experimental activity are public authorities and local governments, educational institutions, institutions, enterprises, organizations on the basis of which experiments are conducted. Thus, all laboratories and centers of the Institute, as well as teachers and heads of almost 100 educational institutions from all regions of Ukraine take part in innovative educational activities of different levels (all-Ukrainian, regional, subordinate institution of NAES of Ukraine) (Fig.3).



Fig. 3. Innovative educational activities of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine (2006-2021)

Innovative educational activities were carried out in *two priority directions* (topics) of research: *direction 24. "Theoretical and methodological principles of vocational training", direction 8. Vocational (professional-technical) education. Professional pre-higher education, the problem of research "Professional and personal development of future specialists" (six experiments at the national level, two – regional, four – subordinate to the NAES of Ukraine); direction 3. Quality of education. Information educational environment. Methods and ways of assessing the quality of education. The experiments were divided by levels (at the national, regional and subordinate levels of institutions of the NAES of Ukraine).*

A total of 64 experiments were conducted under the scientific guidance of scientists of the Institute, of which 23 were all-Ukrainian.

The results of innovative educational activities at the national level were pedagogical innovations important for vocational education and the domestic economy: the concept of creating and operating a career center, models (marketing management of educational institutions, interaction of vocational schools with social partners using strategic management technologies); methods (creation of information and educational environment, development of electronic learning resources, technical support of distance learning, formation of youth readiness for project and entrepreneurial activities); working curriculum and educational program for retraining of workers in the new profession 8169 Master of installation and maintenance of renewable energy systems; training modules for the implementation of certified training of workers on partial professional qualifications, etc.

Research was of great pedagogical and social importance: organization of distance professional training of students and adults living in the temporarily occupied territory of Ukraine and in the settlements of the line of contact (head – Doctor of Pedagogical Sciences, Prof. M.A. Prigodiy); introduction of project training (Doctor of Pedagogical Sciences, Prof., G.M. Romanova); creation and functioning of the Center for Professional Career (Candidate of Pedagogical Sciences, Candidate of Pedagogical Sciences, D.O. Zakatnov); development of career competence (Doctor of Pedagogical Sciences, Prof., V.F. Orlov); professional training of skilled workers in the field of maintenance of renewable solar and thermal energy systems (Doctor of Pedagogical Sciences, Professor, Academician V.O. Radkevych); preparation of young people for entrepreneurial activity (Doctor of Pedagogical Sciences, Associate Professor, L.M. Yershova); development of

public-private partnership in the field of vocational education with the use of strategic management technologies (Doctor of Pedagogical Sciences, Senior Research Fellow, Corresponding Member O.V. Boro-dienko); organization of professional training of future skilled workers in the dual form of education (Doctor of Pedagogical Sciences, Assoc. Prof., N.V. Kulalaeva); improvement of professional training of cooks on the basis of the competence approach (Candidate of Pedagogical Sciences, Senior Research Fellow, S.G. Kravets) and many others.

In the process of implementing innovative educational activities, the Institute's system links have been formed with many vocational education institutions, in particular: state educational institution "Odessa Higher Vocational School of Trade and Food Technology", Khmelnytsky vocational schools 11 and 25, state educational institution "Khmelnytsky Center for Vocational Education and Services", state vocational educational institution "Romney vocational school" Sumy region, state educational institution "Vinnytsia Center for Vocational Education of the Processing Industry", state vocational educational institution "Dnipro Center for Vocational Education", state educational institution "Melitopol Multidisciplinary Center for Vocational Education", Separate structural subdivision "Professional and Pedagogical Professional College of Hlukhiv National Pedagogical University named after Oleksandr Dovzhenko", Kolky Center of Vocational Education of Volyn Region, state educational institution "Dniprorudne Professional Lyceum" as well as educational (scientific) methodological centers of vocational education in Vinnytsia, Dnipropetrovsk, Zaporizhia, Kyiv, Sumy, Khmelnytsky, Kharkiv and other regions of Ukraine. Scientific and methodological cooperation allows not only to know the problems of modern vocational education institutions, but also to be a representative of their interests in the legislative process of the country. For many educators, experiments become an incentive for independent research and further development of scientific careers.

The results of experimental activities are published on the Institute's website (Scientific Guide to Experiments of the All-Ukrainian Level, 2022), summarized in the annual information and analytical materials "Vocational (professional-technical) and professional pre-higher education" (Radkevych & Artyushina, ed., 2017; Radkevych & Yershova, ed., 2019; 2021).

