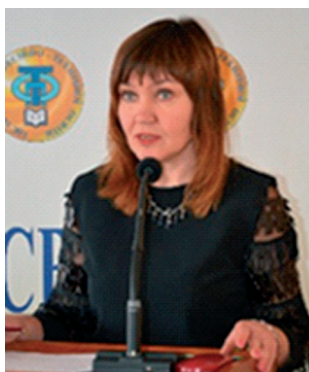


SCIENTIFIC AND METHODOLOGICAL SUPPORT OF COMPETENCE DEVELOPMENT OF PEDAGOGICAL EMPLOYEES OF VOCATIONAL (EDUCATIONAL AND TECHNICAL) EDUCATION INSTITUTIONS



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Abstract. The quality of the organization of the educational process in the institutions of vocational (technical) education is possible through the competence development of teachers. Professional competence is interrelated with pedagogical skills, it is a continuous systemic process. Competent development of teachers requires scientific and methodological support, which is provided by subjects of professional development, methodologists of vocational education, regional educational and methodological centers (offices) of vocational education. Among the forms of work with teachers on competence development should be divided into individual and group. Individual forms are realized through consultations, conversations, attending lessons and extracurricular activities, group ones include trainings, master classes, webinars, schools of perspective pedagogical experience, etc. Important in the scientific and methodological support of competence development is the study of foreign experience, participation in the implementation of international projects.

Key words: competence development, scientific and methodical support, educational process, institution of professional (vocational and technical) education.

Introduction. Vocational education takes an important role in the economic development of the state and is an integral part of the education system. The Law of Ukraine «On Education» outlines its main purpose as «the formation and development of professional competencies of a person necessary for professional activity in a particular profession in the field, ensuring its competitiveness in the labor market and mobility and career prospects throughout life» [1].

Unfortunately, in Ukraine today there is a shortage of workers and at the same time the quality of their training does not meet the demands and needs of employers. Therefore, the issues of popularization of vocational education, increasing the prestige of working professions are relevant for the state as a whole. Note that the quality of training of future skilled workers depends on many factors, including – the level of professional competence of teachers, their ability to self-education, readiness to innovate.

The modern pedagogue of the institution of vocational (technical) education must have a system of knowledge not only in the field of pedagogy, but also have professional qualifications in the field of teaching special disciplines. In this aspect, some scholars consider the concept of «professional and pedagogical competence», noting that the main functions of the teacher are divided into general pedagogical and general labor, and the content of their activities is related to the implementation of educational, research, educational and organizational-technological functions [2].

The Concept of the New Ukrainian School emphasizes the importance of the competence approach in the professional training of teachers and at the same time emphasizes the need to update the process of content and training of teachers. In particular, the document states that the number of models of teacher training will increase, and forms of professional development will be diversified into seminars, webinars, online courses, conferences, self-education, etc [3].

If we talk about the competence development of pedagogical staff, it is a continuous process that requires the provision of appropriate conditions, one of which is scientific and methodological support. It is worth noting that continuing education is becoming a key trend of the future, and the term «andragogy» is becoming increasingly used.

Analysis of research and publications

The main provisions of andragogy as a science of adult education and training, its role in the system of continuing professional education are presented in the scientific works of L. Artemova, G. Vashchenko, S. Vitvytska, S. Zmeev, L. Petrenko, L. Sergeeva, V. Sydorenko, A. Stareva and others. Theoretical and methodological principles of introducing a competency approach in the process of professional training of future skilled workers in ZP(PT) O are covered in the research of T. Gerland, V. Kovalchuk, V. Radkevych, G. Romanova, L. Pukhovska, N. Nychkalo, O. Scherbak, V. Yagupov and others. Psychological and pedagogical aspects of the development of professional competence of teachers in the system of post-graduate pedagogical education are outlined in the scientific work of S. Goncharenko, A. Gurzhiy, I. Zyazyun, V. Kremen, L. Lukyanova, N. Nychkalo and others. However, the problem of scientific and methodological support of the competence development of pedagogical staff raised by us does not lose its relevance and needs further research.

