

Titova, O., Luzan, P., & Mosia, I. (2024). The concept of college teacher's professional competence development. In: Blaha, O., Ostopolets, I. (eds.) Exploring the digital landscape: interdisciplinary perspectives. Digital Economy And Digital Society (DEDS2024). Academy of Silesia, Katowice, 819-829. <https://doi.org/10.54264/M036>

THE CONCEPT OF COLLEGE TEACHER'S PROFESSIONAL COMPETENCE DEVELOPMENT

Olena Titova

Laboratory of Scientific and Methodological Support for Specialists Training at Colleges and Technical Schools, Institute of Vocational Education of the National Academy of Educational Sciences of Ukraine

Kyiv, Ukraine

olena.titova2310@gmail.com

Petro Luzan

Laboratory of Scientific and Methodological Support for Specialists Training at Colleges and Technical Schools, Institute of Vocational Education of the National Academy of Educational Sciences of Ukraine

Kyiv, Ukraine

petr.luzan@ukr.net

Iryna Mosia

Laboratory of Scientific and Methodological Support for Specialists Training at Colleges and Technical Schools, Institute of Vocational Education of the National Academy of Educational Sciences of Ukraine

Kyiv, Ukraine

mosyaira@ukr.net

Abstract. The research dealt with the process of professional competence development for the teachers at a college. The understanding of the fact that the teacher's professional competence is essential in the process of vocational education development under the current global and local challenges requires the college teacher to be involved in the continuing improvement of their professional knowledge and skills. The conceptual idea of the research was based on the assumption that for the purposeful development of the teacher's professional competence, it was necessary to develop a system that covers all the elements of the educational process. The conceptual model was built to illustrate the process of a college teacher's purposeful professional development.

Keywords: teaching skills, continuing professional development, vocational education, vocational training, pedagogical modelling.

КОНЦЕПЦІЯ РОЗВИТКУ ПРОФЕСІЙНОЇ КОМПЕТЕНТНОСТІ ВИКЛАДАЧА КОЛЕДЖУ

Олена Тітова, Петро Лузан, Ірина Мося

Анотація. Дослідження присвячено процесу формування професійної компетентності викладачів коледжу. Розуміння того факту, що професійна компетентність викладача є важливою у процесі розвитку професійної освіти в умовах сучасних глобальних і локальних викликів, вимагає від викладача коледжу постійного вдосконалення своїх професійних знань і вмінь. Концептуальна ідея дослідження ґрунтувалася на припущенні про те, що для цілеспрямованого розвитку професійної компетентності викладача необхідно розробити систему, яка охоплює всі елементи навчального процесу. Концептуальну модель побудовано для ілюстрації процесу цілеспрямованого професійного розвитку викладача коледжу.

Ключові слова: педагогічна майстерність, безперервний професійний розвиток, професійна освіта, професійне навчання, педагогічне моделювання.

In the conditions of the challenges facing Ukrainian society in connection with the war the requirements for the training of specialists by colleges and vocational education institutions, in particular, for the qualification of professional junior bachelors, are significantly increasing. College graduates from the very first days in their jobs must constructively and creatively treat professional situations, demonstrate the ability to independently master the latest production technologies, the ability to learn continuously throughout life. It is generally recognized that the central, dominant factor in the activation of student learning is the pedagogical activity of the teacher as well as the teacher's ability to implement human-to-human interaction that ensures the comprehensive development of students' personality, their potentials and creative abilities. It is about the professional competence of the teacher as their ability and readiness to effective teaching.

Professional competence is not a once and for all acquired ontological attribute of sociocultural and professional life. With the modernization of the society and economy as a result educational process changes in priorities in professional settings and functions, in particular, caused by special conditions of activity (pandemic, war), established methods and techniques of professional and pedagogical activity that gradually lose their effectiveness. Under certain conditions, educational technologies cease to be productive, need a constructive rethinking of value-target the structure of education. If teachers do not realize the continuous professional and personal growth, cease to systematically undergo advanced training according to innovative models in the leading areas of a certain scientific field, to take care of the growth of technological culture, then they gradually lose the acquired level of professionalism and creativity. Therefore, the substantiation of the concept of purposeful, continuous, systematic development of teachers' stable professional position and culture, the desire to raise themselves to the top of pedagogical mastery, is an urgent problem of the development of the teacher's professional competence which was studied in the conditions of a Ukrainian college for the current research.

Therefore, the purpose of our research was specified by the following tasks: to determine the main ideas, directions, approaches, principles and tools for the professional growth of college teachers and to substantiate the concept of continuous, systematic development of their professional competence as a holistic theoretical methodological construct with the base on the mechanisms of pedagogical activity making and improvement.