Scientists of the Institute take an active part in *scientific and expert activities*, which include scientific examination of draft legislation, regulations, educational innovations, programs, educational and methodological literature in the field of vocational

education and training. Researchers of the Institute submitted proposals for bills: "On Professional Pre-graduate Education", "On Adult Education", "On Vocational Education", "On Professional Qualifications", as well as to the "Regulations on Accreditation of Educational Programs for Training Higher Education Applicants", to the draft resolution of the Cabinet of Ministers of Ukraine "On Amendments to the Licensing Conditions for implementation of Educational Activities", to the "Code of Ethics of the NAES of Ukraine".

In the process of developing conceptual and normative documents in the field of education, the Institute's scientists provided proposals for the content of: National Strategy for Barrier-Free Space in Ukraine, Budget Declaration for 2022 – 2024, Reading Development Strategy for 2021 – 2025 "Reading as a life strategy", Concepts of implementation of state policy in the field of professional (vocational) education "Modern professional (vocational) education" for the period up to 2027, Concepts of the State target social program for the development of professional (vocational) education for 2022 – 2027, Concepts of digital transformation of education and science for the period up to 2026, the draft State Budget of Ukraine for 2022 – 2024 on the training of applicants for Master's degree in higher education and training, List of scientific specialties in science, developed in accordance with Article 42 of the Law of Ukraine "On scientific and scientific-technical activity", "Procedure for awarding the degree of Doctor of Philosophy and cancellation of the decision of the one-time specialized academic council of the higher education institution, scientific institution for awarding the degree of Doctor of Philosophy", Regulations on the procedure for financing new research and scientific and technical (experimental) developments carried out at the expense of the general fund of the state budget in the National Academy of Educational Sciences of Ukraine, professional standard for the profession "Head of General Secondary Education".

Only in 2021, the Institute's researchers submitted proposals for the content of 41 draft legislative and regulatory documents:

- Laws of Ukraine "On Amendments to Paragraph 3 of Section X "Transitional and Final Provisions", "On Complete General Secondary Education", "On Amendments to the Law of Ukraine "On Education", "On Adult Education", "On Amendments to Law of Ukraine "On Scientific and Scientific-Technical Activity" on expanding the functions

of the Supervisory Board for Science and Technology Development to the sphere of innovation ("On Support and Development of Innovation Activity");

- Resolutions of the Cabinet of Ministers of Ukraine "On approval of the Concept for the development of children's digital rights and approval of the action plan for its implementation", "On approval of the Procedure for development, implementation and revision of professional standards", "On approval of the State target program for research infrastructures in Ukraine for the period until 2026", "On amendments to some resolutions of the Cabinet of Ministers of Ukraine "on determining the procedure for exercising the right to academic mobility", "On amendments to resolutions of the Cabinet of Ministers of Ukraine of August 16, 1994 №560 and August 23, 1994 № 582 "on updating the system of state support for young scientists defined by the Law of Ukraine" On Scientific and Scientific-Technical Activities", "On Amendments to the Procedure for Competitive Selection and Financing by the National Research Fund of Research and Development Projects");

- orders of the Cabinet of Ministers of Ukraine ("On approval of the action plan to promote natural sciences and mathematics until 2025", "Some issues of implementation in 2021 – 2023 of the State Strategy for Regional Development for 2021 – 2027", "On approval of the action plan to implement the Concept communication in the field of gender equality for the period up to 2021");

- Orders of the Ministry of Education and Science of Ukraine "On approval of the Regulations on the specialized scientific council for awarding the degree of Doctor of Sciences", "On approval of the Procedure for passing the certification for the recognition of qualifications, learning outcomes and periods of study in higher education, obtained in the temporarily occupied territory of Ukraine after February 20, 2014", "On approval of the Procedure for state registration and accounting of research and development works and dissertations", Order of the Ministry of Economic Development and Trade of Ukraine "On approval of forms of submission of information on indicators of the approximate average cost of training by state order of one skilled worker, specialist, graduate student, doctoral student, student", updated proposals for the draft state order for 2022 and the draft forecast of the state budget for 2023 – 2024 for the training of scientific and scientific-pedagogical staff).

The institute has five *scientific schools* (Scientific Schools of Scientists of the Institute of Vocational Education and Training, 2022), namely: scientific

and methodological support for the development of vocational education and training (head – Doctor of Pedagogical Sciences, Professor, Academician V.O. Radkevych); introduction of information technologies in the educational process (Doctor of Technical Sciences, Professor, Academician A.M. Gurzhiy); personal and professional development of future specialists in the system of professional education (Doctor of Pedagogical Sciences, Prof. V.F. Orlov); study of theoretical and methodological bases of quality assurance of professional education (Doctor of Pedagogical Sciences, Prof. P.G. Luzan); current problems of professional training of teachers (Doctor of Pedagogical Sciences, Professor, M.A. Prigodiy).