The purpose of the study is to show the main aspects of scientific and methodological support of competence development of teachers.

Material & methods

In the process of research we used the scientific provisions of competence, activity, system, personality-oriented, environmental, technological and information approaches, methods of collecting and analyzing information, generalization of scientific ideas. Before talking about the scientific and methodological support of competence development of pedagogical staff, we consider it necessary to dwell on the definitions of «competence», «professional competence of teachers» and «competence development». In the Law of Ukraine «On Education» competence is

presented as a dynamic combination of «knowledge, skills, ways of thinking, views, values, other personal qualities that determine a person's ability to successfully socialize, conduct professional and / or further educational activities»[1].

S. Goncharenko interprets competence as «a set of knowledge and skills necessary for effective professional activity: the ability to analyze, predict the consequences of activities, use information» [4, p. 149]. It should be noted that the professional activity of a teacher of an educational institution of any type, is closely related to the processing of large amounts of information, the ability to analyze and use it in the educational process.

A. Fedorovich gives the following definition of professional competence of a teacher – «it is a complex property of personality: a holistic, dynamic system of professional abilities (individual competencies), which allows consciously and creatively define and carry out educational activities, develop their individuality, achieve successful, optimal self-realization in the profession» [5, p. 111], but V. Sydorenko defines the professional and pedagogical competence of a modern teacher as «an integral characteristic of personality, which includes a comprehensive combination of thorough, systematic, multifunctional knowledge, professional and pedagogical value orientations, acmeological invariants, including special pedagogical abilities, traits, personality, temperament, personality, inclinations, beliefs, needs, guidelines), acmeological professional position, which provides professional development of the teacher through formal, informal, readiness to carry out innovative highly productive professional and pedagogical activities in modern sociocultural conditions» [6, p. 10].

The competence development, which means a holistic, continuous process of formation and improvement under the influence of social factors (learning, professional activity) of the relevant competencies necessary for a full life in society, social and personal self-realization in general and effective professional management in particular [7] professional development. However, the latter concept is narrower than «competence development».

Competence development of pedagogical workers, as well as any development, has the features. Regarding the competence development of teaching staff, we can see the following features:

- is a continuous process that requires systematicity;
- the main purpose of the competence development of teaching staff is to ensure the quality of the educational process ;
- competence development of teaching staff requires proper scientific and methodological support.

Motivation is an important factor in competence development. In the scientific works of N. Cisco, describes the role of motivation in the development of personality. The researcher divides it into internal and positive external, and to the positive external refers to the systematic support and reinforcement of desired actions by the management of the educational institution [7]. Both types of motivation (internal and external) takes an important role in the competence development of teachers. Usually internal motivation covers the inner desires of the person, his aspirations, inner state. For a teacher it is a love for pedagogical work, satisfaction from pedagogical activity, results of his work, desire to be the best and so on. External motivation is related to external circumstances. Examples of external motives for professional growth of teachers are bonuses, special certification, increase in paid teaching load, and so on.

We agree with the scientist's position on motivation, emphasizing the direct relationship between motivation and competence. In psychology there is a separate concept of «competence motivation». In this regard, we studied the scientific works of A. Shapovalov [8], who, considering the issues of effective personnel management, provides a matrix «Motivation / competence»

and emphasizes the role of the leader in the formation of motivation of subordinates. Thus, the scientist allocates the following categories of employees:

- with high motivation, but low level of competence development;
- with high motivation and high level of competence development;
- with high competence, but low motivation;
- with low competence and low motivation [9].

The traditional form of competence development of pedagogical workers is passing of advanced training courses. According to the current legislation, teachers and masters of industrial training increase their level of qualification by taking courses once every five years. In August 2019, the Cabinet of Ministers of Ukraine adopted a resolution «Some issues of professional development of pedagogical and scientific-pedagogical workers» [10].