To justify the conceptual foundations of the purposeful development of the professional competence of college teachers, first, a conceptual system of research was developed by defining the main terms ("professional development", "professional competence", "professional competence of a teacher", "professional competence of a teacher at a college" presented in (Titova et al., 2023; Luzan et al., 2024)) to determine methodological approaches, factors, principles of development of the studied phenomenon, to study the peculiarities, to establish the directions of purposeful development of the teachers' professionalism, to scientifically substantiate the goals, principles, organizational and pedagogical conditions and models of systematic development of teachers' pedagogical activities, to define and justify the methods, forms, means and technologies for systematic development of the teachers' professional competence. The development of diagnostic tools and methods for assessment of the levels of teachers' professional competence needed particular attention.

The definition for the *purposeful development of the teachers' professional competence* given in (Luzan et al., 2024) was focused on the logical rules of definition of concepts. The research substantiated the following essential specific signs of the professional competence of a teacher at a college: qualified performance of teaching activity; a complex of psychological and pedagogical, methodical, methodological, ecological, etc. knowledge; the ability of educational and methodical work, the skills of students' teaching and personality development; moral and ethical values; professional qualities. As a result, the college graduates obtain a sufficient level of professional and personal education and training.

As the teacher's professional competence was considered as an integrative property its structural and functional analysis was carried out to study the construct of the professional competence of a teacher at a college: Motivation and Value component was introduced to reflect the motives and wishes to realise innovative teaching, teacher's professional values oriented on the

highest levels of development; Cognitive-information component had to show the system of professional theoretical and practical knowledge, supported by special teaching methods and educational techniques enabling to solve social and educational problems; Behaviour and Activity component demonstrated a complex of interconnected skills and abilities to realise teaching at a high-quality level; the component of Personal Reflection was used to describe the abilities to determine one's career growth potential, control one's own professional life directions, reflect one's potential in pedagogical activities; Emotion and Volition component was to reflect the ability to realise one's own emotions and feeling in different educational situations, readiness to professional growth and self-improvement.

The characterized structure of the teacher's professional competence could be effective for the general diagnosis of the development of the investigated phenomenon. To invent or choose among existing, specific methods and technologies for the teachers' professional competence improvement it was necessary to define those types of professional competence, which were the leading ones and required for a college teacher under current challenges. The methodology and result of the experiment, which included Google Forms survey of 389 Ukrainian college teachers, were presented and discussed in (Luzan et al., 2024). The survey enabled to determine nine leading types of teacher's pedagogical activity including such areas as educational, methodical, didactic, subject, digital, research, inclusive, communicative, psychological, ecological, health-preserving, economic, projective, evaluative, analytical, organizational, cultural, social, prognostic, political, legal, etc. The given list of types of pedagogical activity was processed to reveal nine of the most actual ones, which made up the teacher's professional competence structure based on the types of pedagogical activity. The structure was presented by nine components: the training component (the ability to teach, transfer and explain knowledge, form and develop students' skills and abilities, on the other hand, that component included the teacher's ability to learn and develop own professional level); the educational component (combined teacher's personal and activity qualities demonstrating their ability, theoretical and practical readiness to realise educational process and develop their student's personality); the methodological component of the teacher's professional competence (the ability to produce teaching materials, choose effective teaching tools, methods and technologies); the subject component (teacher's theoretical and practical knowledge and skills on a definite subject, domain), the information and digital component (the teacher's digital competence in the aspect of educational process); the environmental component (refers to environmentally friendly technologies for student's future professional activity, "green" and environment protection values); the inclusive component (the ability to consider students' needs and wishes, potentials and abilities, the skills to organise the educational process for the group where there are students with special educational needs); the research component (the ability to apply scientific methods as well as provide scientific research); the communicative component (the ability to provide effective communication among all the participants of the educational process).

To develop the method for college teachers' purposeful professional development the nine type components were ranked according to their significance. The procedure was described in (Luzan et al., 2024), so here the main findings, which were the base for the conceptual principles development, were mentioned (Fig. 1).