In addition, heads of scientific schools, professors: M.V. Artyushina, O.V. Didenko, V.T. Lozovetska, L.M. Petrenko, L.P. Pukhovska, G.M. Romanova, V.I. Svistun, V.V. Yagupov worked at the institute, supervised scientific research of laboratories, experiments of all-Ukrainian level, training of Candidates and Doctors of Pedagogical sciences (specialty 13.00.04 Theory and Methods of Vocational Education); they are now active stakeholders in modernization of educational and professional training of applicants for higher education (specialties: 011 Educational, pedagogical sciences; 015 Professional education / Theory and methods of vocational education).

The achievements of scientific schools contribute to the realization of the strategic task of the institute – the training of highly qualified personnel for the systems of vocational and professional pre-higher education. Since 2007 the postgraduate and doctoral studies have been functioning at the Institute of Ukraine; since 2011 – specialized academic council D 26.458.01 (with the right to accept for consideration and defense of dissertations for the degree of Candidate and Doctor of Pedagogical Sciences in specialty: 13.00.04 – theory and methods of vocational education). Since 2016, the institute has received a license from the Ministry of Education and Science of Ukraine for the preparation of applicants for higher education degrees of Doctor of Philosophy and Doctor of Science in the field of knowledge 01 Education / Pedagogy, specialty 015 Vocational education (by specialization). In the same year, the Department of Theory and Methods of Vocational Education was established to ensure the implementation of the educational goals of the institute. Since 2018, there has been the training of applicants for the second (Master's) level of higher education in the field of knowledge 01 Education / Pedagogy, specialty 011 Educational, Pedagogical Sciences. Both

educational programs (for the training of masters and doctors of philosophy) are accredited.

Since 2020, one-time specialized scientific councils have certified candidates for the degree of Doctor of Philosophy. 48 Masters, 52 Candidates of Sciences, 13 Doctors of Philosophy, 20 Doctors of Sciences were prepared.

Since 2018, the Institute has been carrying out educational activities in the field of postgraduate education in the specialty 011 Educational, Pedagogical Sciences. During this time, 580 certificates of advanced training of scientific, scientific-pedagogical and pedagogical workers of the vocational education system were issued.

In 2018, a scientific and organizational department (Head – Candidate of Pedagogical Sciences, A.G. Kononenko) was established to provide effective scientific and information support for all areas of the Institute's activities. The main functions of the department are the opening, administration, security and development of the institute's website; information and analytical support of scientific research, publication of the results and monitoring the quality of their use; development and administration of sites of periodicals; organization of systematic interaction with organizations that provide digital object identifiers (for example, Crossref DOI display); establishing constant communication with domestic and foreign scientometric databases, e-catalogs, library e-archives in order to fully present the results of scientific activities of the institute in the domestic and world scientometric space; systematic monitoring of scientific ratings of the Institute and its researchers; promoting the development of information competence of young researchers; technical support for webinars, Internet conferences; ensuring the functioning of remote platforms, etc. The department provides presentation of the Institute's activities in the information scientific and educational space: researchers and teaching staff have bibliometric profiles in Google Scholar and the system "Bibliometrics of Ukrainian Science", work places are connected to international scientometric databases Scopus and WOS, access to full text resources Springer Link is opened.

Since 2009, the institute has had a scientific library (headed by V.O. Markova) as an important scientific and educational unit of the institute, which contributes to the professional growth of researchers and students. The library has also become a modern research and information center. The section "Library" has been created on the official website of the scientific institution, where all the final results of

scientific research are systematically presented; bases of Master's, Candidate's and Doctoral dissertations and abstracts on problems of theory and methods of professional education; basic sources of academic disciplines for mastering educational-professional and educational-scientific programs; electronic resources for vocational education institutions; conference proceedings, reference books, scientific publications of scientists of the Institute, presented in the databases Scopus and Web of Science, which are a source of potential reviewers and opponents for the certification of Doctors of Philosophy in the specialty 015 Vocational Education. The library takes an active part in providing extracurricular activities with students: provides information and bibliographic services of the educational process, provides psychological counseling, acquaints with current educational issues (academic integrity, academic mobility, academic freedom, publication, etc.).