However, the term of the inter-course period for teachers has not changed, and the total amount of in-service training has increased to 150 hours for five years. This period of in-service teacher training – once every five years – is too long.

New pedagogical technologies are emerging, forms and methods of pedagogical activity are being updated, changes in production technologies and services are taking place, and knowledge and skills acquired in the past require constant updating. There is a special term – «half-life of competence», when the acquired knowledge after graduation becomes obsolete by 50%. The duration of this period depends on the specifics of the professions, in some areas can range from several months to 5–10 years [11]. The labor functions of teachers are related to the organization and implementation of the educational process, the implementation of methodological work, establishing links with the labor market, performing certain types of work of a technological nature, related to the direction of relevant training. Therefore, the professional competencies of teachers should be developed, and teachers themselves – to strive for self-development and self-improvement.

We have identified some provisions for the development of competencies of teachers and the relationship with pedagogical skills:

- professional competence is one of the components of pedagogical skills;
- a necessary condition for the development of pedagogical skills is the mastery of modern technologies of teaching and education;
- essential in determining the role and functions of pedagogical skills in the system of continuing pedagogical education is its development as a complex organizational system that includes the process of formation, formation and development of the teacher, which begins at school, continues in higher education and is implemented in postgraduate education;
- the logic of building pedagogical skills can be represented by the formula: «knowledge - experience – personality»;
- pedagogical competence is an indicator of pedagogical skill and combines experience, theoretical knowledge, practical skills and important personal qualities for the teacher [12].

The level of competence development of pedagogical workers depends on the quality of providing scientific and methodological support, which is usually provided by methodologists in educational institutions. In the professional standard «Methodist of the institution of vocational education» one of the labor functions of the methodologist is defined as methodical support of professional development of teachers. In addition, the standard identifies a number of professional competencies of the methodologist in relation to this job function:

- ability to organize the process of continuous professional development of pedagogical workers, raising the level of their pedagogical skills;

- the ability to assist teachers in choosing forms and methods of teaching and educating students, creating methods of training and extracurricular activities and improving the educational process;
- ability to advise teachers in the development of author's curricula, creation and publication of printed and electronic products;
- ability to provide organizational and methodological support for the certification of teachers;
- ability to interact effectively with scientific, pedagogical, other educational institutions and employers [13].

Every year the methodologist makes a long-term plan for professional development of pedagogical staff of the institution. This takes into account the needs of teachers and the proposals of the subjects of advanced training. In addition to traditional courses for the relevant categories of students of in-service training courses, today the subjects of in-service training offer non-traditional forms of in-service training. For example, the Bila Tserkva Institute of Continuing Professional Education enrolls in author's schools and studios: School of Leaders of Vocational Education, School of Advanced Pedagogical Experience, School of Pedagogical Coaching, ONLINE Studio of Digital Technologies, School of Teacher Professional Development. Advanced training in such forms contributes to the implementation of the individual trajectory of professional growth, takes into account the individual needs of teachers, is the implementation of competency-oriented and customer-oriented approaches.

Scientific and methodological support of competence development of pedagogical workers includes collective and individual work with teachers and masters of industrial training. Among the collective forms of work it is expedient to single out instructive-methodical meetings, schools of perspective pedagogical experience, schools of masters of industrial training, schools of beginning teachers, pedagogical readings, master classes, seminars, trainings, webinars, etc.

Individual forms of work with teachers include individual counseling, conversations, discussions, attending lessons with further analysis. Individual forms are usually more effective in working with beginning and experienced teachers who have extensive experience and pedagogical experience. If the first category of teachers needs enhanced individual assistance and support, as there are no established skills of pedagogical activity, the second category – teachers with experience, on the one hand, can hardly find new pedagogical ideas, because they have «tried everything» during his pedagogical activity, on the other hand, they may be in a state of professional burnout and require additional motivation and separate scientific and methodological support.