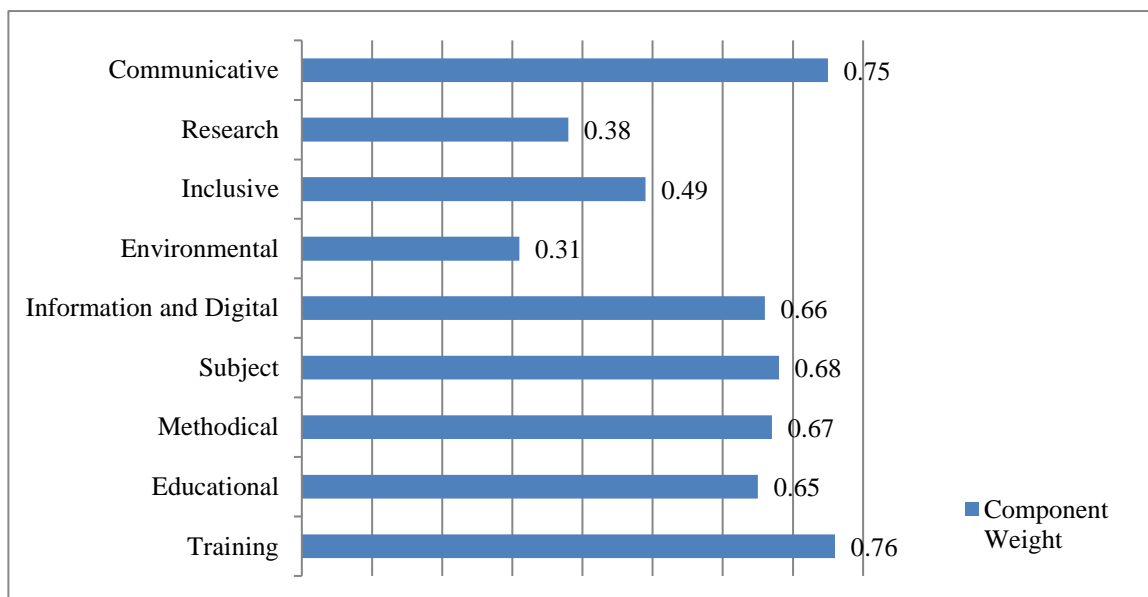


Fig. 1. The results of the experts' ranging of the components of college teacher's professional competence

According to the experts, the most important components of college teacher's professional competence were educational and communicative ones. The fact that the inclusive, research and environmental components received the last positions should be considered as they revealed the need to pay special attention to those components which refer to the professional abilities necessary to realise the Sustainable Development Goals as well as respond to the challenges of European Green Deal and the Industry 5.0 concept (Masterson, 2023; Imara, & Altinay, 2021; Adel, 2022).

So, the main conceptual idea of the research was based on the assumption that the purposeful development of the college teacher's professional competence could be provided through a specially designed system that structurally and functionally combines the goals, content, methods, forms, means, digital technologies, diagnostic tools, etc. referring to the defined directions of the teacher's professionalism growth. Such a system introduced into the college educational process could have a positive effect on the specialists' vocational training especially in the conditions of the war and post-war times. The proposed system should combine ways for continuous growth of teacher's professionalism in the following directions:

- development of teacher's professional competence in post-graduate education (that refers to the *formal education* that is obtained under educational programs according to the levels of education, domains, professions determined by standards). It provides the achievement by student teachers the learning outcomes of the corresponding level and the acquisition of qualifications determined by education standards and is recognized by the state);

- teacher's professional competence improvement while realising the methodical work at a college, when the teacher is carrying out the scientific activity, preparing the classes, training and preparing the students to participate in research, competitions, projects (*non-formal education* which is usually obtained according to educational programs but does not provide the qualifications of state-recognized education level, it also can be finished with obtaining of the profession and/or partial educational qualification);

- professional competence growth as the result of a teacher's professional self-development and self-improvement (*informal education* which refers to the self-organized activity aimed at the acquisition of certain competencies, it usually takes place in everyday activities related to social and professional areas).

In the current research, it was justified that the development of a teacher's professional competence should be based on the concepts of general methodological approaches (systemic,

activity-oriented, person-oriented, axiological, cultural and communicative) and several specific approaches, distinguished based on the peculiarities of solving the investigated problem (competent, environmental, information, humanistic, synergistic, technological). The detailed substantiation of the methodological approaches was presented in (Titova et al., 2023). For this research, the specific purpose of the specified methodological approaches was briefly indicated:

