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INNOVATIVE SYSTEM OF PERSONNEL TRAINING AND MANAGEMENT IN VOCATIONAL EDUCATION INSTITUTIONS BASED ON DIGITAL TRANSFORMATION

ІННОВАЦІЙНА СИСТЕМА ПІДГОТОВКИ ТА УПРАВЛІННЯ ПЕРСОНАЛОМ В ЗАКЛАДАХ ПРОФЕСІЙНОЇ ОСВІТИ НА ЗАСАДАХ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ

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The article is devoted to the issues of the innovative system of training and personnel management in vocational education institutions. The author examines a number of issues related to the main problems of vocational education institutions which hinder the overall development and formation of an innovative system. It is emphasized that a modern requirement for quality education is to eliminate the imbalance between the knowledge and skills acquired in a vocational education institution and the requirements of the labor market. Ways of solving the problems of vocational education development are presented. It is noted that each vocational education institution should focus on meeting not only the external needs of employers, but also the internal needs of its employees, since the modernization of vocational education can only take place if there are trained and highly qualified teachers.

Keywords: vocational education, vocational education institutions, personnel, management, personnel management, innovation system, professional development, education management, high-quality development, education and training quality, digital transformation.

Стаття присвячена питанням інноваційної системи підготовки здобувачів та управління персоналом в закладах професійної освіти. Автором розглянута низка питань, що стосуються основних проблем закладів професійної освіти, які гальмують загальний розвиток і становлення інноваційної системи. Наголошено, що сучасною вимогою до якісної освіти є усунення дисбалансу між знаннями та навичками, отриманими у закладі професійної освіти і вимогами ринку праці. Наведено шляхи розв'язання проблем розвитку професійної освіти. Зазначено, що кожен заклад освіти повинен орієнтуватися на задоволення не тільки зовнішніх потреб роботодавців, а й внутрішніх потреб своїх співробітників, бо модернізація професійної освіти може відбуватися лише за умови наявності підготовлених висококваліфікованих викладачів, здатних професійно зростати. Акцентовано увагу на тому, що наслідком цифрової трансформації стає активний прояв нових тенденцій, а тому будь-які інновації в освіті вимагають розв'язання суперечності між прагненням педагогів зберегти усталений режим професійної діяльності та неможливістю відповідати реальності без руйнування стереотипів та виходу із зони комфорту задля освоєння нових професійних навичок. В статті розкриваються актуальні питання, зумовлені вимогами до професіоналізму працівників системи закладів професійної освіти, бо відсутні єдині науково обґрунтовані та емпірично апробовані стандарти й методи управління персоналом у цих закладах. Встановлено, що створення інноваційної системи підготовки кадрів та управління персоналом здатні модифікувати та мотивувати співробітників на якісний розвиток та інноваційну поведінку для підвищення ефективності діяльності закладу через якість освіти та навчання. Сформульовані рекомендації щодо вдосконалення політики управління персоналом в закладах професійної освіти. Зазначено, що реалізація зваженої політики управління персоналом в освітніх установах дасть змогу підвищити мотивацію та ефективність роботи персоналу, успішно утримувати та розвивати власні талановиті кадри, що загалом цілком узгоджується з основним стратегічним напрямом якісного управління освітою.

Ключові слова: професійна освіта, заклади професійної освіти, персонал, управління, управління персоналом, інноваційна система, професійний розвиток, управління освітою, якісний розвиток, якість освіти і навчання, цифрова трансформація.

Problem statement. In recent decades, we have seen changes in technologies, methods and means of teaching in educational institutions. With the introduction of innovations, without which, in fact, humanity does not see a modern workplace now. Thanks to computerization and the use of the Internet, new opportunities have emerged for the development of the individual, the learning process and self-study. That is why the management structure of modern educational institutions is trying to be innovative. Knowledge is the main asset of vocational education institutions. It is important to understand that creating a system of training and knowledge management is a complex process associated with the development and growth of human capital. It is the combination of the human capital system of vocational education institutions with the market of educational services and the process model that creates huge competitive advantages. The issue of matching educational products with employers' requirements and forming an optimal structure of vocational education is becoming increasingly relevant, which should lead to high-quality professional development and training of skilled workers in demand in the labor market.