If we talk about the technologies of distance, and in the current conditions and blended learning, their implementation requires teachers to increase the level of digital literacy, digital culture, and finally – digital competence.

Distance learning, introduced in March 2020 in connection with the spread of coronavirus COVID-19, showed weaknesses in the digital competence of all participants in the educational process, including and teachers. Therefore, raising the level of digital literacy should be a prerequisite for the competence development of teachers. Currently, there are many courses, trainings on the use of online services in the educational process.

The benchmark for self-determination of the level of one's own digital competence can be the matrix for assessing the framework of digital competence of teachers DigCompEdu, published by the European Research Center of the EU. According to the document, the digital competence of a teacher is determined by 6 areas in 22 components. Such areas are:

1. Professional involvement.
2. Digital resources.

SECTION I

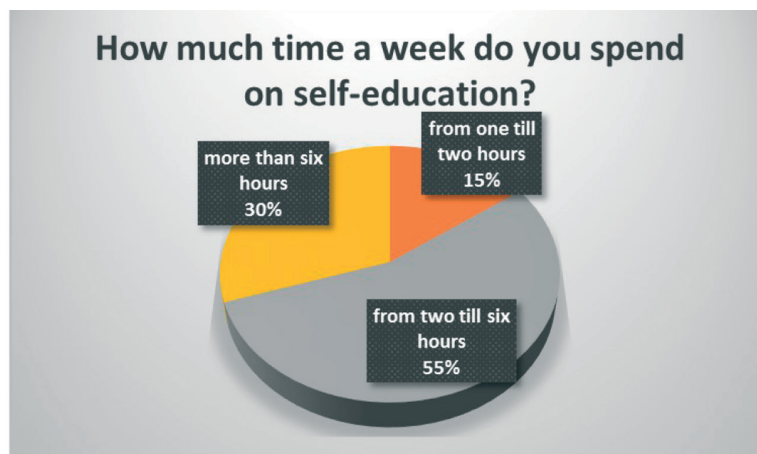
3. Teaching and learning.
4. Evaluation.
5. Empowering students.
6. Promoting digital competence of students.

For each area, the document defines the following levels of digital competence of the teacher: beginner – A1, researcher – A2, integrator – B1, expert – B2, leader – C1, pioneer – C2 [14].

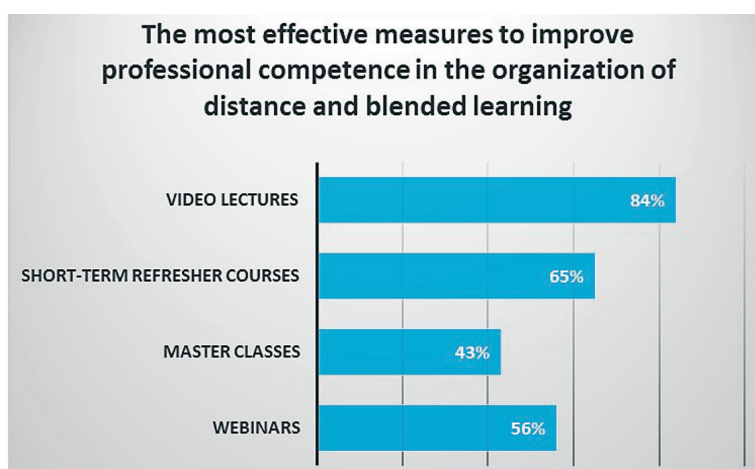
We conducted a survey among teachers of Vinnytsia Higher Vocational School of Services on the organization of improving the level of digital competence as a component of professional competence to ensure the quality of the educational process in distance and blended learning. 62 pedagogical employees of the institution took part in the survey: 33 teachers and 29 masters of industrial training. Respondents were asked the following questions:

1. On average, how much time a week do you spend on self-education?
2. What, in your opinion, are the most effective measures to improve professional competence in the organization of distance and blended learning?
3. On what issues is there a special need for scientific and methodological support for the development of professional competence in terms of distance and blended learning?