- *the systemic approach* provided an opportunity to consider the process of a teacher's professional competence development as a system in which goals, tasks, content, methods, forms, means and other components of the educational process are combined into a single competence-oriented construct;
- *the activity approach* required the involvement of the participants of the educational process in activities and the provision of appropriate conditions for that;
- *person-oriented approach* required strengthening of humanities, personally significant material in the context of professional development of teachers; development of methods and technologies based on the principles of pedagogy of tolerance;
- *the axiological approach* involved teaching of all subjects of the educational program based on the principles of humanism, where the criterion for a teacher's professional development is not so much the acquired innovative knowledge, skills and abilities, but the awareness and acceptance by every teacher and student of humanistic ideals and values, striving for constant self-improvement;
- *the cultural approach* was aimed to the creation of necessary conditions for the assimilation of universal and national culture by all participants of the educational process, allowing studying the professional development of teachers in the context of the integration of pedagogy and culture;
- *the communicative approach* meant the development of skills to build effective communication among the participants in pedagogical interaction, the ability to build an environment of trust, support and mutual assistance, the atmosphere of effective cooperation promoting the growth of motivation for self-improvement;
- *the competence approach* was considered to shift the emphasis from the possession of information to the ability to apply knowledge in practice, to orient the teaching staff to the formation of competence as an individual's ability to perform activities successfully;
- *the environmental approach* referred to a specially created educational environment at a college as a fundamental factor in the professional development of all the participants of the educational process, which functions as an open system, creating conditions for continuous professional development of both teaching staff and students;
- *the synergistic approach* needed to provide an opportunity to consider the process of development of teachers' professional competence as an uncertain and dynamic construct, an open system that organized itself, and was self-managed.

In the current study, we followed the position that according to the grouping of methodological approaches, the principles of college teacher's professional competence development needed also to be divided into general and specific ones. The general principles included: the principle of scientific content; the principle of connection between theory and practice; the principle of activity and consciousness; the principle of systematicity and consistency; the principle of availability as well as the principle of visualization. Those principles were considered to be general and well-known, so they had been characterized in detail in previous pedagogical studies, therefore we did not focus on them. At the same time, it was necessary to prove the specific principles of college teacher's professional competence development: continuity, prioritization of self-education, reflectivity, modularity, synergism, humanization, human-centeredness, integration, fundamentality, etc.

Among the specific pedagogical principles of purposeful development of teacher's professional competence, the main one, in our opinion, was *the principle of continuity*. Logically, this prescription followed from the fact that the professional development, in particular of a teacher, is a multifaceted, multifactorial process of consistent, systematic accumulation of various knowledge, formation of a complex of practical skills and abilities, professional values, personal and professional qualities. In addition, the need to highlight the principle of continuity was indicated by the following pedagogical patterns (Bergin, 2007; Eckstein, Marquardt, Manns, & Wallingford, 2001, 2002): "Tool Box", "Lay

on the Land”, “Build on past experience”, “Spiral”, etc. which were interpreted for that research as “Cognitive development never starts from nothing as that is a sequential process of a natural change of stages, each is based on the previous one and acts as a basis for the next one”; “The strength of assimilation of the content of educational material is greater, the more systematically organized direct and delayed repetition of this content is”; “If other things being equal, the effectiveness of distributed (stretched in time) study of educational material is higher than the effectiveness of concentrated (for a short period of study time).” Due to the implementation of the principle of continuity constant connection of the stages of personal growth of the teacher, gradual, systematic updating of professional, methodical, psychological and pedagogical knowledge, further formation of aspirations for self-improvement and self-regulation of one’s professional and pedagogical level was made possible. At the same time, learning (self-education), social environment and pedagogical activity were the main factors of the professional and personal growth of a teacher. Their successful action was achieved due to the creation of a unified system for professional development of teachers at a college. The defined principles as normative requirements for the purposeful development of the professional competence of teachers should be ensured by certain learning conditions, which were presented and substantiated (Titova, 2024).

To illustrate the concept of a college teacher’s purposeful professional development, the structural-content model was built (Fig. 2). It was made up of four blocks. The *Methodology and Goal block* included: the goal (to ensure the continuous development of the professional competence of teachers at a college), target landmarks (to develop the structural components of professional competence as an integrative property of the individual; to develop the main types of professional competence of a teacher at a college); principles (general and specific) of purposeful development of teacher’s ability to carry out the pedagogical activities effectively.

The *Organization and Participants block* of the model revealed the stages (motivational-informational, formative-technological, diagnostic-corrective), directions of using the mechanisms and technologies of formal, non-formal and informal education and defined the participants involved in the organization of the process of teacher’s professional competence development.