The problem of personnel management in educational institutions is that the staff has its own characteristics. The point is not that the main staffs are teachers, whose life mainly consists of educational activities. What is important is that education puts forward new requirements for all subjects of these economic relations: educational institutions, teachers, parents, and the state as the main customer and guarantor of the constitutional right of citizens to education and its continuity. Therefore, this topic is multifaceted, important for everyone and deserves special attention, and therefore the research problem remains relevant, because it is due to the importance of using innovative technologies in the field of human resources management as a key resource that ensures the competitiveness of any organization, and therefore a vocational education institution is no exception. Without the involvement of human resources, it is impossible to implement any changes. Continuous improvement of human resources management makes it possible to increase the efficiency of the institution, and this determines the place and importance of the human resources management system in the organization's management system.

Analysis of recent research and publications. The problem of personnel training

and personnel management in vocational education institutions is poorly studied in the literature and tested in practice. This issue has been studied by scholars such as: Bondarchuk I. [1], Horoshkova L. [2], Datsii O. [3], Demianchuk M. [1], Dudko S. [4], Yelnykova H. [5], Kindratets O. [6], Kozynets A. [7], Kulishov V. [8], Miroshnychenko O. [3], Orlova A. [4], Prytomanov S. [3], Romanenko Ye. [3], Riabova Z. [9], Sardak S. [10], Semykina M. [4], Tretiak O. [10], Kharahirlo V. [2], Khlobystov I. [2], Shevchuk S. [8], Schokin R. [3].

Identification of previously unresolved parts of the overall problem. However, the presence of numerous scientific publications on research on personnel training and personnel management in vocational education institutions does not reduce the relevance of the issue.

Formulation of the objectives of the article. The purpose of the article is to substantiate the theoretical provisions and develop practical recommendations for effective tools for training and personnel management in vocational education institutions.

Presentation of the main material. Today, improving the quality of educational services provided by vocational education institutions is seen as a strategic goal within the framework of the State tasks and as a means of ensuring the life, development and prosperity of the institution. In order for an educational institution to be successful, it is necessary to manage it in a systematic and visible way. Management, along with other aspects of management, includes quality management.

A quality management system is a set of organizational structure, methods, processes and resources required to implement quality policy through planning, management, ensuring and improving the quality of education and training. In this regard, the competitive strategy of modern vocational education institutions is based on the focus on the quality of education and training through the performance of the institution itself and the quality of services provided. It should be emphasized that the main goal of modern vocational education is to train qualified specialists who are competitive in the labor market, competent, responsible, professionally mobile, fluent in their profession and focused on activities in related fields, able to work effectively at the level of world standards, ready for continuous professional development, and meet the needs of the individual in the course of education and training. The main factor in updating vocational education and training

is the requirements of the economy and social sphere, science, technology, labor market, as well as the projected needs for their qualitative development. The optimal system of vocational education and training should be based on the results of labor market forecasts for personnel of different qualifications, international trends and assessment of domestic vocational education and training institutions.

A distinctive feature of the educational standards of the new generation of vocational education should be, first of all, a pronounced competence-based character. At the same time, the requirements for the results of mastering the main professional educational programs are presented in the form of competencies, which are divided into general (universal) and professional (subject-specific). In addition, the main types of professional activities should be developed jointly with employers, taking into account the competencies required; the mandatory part of the vocational education program by cycle should be about 70%, and the variable part should be at least 30%, which will create conditions for deepening the quality of training, developing additional competencies, skills and knowledge necessary to ensure the competitiveness of the graduate in accordance with the needs of the regional labor market and opportunities for continuing education. The quality of a vocational education institution is considered through achievements in various areas of its activity: training of graduates; quality of education, level of research; development of curricula and manuals; availability of high-quality teaching staff; interaction with the labor market and participation of the institution in employment and continuing education of graduates, etc.

These provisions are fully reflected in professional standards, the development and implementation of which will provide the following benefits to employees, employers and the vocational education system as a whole: employees can determine their professional level and improve their professional knowledge, upgrade their skills, confirm their qualifications with a certificate, and get a basis for further professional development; employers receive criteria for evaluating staff to improve the professional level of employees; employees receive curricula, modules, methodological materials, and training programs.

At the current stage, mechanisms for active participation of potential employers in addressing educational policy issues and their influence on the vocational education system are still

being developed. For the further successful development of Ukraine's industry, it will be crucial for vocational education institutions to train highly qualified specialists. It is necessary to ensure that these institutions develop ahead of the curve so that their graduates can immediately start performing their job duties without additional training at the enterprise. This will be greatly facilitated by the development and adoption of professional standards for each specialty, on the basis of which new generation educational standards will be formed, which will facilitate the process of gradual updating of vocational training to meet the changing requirements of employers, as well as assessing the quality of the educational product in accordance with the needs of the labor market.