The Academic Council of the Institute is of great importance for the development of academic freedom of scientists and research teams, realization of their right to autonomous decision-making, ensuring the quality of scientific research and training of highly qualified personnel for the system of professional, professional higher and prehigher system of Ukraine (Chairman – Doctor of Pedagogical Sciences, Academician V.O. Radkevych, Scientific Secretary – Doctor of Pedagogical Sciences, Assoc. Prof., L.O. Bazyl). More than 200 issues are annually considered at the meetings: definition of strategic directions of development institute; discussion of drafts of forecast and program documents (doctrines, concepts, strategies, etc.), other materials of strategic planning for the development of domestic pedagogical science, vocational and professional pre-higher education, draft laws, government decisions and programs; conducting independent scientific and scientific-technical examination of topics and results of scientific research, manuscripts of textbooks, manuals, other educational literature to obtain the stamps of the Ministry of Education and Science of Ukraine; implementation of innovative educational activities and implementation of their results; ensuring the managerial and strategic level of division of responsibilities of all structural units and officials of the Institute for the successful implementation of the goals of educational programs, adoption of strategies and policies for internal quality assurance of education.

In 2019, a council of young scientists (chaired by O.P. Radkevych and L.O. Shesterikova) was established at the institute to support talented young scientists. The council ensures the observance of their

rights and interests in the development of science-intensive ideas, innovations and knowledge exchange, acting on the principles of freedom of scientific creativity, scientific ethics, voluntariness, collegiality, publicity, openness, democracy, etc.

Thanks to the activities of the Council, masters and postgraduate students are partners in ensuring the quality of educational programs of the Institute. With the assistance of the Council (in order to study the attitude of students to the quality of the organization of educational activities), an anonymous survey of students of the first and second year of study is conducted. To form the individual educational trajectory of students, members of the Council participate in the formation of plans for extracurricular activities of students, compiling questionnaires for freshmen for Masters and Doctors of Philosophy, conduct surveys and ensure consideration of the results in the process of individual student curricula.

In order to ensure the accessibility of the educational and scientific program, the members of the Council together with the scientific and organizational department developed video business cards of educational components, which were published on the official website of the Institute (<http://surl.li/bdbqo>). To modernize the educational and scientific program, representatives of the Council participated in: conducting an annual analysis of the labor market and the market of educational services; survey of students and graduates on the quality of education and improvement of the educational process; reviewing curricula and programs of disciplines for their compliance with licensing and accreditation requirements; the work of the working group on quality control of teaching disciplines by all teachers of VET institution; annual analysis of student performance and discussion of the results of the analysis at meetings of the Academic Council. The conclusions and recommendations of the Council are published on the Institute's website in the section "Modernization of the educational and scientific program" (<http://surl.li/bdbtb>). In 2021, the Recommendations of the Council of Young Scientists on the combination of teaching and research of future Doctors of Philosophy in the context of internationalization of VET institution of NAES of Ukraine (<http://surl.li/bdbsz>) were published. For the development of students' academic integrity, members of the Council participate in filling the page of the Institute's website "Academic Integrity", promote the study, signing and compliance with the "Declaration of Academic Integrity" by Masters and postgraduate students "Declaration of Academic Integrity", the text of which is also posted on the website of VET

institute of NAES (<http://surl.li/tdsl>). In order to collect and take into account information on the career path and employment trajectory of graduates, the Council has started work on the development of the page "Information about applicants" (<http://surl.li/bdbtn>) to place an e-portfolio of applicants and graduates of educational and scientific programs.

The result of the council was the victory of young scientists of the VET institute of the NAES of Ukraine in the competitive selection of research on "New approaches to professional self-improvement of teachers of vocational (professional-technical) education in the intercourse training period" (2020). Supervisor – Doctor of Pedagogical Sci-

ences, O.B. Koshuk. In the process of scientific research, the program "Professional self-improvement of teachers of vocational education institutions", a series of trainings ("Time Management", "Professional self-improvement", "Pedagogical opportunities of the case method") and the website "Teacher-innovator" were prepared (innovation.ivet.edu.ua). In addition, within the framework of the competitive research by Doctor of Pedagogical Sciences, Senior Researcher O.P. Radkevych developed the "Teacher-innovator" website, which is active, strengthening the links of the research institution with successful teachers-practitioners across the country.