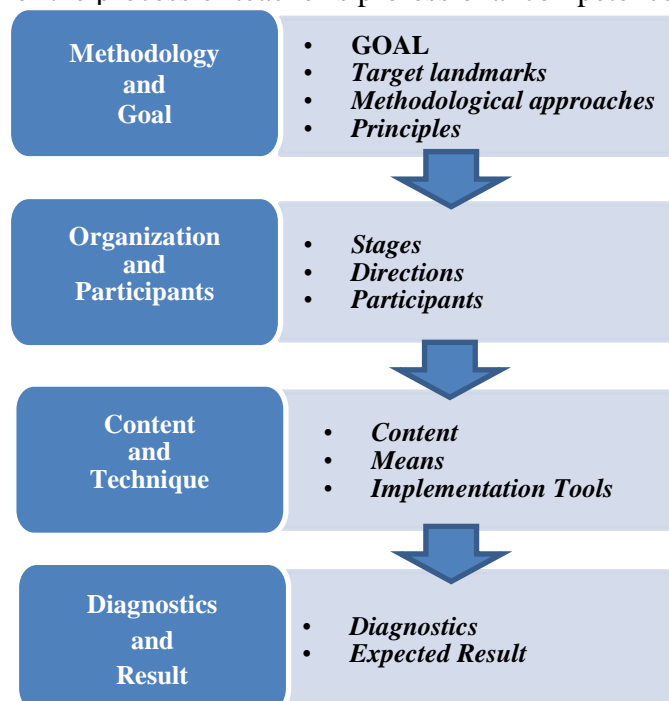


Fig. 2. Conceptual model of the college teacher’s purposeful professional development

The *Content and Technique block* involved the selection of content, the determination of means and tools for its implementation (methods, forms, innovative learning technologies) according to justified stages and organizational directions, which covered the development of a detailed methodology for the improvement of teacher’s abilities to provide innovative teaching.

The *Diagnostics and Result block* in the model contained a diagnostic toolkit for measuring and assessing the levels of the teacher's personality trait, which was based on the application of defined criteria (Titova, 2024) and relevant indicators. The predicted result of implementing the proposed model was *positive shifts in the levels of the components of teacher's professional competence and the growth of their abilities to effective pedagogical activity*.

The proposed conceptual structural-content model could be an ideal representation of the development of the studied integrative property, the teacher's professional competence, in the conditions of the educational environment of a college. The ideas embedded in that theoretical construct determined the strategy and tactics of developing the professional competence of teachers as a continuous process with is realised according to a specific technology, theoretical and methodological patterns as well as prognostic trends. In our further scientific investigation, we will focus on the development trends for the system of advanced training of college teachers.

References:

1. Titova, O. A., Luzan, P. H., Pashchenko, T. M., Mosia, I. A., Ostapenko, A. V., & Yamkovyi, O. Yu. (2023). *System of development of professional competence of teaching staff at colleges in conditions of pandemic, war and post-war times: monograph* (O.A. Titova, ed.). Kyiv: IVE NAES, <http://lib.iitta.gov.ua/738694/>
2. Luzan, P., Titova, O., Mosia, I., Pashchenko, T., & Navruzova, G. (2024). The Model for Professional Competence Development of Engineering Teachers at Colleges. In: Ivanov, V., Trojanowska, J., Pavlenko, I., Rauch, E., Pitel', J. (eds.) DSMIE 2024. Lecture Notes in Mechanical Engineering. Springer, Cham. (*in press*)
3. Masterson, V. (2023) These are the most in-demand skills now - and beyond. In The Growth Summit: Jobs and Opportunity for All. World Economic Forum. Future of jobs 2023. <https://www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills/>
4. Imara, K., & Altinay, F. (2021). Integrating Education for Sustainable Development Competencies in Teacher Education. *Sustainability* 13(22), 12555, <https://doi.org/10.3390/su132212555>.
5. Adel, A. (2022). Future of industry 5.0 in society: human-centric solutions, challenges and prospective research areas. *J Cloud Comp* 11(40). <https://doi.org/10.1186/s13677-022-00314-5>.
6. Bergin, J., (2007). Fourteen Pedagogical Patterns. Available: <http://csis.pace.edu/~bergin/PedPat1.3.html>
7. Eckstein, J., Marquardt, K., Manns, M. L., & Wallingford, E. (2001). Patterns for Experimental Learning. URL: <http://csis.pace.edu/%7Ebergin/patterns/ExperientialLearning.html>
8. Eckstein, J., Bergin, J., & Sharp, H. (2002). Patterns for Active Learning. URL: <http://csis.pace.edu/~bergin/patterns/ActiveLearningV24.html>.
9. Titova, O., Luzan, P., Ishchenko, T., Kabysh, M., & Homeniuk, D. (2024). Improvement of Professional Competence of General Education Teachers for Engineering Curriculum. In: Tonkonogyi, V., Ivanov, V., Trojanowska, J., Oborskyi, G., Pavlenko, I. (eds.) *Advanced Manufacturing Processes V. InterPartner 2023. Lecture Notes in Mechanical Engineering*. Springer, Cham. https://doi.org/10.1007/978-3-031-42778-7_35.