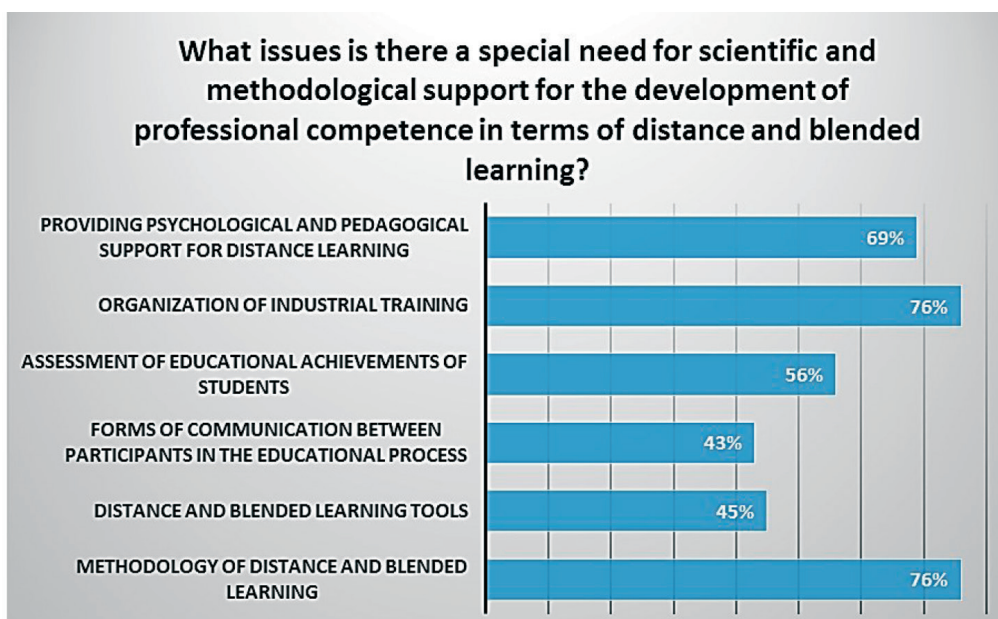
The results of the survey are presented in Pic. 1–3.



Pic. 1. Survey results on the use of time for self-education



Pic.2. The results of the survey on the effectiveness of measures to improve professional competence in the organization of distance and blended learning



Pic. 3. The results of the survey on the need for scientific and methodological support in terms of distance and blended learning

The possibility of increasing the level of digital competence of teachers depends on a number of objective and subjective reasons, among which the level of technical support of the educational institution is important. Undoubtedly, the development of digital competence of pedagogical workers will be effective under the condition of proper material support, high-quality connection to the Internet. This means that the managers must take care of timely replenishment and updating of the material and technical base of the institution.

Comprehensive conditions for the competence development of teachers are provided through participation in various competitions. In essence, competitions are held to promote the development of professional competencies. The teaching staff is involved in competitions from two positions: firstly, as direct participants, and secondly, as those who prepare students-competitors. A special place among the competitions of professional skills is occupied by the largest competitions (a kind of Olympic Games) in the working professions of WorldSkills. Holding the All-Ukrainian competitions of professional skills WorldSkills Ukraine is one of the steps of integration of our country into the European educational space.

In this aspect, we can state that the practice of foreign experience of professional development of teachers is valuable for domestic pedagogy [15]. International internships, participation in European projects, meetings with foreign partners contribute to the development of professional competencies of teachers.

The projects implemented in Ukraine are primarily aimed at transferring experience in problem-oriented learning, conducting basic research in the field of pedagogy, exchanging experience in the field of inclusive education, covering issues of professional development and career counseling. International cooperation is an important element in the development of professional competencies of pedagogical staff, and the study of international experience contributes to the introduction of innovative methods of professional training of future skilled workers. Consider some of the projects implemented with the support of the Ministry of Education and Science.