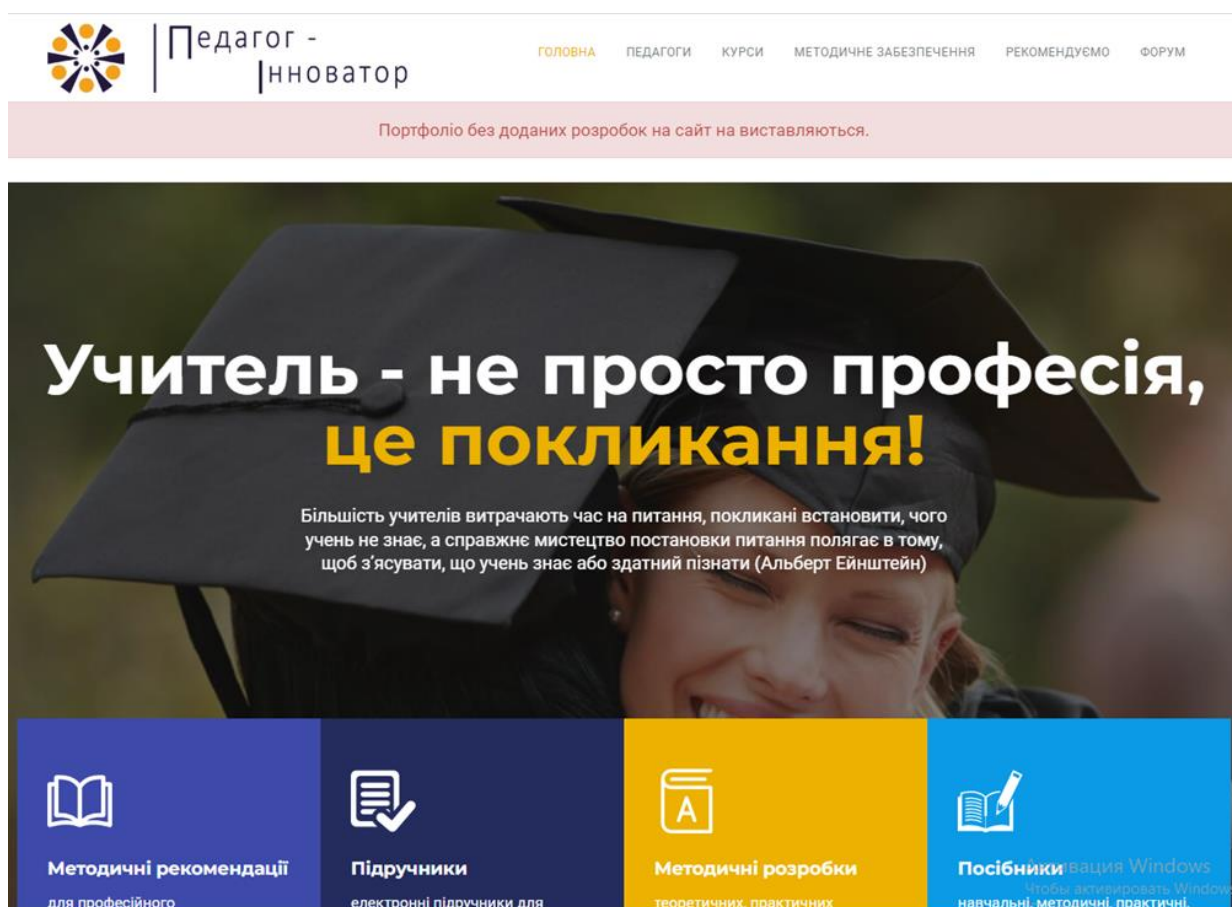


Fig. 4. Website "Teacher-innovator" (innovation.ivet.edu.ua)

From 2021, young scientists take an active part in the competition "Teacher of the Year" (<http://surl.li/tmhl>), in particular, are involved in a survey of students (<http://surl.li/topo>) to determine the ranking of teachers – participants of the competition. The Council has also launched a competition "Best Postgraduate Student of the Year" (<http://surl.li/bdbuk>), which is to be held among postgraduate students of the Institute. The purpose of the competition is to support talented students of the degree of Doctor of Philosophy, increase their interest in scientific activities, support in the development of postgraduate students' scientific

careers, increase the motivation of postgraduate students to scientific and research activities.

For many years there has been cooperation with international organizations, research institutions and educational institutions, namely: the German Society for Technical Cooperation (GTZ), the Federal Institute for Vocational Education of Germany (Bundesinstitut für Berufsbildung – BIBB), the Institute for Technology and Education Institute of Engineering and Education at the Technical University of Bremen (ITV, Federal Republic of Germany), European Education Foundation (EEF), University of Konstanz (Germany), University of Valencia