Observations have shown that heads of educational institutions always have ambitions and priorities in their relations with subordinate staff and students, acting on their strong convictions or a developed fundamental concept from which they do not intend to deviate, considering it original. For example, when hiring, they rely only on a set of documents about the applicant's education, considering it the best indicator of their desire to improve, or they consider it unnecessary to speak in front of subordinates, delegating this function to deputies as a "black" job, and have no desire to listen and convince. However, a trained managerial leader will be able to create a competitive professional educational institution that meets market demands and is able to participate in solving social and cultural issues.

The management of a vocational education institution consists of creating a flexible system of staff training, developing projects and supporting experiments with new pedagogical technologies, supporting creative youth, and their social protection. It is also necessary to effectively use the intellectual bank of teaching staff, material and financial resources, to form a personality in the educational process, and to introduce information technologies, as global trends of globalization and intellectualization, the rapid complexity of socio-economic systems, and the growing demands on labor resources are leading to an increase in labor requirements. In the current environment, the quality of training in vocational education institutions is of great value. The qualifications, level of education, and professional experience of an employee become the key to the competitiveness of individual enterprises, regions, and entire countries. Often, the current level of development of equipment

and technologies is significantly ahead of the level of training of most graduates of vocational education institutions. This necessitates the systematic development of the educational environment, taking into account the specifics of the transformation processes in economic sectors. Teachers play a crucial role in training future employees. Teachers and masters of industrial training are responsible for the implementation of the educational program in the training process, and participate in the formation and updating of the content of education. A modern teacher is not just a carrier of knowledge, but now he or she must also perform the function of organizing the activities of the student, which requires professional development and competencies that were not previously required.

According to the State Statistics Service, the Ukrainian labor market has a professional and qualification imbalance between supply and demand: 75% of school graduates receive higher education, while 25% receive vocational education. As a result, almost 44% of the unemployed have higher education, and in some large cities this figure reaches 90% [2]. It should be noted that the number of vocational (vocational-technical) education institutions decreased by 53.7% between 1990 and 2022, namely from 1246 institutions in 1990 to 670 institutions in 2022 (Figure 1). The reduction in vocational education institutions has led to a shortage of skilled workers. In 2000, the number of graduates of vocational (vocational-technical) education institutions was 266.8 thousand people, and in 2022 – 110.6 thousand people, i.e. there was a decrease in their number by 156.2 thousand people or 41.5%.

The level of quality educational services depends on the professional development of teaching staff, as it is one of the key factors in the successful operation of the vocational education system due to the ability of entities to maintain competitiveness. It is through the high qualification of the staff of an educational institution that a particular organization gains competitive advantages in the market of educational services. Obviously, in these conditions, the primary task of the administration of an educational institution should be to create a system of measures by the staff aimed at continuous self-improvement, development and retraining of teachers, their competence, professionalism and professional growth.

On the one hand, it is necessary to distribute the professional workload in such a way that

teachers have clear time windows in their schedules that can be used for professional retraining. On the other hand, the administrations of educational institutions should stimulate and financially encourage teachers' professional development and, at their level, organize the participation of staff in professional development activities. In other words, the primary task in personnel management in modern vocational education institutions should be to create conditions for enhancing the professional development of teaching staff and to stimulate the interest of staff in such improvement.

Among the promising areas of education development is the creation of an innovative educational environment, the necessary components of which is the improvement of teachers' professional skills and the dissemination of best practices. A modern teacher needs to be active and mobile, proactive, open to everything new, clearly aware of their professional goals and, most importantly, ready to implement innovations in their work. The management of vocational education institutions will be effective if a set of pedagogical conditions for such management is provided. This area of activity provides the greatest scope for building models of effective cooperation between various educational organizations, professionals and employers.

Today, the leaders of educational organizations are already using the achievements of the digital age to improve traditional personnel management technologies and change their relationships with consumers of educational services – students and their parents. The digital transformation in education is resulting in the active manifestation of new trends. We can say that we are already living in a new digital world.