SECTION I

Within the framework of the Turin Process, the Ministry of Education and Science of Ukraine has been cooperating with the European Education Fund since 2010 on improving vocational (technical) education in Ukraine in accordance with European standards. During 10 years the European Foundation for Education and the Ministry of Education and Science of Ukraine have initiated and implemented a number of international projects:

- project «Improving the system of vocational education by forecasting and adapting skills, social partnership and optimizing the use of resources» (2011–2013);
- PRIME project «forecasting the impact of reforms in the field of vocational education and training» (2014–2015);
- project «Training in production» (2015–2017);
- project «Decentralization of vocational education in Ukraine - a push to action» (2016);
- project «Skills and management of vocational education: providing recommendations for the establishment of regional councils and defining their functions» (2018);
- project «Public-private partnership in the development of vocational education» (2018-2019);
- project «Improving the efficiency of regional networks: joint work on the creation of centers of professional excellence in Ukraine» (2019);
- project «Reforming regional networks of vocational education in Ukraine: the introduction of autonomy and reporting of vocational education» (2019–2020) [16].

In 2016, at the initiative of the Estonian side, Volyn educators started cooperation with the INNOVE Foundation and launched the project «Presentation of Estonian experience to support vocational education reform in Ukraine», which aimed to support vocational education reforms in Ukraine through Estonian experience and expert advice. Six institutions were selected to participate, which developed two modular educational programs in 2 years, and later the project was expanded to cover Rivne and Khmelnytsky regions. In total, 16 vocational educational institutions took part in the project [17].

The Vinnytsia Higher Vocational School of Services has significant experience in international cooperation. The institution has signed cooperation agreements with:

- Association of Polish Schools (since 2013, annual business trips are held to exchange experiences in organizing the educational process);
- hotel and restaurant complexes of Bulgaria: «Yavor Palace», «Colosseum», «Planet» and the International Youth Recreation Center of Bulgaria, where for 6 years students and teachers of Vinnytsia Higher Vocational School of Services undergo industrial practice and internships, get acquainted with modern international technologies in the field of service, gain practical business skills;
- Department of International Cooperation of Folk University (Sweden) – participation in projects «Baltic Network for prevention of Early School Leaving» (SEE-ME-I, SEE-ME-I), IGMA-3.

Due to the implementation of these projects:

- 37 pedagogical staff of Vinnytsia Higher Vocational School of Services took part in five trainings on the methodology of problem-oriented learning;
- 22 students and 15 teachers – in the trainings «Innovative approaches to learning according to European standards»;
- 5 teachers of the school had the opportunity to visit a number of educational institutions in Sweden on business trips.

As we can see, mastering the European experience is an effective mechanism for developing the professional competence of teachers, and the concept of lifelong learning is becoming a determining element in the formation of pedagogical skills.

Conclusions

According to the results of the study, it is established that a necessary condition for ensuring the quality of the educational process in vocational (technical) education institutions is the development of professional competencies of teachers, which should become a continuous dynamic process. An important role in competency development is played by scientific and methodological support, which is provided through advanced training courses, cooperation with methodologists of ZP (PT) O and methodologists of regional educational and methodical centers (offices) of vocational (technical) education. Effective forms of development of professional competencies of teachers are webinars, trainings, seminars, master classes, participation in professional competitions. In addition, the level of professional competence of teachers increases through the study of foreign experience and participation in international projects, which, in turn, affects the quality of training of future skilled workers, and as a consequence, their competitiveness in the labor market.

The results of the research were obtained in accordance with the research topic of the Department of Methods of Vocational Education and Social Sciences of the Bila Tserkva Institute of Continuing Vocational Education «Development of scientific and methodological competence of vocational school teachers on innovative models in continuing education».

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