(Spain), Vienna University of Economics and Business (Austria), Institute for Advanced Training "TuraniProfi International Professional Academy" (Republic of Kazakhstan); Republican Institute of Vocational Education (Republic of Belarus); Higher School of Linguistics in Czestochowa (Poland); Academy named after Jan Dlugosz in Czestochowa (Poland). International research is constantly strengthened through the active participation of the Institute's staff in international projects, including: "Effective management of labor migration and its qualifications" in cooperation with the ILO Subregional Office for Eastern Europe and Central Asia 15 (2013); "Modernization of state standards and principles of education and training in accordance with the European Union's policy on lifelong learning" (2012-2014); EcoBRU (2013-2016); "Joker – my business, my identity" (Joker – moja firma, moje ja) (2015); "Development of labor potential in Ukraine" (2013-2014); "Professional orientation of learning foreign languages in vocational schools" (2015); "Improving practice-oriented training of teachers of vocational education and training" (2016-2018).

Currently, scientists of the Institute participate in ERASMUS + project "New governance mechanisms based on partnership and standardization of training of teachers in vocational education in Ukraine (PAGOSTE)" (2020-2023). Its goal is to improve the quality of training of teachers of VET institutions in Ukraine. In the process of solving the project tasks: the system of management of professional training of teachers in the EU countries is presented; scientifically sound tools are developed for analyzing the needs of target groups (teaching staff of higher education institutions that train teachers of vocational education, their students, teachers and heads of VET institutions for training teachers in vocational education; a national roadmap is developed for changes in the management of professional training of teachers of VET institutions in Ukraine; a Questionnaire for the perception of one's own skills and beliefs, self-assessment of strategic competencies by teachers of VET is developed and a corresponding survey is conducted; for each higher education institution that is a partner of the project, the concepts of effective management based on partnership have been developed; the concept and design of the online platform "Partner Space" 015 "for the development of cooperation between various stakeholders in the training of teachers for the VET system are developed; piloting of new management structures on the basis of partnership is carried out (Resource Center for

Vocational Education in Design Technologies of the State Institution "South Ukrainian National Pedagogical University named after K.D. Ushinsky"); Professional Advisory Committee of the specialty "Professional Education (Economics)" (EPP "Economic and Business Education") of Kyiv National Economic University named after Vadym Hetman; Committee for Support of Quality Assurance and Development of Training of Teachers of Vocational Education and Training of the National Transport University; Public Union "Association for the Development of Vocational and Continuing Education" of the Ukrainian Academy of Engineering and Pedagogy); training materials for staff training are developed; a program document is being prepared, which will contain recommendations for Ukrainian higher education institutions on the implementation of governance mechanisms based on partnership; changes are being developed to the professional standard "Teacher of Vocational Training" and educational standards for the training of teachers of the VET system, taking into account the management based on partnership; the creation of a network or association of higher education institutions is initiated for providing the training in the curriculum "Professional Education (by specialization)"; staff training on educational reforms and partnerships in teacher education is conducted and study visits of Ukrainian students to partner universities in the European Union are organized; it is planned to publish an anthology of professional training of teachers of VET in Ukraine.

In the process of international project activities, scientists prepared distance learning programs for teachers of vocational education institutions ("Culture of environmental safety of professional activities in the construction industry", "Energy efficient competence of teachers of vocational educational schools of construction profile", "Eco-oriented pedagogical technologies"); production and practical publications "Digest of courses to improve the environmental competence of teachers, pupils and students", "Eco-oriented technologies of vocational training", "Collection of environmental projects"; analytical reports on the results of comparative analysis of curricula for teachers of economics for the system of vocational education in higher education institutions of Ukraine and abroad; model of practice-oriented training of teachers of vocational education and training and methodological recommendations for its improvement; the results of a nationwide survey on the current state of management of vocational training for teachers; roadmap for changes in the management of teacher training for

the modern system of vocational education in Ukraine, etc. In 2021, a cooperation agreement was signed with the European Institute of Continuing Education (EIDV) in Slovakia, according to which the Institute's staff will undergo research, improve their skills in accordance with international programs and obtain European-style certificates.

The Institute is an active organizer, co-organizer and participant of numerous mass events, which address current issues of development of domestic systems of professional, professional prehigher and higher education. Nearly 100 of them are international (Video Conference Archive, 2021). Cyclical mass scientific and practical events have gained wide recognition among the scientific and pedagogical community: *international conferences*: "Professional training of staff – a European choice", "Professional education in the sustainable development of society", "Professional development of personality: problems and prospects", "Modern information technologies and innovative teaching methods in training: methodology, theory, experience, problems", "Technological and professional education: problems and prospects"; *all-Ukrainian scientific-practical conferences*: "Scientific and methodological support of vocational education and training" (report), "Theory and practice of distance learning in vocational education", "Professional pre-higher education: current challenges and prospects for development"; *web-conference* "Actual problems of professional development of masters of industrial training of vocational (professional-technical) education"; *all-Ukrainian scientific-practical seminars*: "Development of research competence of young scientists in the context of harmonization of Ph.D. training systems in the EU", "Modernization of educational programs: experience and challenges of today", "Training of vocational training teachers: problems and prospects". Since 2016, the Institute organizes and successfully conducts an all-Ukrainian competition for the best electronic educational resource "Planet-IT" in the following categories: electronic textbooks, manuals, workshops; distance learning courses; SMART complexes.