Any innovations in education require resolving the contradiction between the desire of teachers to maintain a stable, comfortable, established mode of professional activity and the inability to meet the changed reality without destroying stereotypes, breaking traditions, and working style. Digital transformation can be thought of as a revolution in education that starts from the top, and its main ideologue is the head of an educational institution. In this regard, it is the head of an educational institution that should create conditions for motivating educators to use digital technologies, modern forms and methods of learning and development in the educational process for creative self-realization of everyone, leaving the comfort zone and mastering new professional skills. In order to improve the quality of the educational process, it is necessary

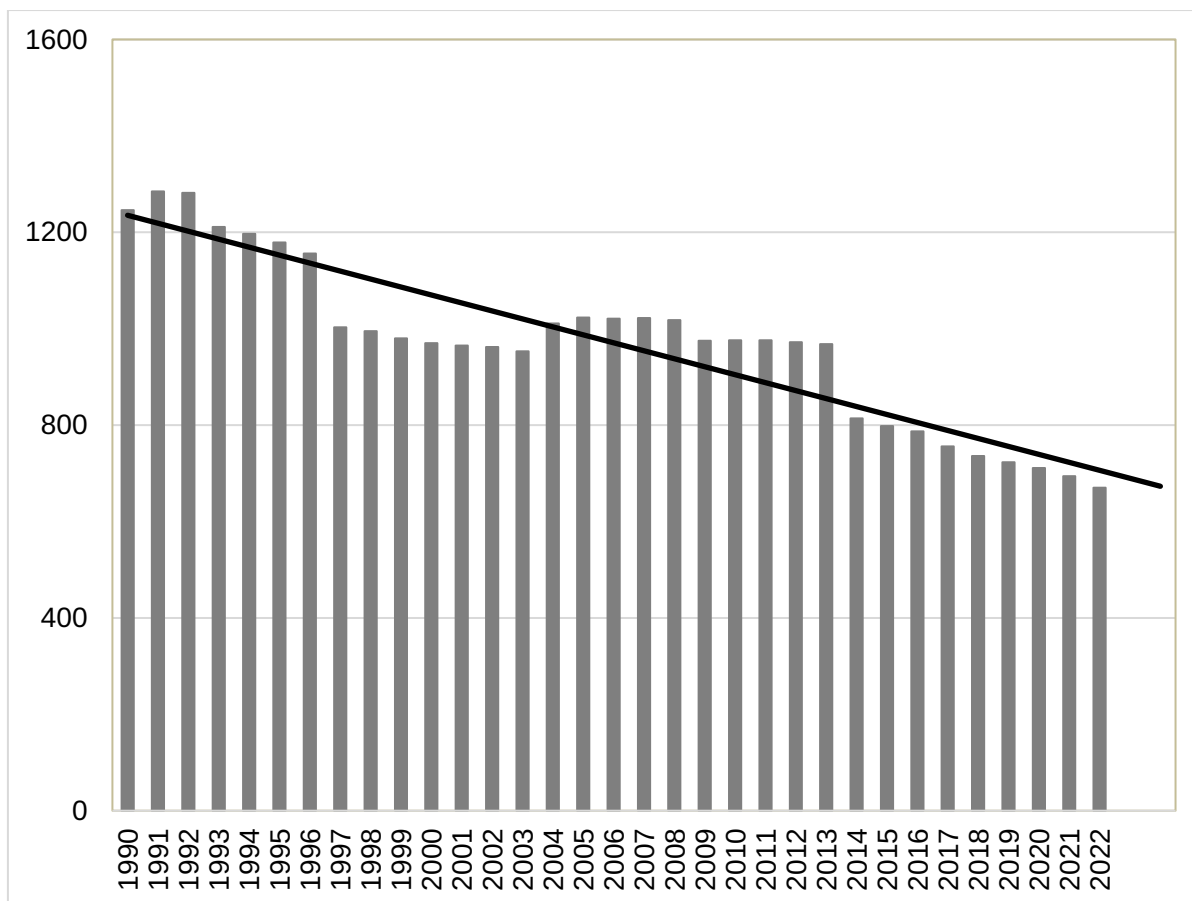


Figure 1. Number of vocational education institutions in 1990-2022

¹Data for 2014–2021 exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and the temporarily occupied territories in Donetsk and Luhansk regions.

²Information for 2022 is based on available data from the Ministry of Education and Science and excludes the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the temporarily occupied territories in Donetsk and Luhansk regions.

Source: according to [11]

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to create conditions for the professional and personal growth of teachers and to use modern methods of managing the development of pedagogical staff potential.