Particular attention was paid to the search for effective theories and practices for the development of business activity of educational entities; development of effective algorithms for pedagogical design in the innovative educational space of Ukraine and features of the use of digital technologies; substantiation of practical aspects of professional development and career growth of educators, teachers and scientists in a market economy, analysis of trends in

modern vocational and professional prehigher education, discussion of models and methods of training competitive skilled workers and VET teachers, etc. This contributed to the advanced development of vocational education institutions; substantiation of priority directions of interaction of science and educational practice, experience of introduction of project management in professional training of future skilled workers; establishing priority areas for professional development and career growth of subjects of educational institutions, the development of partnerships between institutions of higher, secondary and vocational education in Ukraine and abroad, etc.

In 2020-2021, a major challenge for the Institute's activity was the COVID-19 pandemic and the long-term quarantine caused by it, which hindered the implementation of experimental activities, in particular, training with teachers and students of educational institutions, testing and surveys. At the same time, to solve the quarantine-related organizational problems, mechanisms have been developed for the implementation of remote work and reporting of researchers, online accounting of working hours has been created, electronic document management and online communication with educational institutions, etc. have been improved.

To ensure the effectiveness of the educational component of the Institute during the quarantine period, the capacities of its own distance learning system (SDL) were used, namely: to conduct classes and consultations with Masters and Postgraduate students, present and discuss research results, provide the individual educational trajectory of students, the implementation of automated enrollment in elective courses, etc.

Researchers of the Institute also conducted a series of thematic all-Ukrainian scientific and practical webinars for teachers of vocational (professional and technical), professional prehigher and higher education to organize work during quarantine restrictions. Among them: "Improving the environmental competence of teachers of vocational education institutions through distance learning courses", March 23, 2020 (<https://youtu.be/A1L5OC1oBk0>); "Organization of distance learning in vocational education institutions", March 24, 2020 (<https://youtu.be/zijmC0nL5wU>); "Organizational and pedagogical conditions of distance vocational training", March 26, 2020 (<https://www.youtube.com/embed/wP4eW1e7joc>); "We are together: psychological support for students and teachers during quarantine", March 27, 2020 (<https://www.youtube.com/watch?v=cCfKfJbCvE>); "Self-educational activity of a teacher in the conditions

of distance learning", March 30, 2020 (<https://www.youtube.com/embed/wP4eW1e7joc>); "Methods for assessing the complexity of educational activities in institutions of professional higher education", March 31, 2020, (<https://youtu.be/Gcc2g8U28rM>); "Creation of SMART-complexes in the distance learning system", April 2, 2020 (<https://youtu.be/6afPQ2T4y8Y>); "Psychological prevention of panic during quarantine", April 7, 2020 (<https://youtu.be/SKF8YC9zVIQ>); "Main factors of selection and design of innovative learning technologies", April 8, 2020 (<https://youtu.be/Hdsi4KC-t7M>); "Application of mobile applications in distance learning", April 10, 2020 (https://youtu.be/_3GDMvibm9E); "Distance learning technologies in the training of skilled workers of the new formation", May 20, 2020 (<https://www.youtube.com/watch?v=VxcJDFFK83c>); "Development of the content of the program of distance learning courses for future masters of industrial training", May 6, 2020 (<https://youtu.be/sfyYHFmOnxM>); 1. "Methods of using" Google Classroom ", June 1, 2020 (<https://youtu.be/XDEoXgAQg5A>); "The practice of organizing independent work of students by distance means", June 4, 2020 (<https://youtu.be/9iiKeCIVslc>); "Application of CAD software in the training of future professionals", June 15, 2020 (<https://youtu.be/-f2q0PnZuBQ>) and many others, videos of which are presented on the website of the Institute.

Conclusions. Summarizing the results of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine, it is worth focusing on the most important areas of its

further development. The team of the scientific institution sees its main mission in further development of:

scientific activity (implementation of fundamental and applied research on topical issues of development of domestic vocational education and ensuring its quality; system integration of education, science and practice; creation of innovative educational technologies and educational products; promotion and commercialization of intellectual and technological projects);

public-private partnership in the field of vocational education (formation of state policy in the field of vocational education at all levels; development of professional standards, educational standards and educational programs; formation of the National Qualifications System and improvement of the National Qualifications Framework; introduction and dissemination of dual education; creation of modern educational environment, in particular in the centers of professional excellence; systematic monitoring of employment of graduates of vocational education institutions; formation of state and regional orders for training based on forecasting labor market needs in vocational qualifications; evaluation of learning outcomes of graduates of vocational and professional prehigher education institutions);

international activities (development of internship programs; involvement of foreign teachers and scientists in the implementation of educational programs and research; creation of international research teams; introduction of double degree programs; participation in international academic mobility programs; intensification of participation in international educational and research projects).

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ДІЯЛЬНІСТЬ ІНСТИТУТУ ПРОФЕСІЙНО-ТЕХНІЧНОЇ ОСВІТИ НАПН УКРАЇНИ В УМОВАХ СУЧАСНИХ ВИКЛИКІВ

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Реферат.

Актуальність зумовлена необхідністю популяризації результатів наукової, освітньої, інформаційно-аналітичної, консультативно-дорадчої діяльності єдиної в Україні наукової установи, що здійснює науково-методичний супровід вітчизняної професійної та фахової передвищої освіти, що перебувають у стані реформування.

Мета: охарактеризувати сучасні виклики й ризики для системи професійної та фахової передвищої освіти, висвітлити основні результати діяльності Інституту професійно-технічної освіти Національної академії педагогічних наук України (далі: ІПТО НАПН України) у 2021 р. та перспективи його подальшого розвитку.

Методи: теоретичні (аналіз, синтез, узагальнення); емпіричні (вивчення законодавчих та нормативно-правових документів у сфері професійної та фахової передвищої освіти, аналіз результатів діяльності структурних підрозділів ІПТО НАПН України та матеріалів, оприлюднених на його офіційному сайті та сайті фахового журналу «Професійна педагогіка»).

Результати: Інститут професійно-технічної освіти НАПН України представлено як єдину наукову платформу, що забезпечує науково-методичний супровід модернізації сучасної професійної та фахової передвищої освіти; проводить наукові дослідження з актуальних для професійної та фахової передвищої освіти проблем; розробляє і впроваджує в закладах освіти педагогічні інновації (концепції, методичні системи, методики, технології тощо); здійснює інноваційну освітню діяльність різних рівнів; готує висококваліфіковані кадри для професійної, фахової передвищої та вищої освіти за спеціальностями 011 Освіта. Педагогіка та 015 Професійна освіта (за спеціалізаціями); займається видавничою, інформаційно-аналітичною та експертною діяльністю; активно розвиває міжнародні наукові зв'язки, бере участь у міжнародних науково-освітніх проєктах; системно впроваджує принципи прогностичності, академічної свободи, доброчесності, студентоцентризму. Охарактеризовано основні виклики й ризики у діяльності наукової установи, виявлено її актуальні завдання та шляхи їх розв'язання.

Висновки: охарактеризовано основні *виклики* системі професійної освіти (посилення світових інтеграційних процесів, стрімкий розвиток цифровізації, націоналізації, екологізації, інтернаціоналізації професійної підготовки майбутніх фахівців у розвинених країнах світу); проаналізовано зумовлені ними *ризики* (централізовану й бюрократизовану систему управління у сфері наукової і науково-технічної діяльності; недостатні обсяги фінансування соціогуманітарних досліджень; низький рівень оплати праці науково-педагогічних працівників; зниження престижності професійної освіти; нерозвиненість дуальної освіти); на основі аналізу діяльності ПІТО НАПН України у 2021 р. визначено *перспективні напрями* подальшого розвитку наукової установи (виконання фундаментальних і прикладних досліджень, зміцнення принципів академічної доброчесності; удосконалення освітніх програм підготовки магістрів і докторів філософії; запровадження модульних програм підвищення кваліфікації педагогічних працівників закладів професійної та фахової передвищої освіти); розвиток корпоративної культури інституту та його міжнародної діяльності); окреслено *основні завдання* наукової установи (забезпечення якості професійної та фахової передвищої освіти; сприяння розвитку державно-приватного партнерства; удосконалення системи підготовки педагогічних працівників у сфері професійної освіти і навчання тощо).

Ключові слова: *Інститут професійно-технічної освіти НАПН України, професійна освіта, наукова, освітня, експериментальна, видавнича, міжнародна, інноваційна освітня діяльність.*

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