It should be emphasized that human resources potential is a complex concept that directly affects the efficiency of the organization as a whole. The management of an educational institution should be aware of the importance of finding effective forms and methods of using human resources management mechanisms to ensure sustainable economic growth. Proper personnel management and good motivation create the conditions not only for the successful achievement of the overall ultimate goal of the institution, but also for the full labor productivity of all employees, the development of their creative activity and the satisfaction of both physical and spiritual needs.

In a vocational education and training institution, human resource management is carried out by organizing the recruitment and retention of a qualified, motivated and committed workforce; maximizing the use and development of people's internal skills and professional development; enhancing the contribution of teachers through quality of teaching to the institution's exceptional capabilities that underpin its competitive advantage; taking into account individual and group differences in working relationships, behaviors and cultivating an environment conducive to teamwork and ensuring that.

It should be emphasized that the effectiveness of educational institutions largely depends on how they manage their personnel, which plays an important role in the quality of education and training of students. Organizational personnel

management is an innovation-oriented activity that involves constant change and improvement, which makes it innovative. Therefore, it can be stated that the main goal is to create an innovative system of personnel training and personnel management that can modify and motivate them for quality development and innovative behavior of employees to improve the efficiency of the institution through the quality of education and training.

Modern innovative human resource management systems perform several functions in combating uncertainty and improving corporate governance. First, it is due to the fact that human resources of an educational institution are the main factor of internal uncertainty. Second, uncertainty has a significant impact on the behavior and performance of employees. Therefore, among the functions performed by the human resource management system of modern educational institutions, there are special functions related to reducing the negative impact of uncertainty on staff performance. By systematizing the functions of the human resource management system in the field of uncertainty management, the following areas of work emerge:

1. Development of employees' loyalty to uncertainty and their psychological readiness to work in such conditions.
2. Establishing a clear hierarchical system of duties, rights and responsibilities.
3. Developing the ability of employees to work effectively in conditions of uncertainty.
4. Exploring ways to keep uncertainty at an acceptable level.
5. Staff development as an opportunity to reduce uncertainty.
6. Activation of project and team approaches to problem solving.
7. Communication management as the main factor of uncertainty.

Thus, we can conclude that uncertainty, which is an objective inherent feature of the modern environment, always accompanies management activities. Human resource management aimed at the innovative development of vocational education institutions should perform certain functions related to the elimination of the negative effects of uncertainty. Such functions should not only organize the flow of information, but also influence the preparation of employees for effective actions in situations of uncertainty, their participation in various processes of the organization, and their personal and professional development.

In the information society, human capital plays a major role in improving economic efficiency at the national and corporate level. Human capital is the most valuable resource that should be viewed as a set of knowledge, skills, abilities, aspirations, motivations, behavioral culture, etc. Human capital is created through human resource management by establishing logically interrelated processes aimed at providing the organization with specialists, managers of appropriate qualifications, and evaluating their performance. Human resource management affects the management system of vocational education institutions as a whole, its efficiency and competitiveness. Personnel are the most important resource of any educational institution. Currently, various management models are being developed in the science and practice of managing an educational institution. In the science and practice of education, there has been a recent rethinking of such categories as the goals of education, the mission and functions of the institution, etc. The problem of education quality has become a leading one. Regardless of the specific content of this concept, the authors agree that, assuming responsibility for the quality of education, the educational management system of an institution should realize that its main task is not to control quality, but to ensure its conditions.

Management of the teaching staff of a vocational education institution will be effective if a set of pedagogical conditions for such education management is provided, which includes three components: organizational and content, technological, and professional staff.

Organizational and content:

1. Objectives, results, content of activities.
2. Performance criteria.
3. The main objects of management.

Technological:

1. Pedagogical conditions for managing the staff of the institution:

- combination of personality-oriented, humanistic, human-centered approaches in the management of teaching staff;
- principle of pedagogical cooperation and interaction in management;
- formation of a positive psychological climate in the teaching staff;
- ensuring conditions for professional growth of teachers.

2. System of work with personnel.

3. Forms, means, methods, style of management.

Professional and personnel:

1. Professional composition of the institution's managers.

2. Additional requirements for the professional competence of managers:

- self-assessment of professional qualities and achievements;
- ability to develop an action program, its implementation, analysis and correction.

3. Conditions of professional development of managers and teachers.

The inclusion of the goal-results subsystem as the first and necessary component in the structure of the organizational and content component of the model is due, first of all, to the fact that, in accordance with the requirements of the systemic approach, it is the goal that is the system-forming factor. It becomes the initial basis for forecasting and planning activities, determines organizational forms, methods, means, impact of the implementation of decisions, serves as a standard of control (examination) and evaluation of actual results, allows to regulate and adjust the pedagogical process, behavior and activities of all its participants. The goal component represents a certain objectively determined, logical, harmonious and consistent hierarchy of goals and functions that this model is intended to implement in the system of innovation activities of the institution.

The problem of training management personnel and, in particular, the head of an educational institution in order to improve the quality of domestic education and their consideration in the system of education management and management training is by no means an idle one; it requires urgent, highly qualified and thorough consideration in order to make the only possible solution that ensures, first of all, the quality of domestic education, without which accelerated development of society is impossible – a breakthrough into the future as a systemic response to the civilizational challenge caused by various processes.

It should be emphasized that the digital economy necessitates the development of new competencies in traditional jobs and traditional fields of activity, and leads to the emergence of new professions and specialties. Accordingly, existing educational programs need to be changed and there is a demand for the development of new training programs. The formation of a single digital space in Ukraine leads to the emergence of specialists with new competencies in the industry, who, along with digital competencies, would demonstrate a confident command of big data analysis, machine learning, design,

modeling and optimization of cyber-physical systems, building intelligent systems, and building intelligent complexes. Thus, there is a need for new approaches to training specialists with relevant digital analytical competencies.

Technologies are rapidly changing, and all employees of an educational institution need systematically organized professional development, special time to share experiences and effective ways of working. In practice, this is often not taken into account when creating a development plan for an educational institution.

Today, technological solutions are being updated rapidly, and teachers need help to master increasingly effective technological solutions. Every teacher should have a regularly updated plan for mastering new information and pedagogical technologies that: meets their needs; is monitored and implemented; and is constantly updated. There are many ways to build personalized professional development plans for teachers. Among them are online courses, numerous training programs, automated simulators, webinars, mentoring, and mutual support via the Internet. The digital information environment helps to achieve a level of personalization of learning, control over learning achievements and engagement of students in their work that was impossible in the past. It makes it possible to quickly assess the dynamics of the formation of the necessary competencies. Working in a digital information environment helps students and teachers to make decisions and adjust their work quickly.

The introduction of digital technologies into the management system of an educational institution will optimize the work on implementing an integrated approach to the dynamics of the functioning of an educational organization. The coordinated work of management services contributes to the timely development of the right development strategy that supports the most effective areas of digital technology implementation. In addition, the organization of automated accounting of performance indicators of an educational institution will allow you to organize reliable feedback in conditions of uncertainty.

Digital management software systems provide educational institutions with opportunities to enter the global community. Benchmarking in education management will allow the management to develop the most optimal ways to improve the effectiveness of teaching, personnel

management, development of a system of interaction with parents and other external users, etc. based on interactive information. In other words, the use of digitalization in the administrative and management activities of an educational institution will ensure the effectiveness of the entire management architecture: finance and accounting, planning of the educational process, planning of costs for the educational process, and development of the quality of student training.

Conclusions from this study and further prospects in this direction. It is important to emphasize that the essence of the digital transformation of education is the flexible and effective application of innovative achievements in engineering and technology to move to a result-oriented educational process. It should be noted that the further continuation of digital modernization is a vector of development of an educational institution and a priority area of digital transformation of the economy. Therefore, based on the results of the analysis and the development of ways to solve the problems of vocational education development, the following conclusions can be drawn

– the basis of most problems lies in the lack of an adequate number of teaching staff, their professional burnout and personality deformation, formalization of learning outcomes, and the inability to carry out innovative processes;

– it is necessary to influence the system of career guidance for young people, to form the necessary qualitative knowledge about the content of work in the chosen profession;

– it is important to create an innovative system where the processes of professional development of the individual are harmonized, scientific and production and research practice is implemented, and the latest teaching technologies are used.

It should be noted that the main recommendations for improving the policy of personnel management in vocational education institutions include the following: development and creation of a system of material motivation with clear performance evaluation criteria; development and creation of a personnel training system that should be based on the following principles: the decision on the need for training should be made on the basis of an assessment of the effectiveness of teachers and the prospects of a particular direction; a mechanism should be created to ensure the continuous development of the training system.

Thus, the implementation of a balanced personnel management policy in educational institutions will increase staff motivation and efficiency, successfully retain and develop their own talented staff, which is generally consistent with the main strategic direction of quality education management.

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