

Methodological approaches to the formation of key competences of future specialists

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Annotation. The article is devoted to the study of the actual problem of the theory and practice of modern education regarding the definition, analysis and characterization of methodological approaches that are used in order to form the key competencies of future specialists. The results of the analysis of scientific and pedagogical literature devoted to the coverage of various aspects of the research subject are presented. It was determined that the formation of key competencies of future specialists is based on the use of a number of methodological approaches. Their analysis was performed and the characteristic of each of them was presented. It was concluded that the member states of the European Union are actualizing the problem of applying appropriate approaches, methods, processes, and tools in order to provide the opportunity for future specialists to form knowledge, skills and values, which are components of the key competences, which allows to continue learning and improve oneself in the process of continuous educational experience. Among others, the special attention is focused on the organization of an educational environment in which the student is an active participant in the educational process, has opportunities for personal development, which is realized by using the potential of research, project, experimental learning in an interdisciplinary context, etc.

Keywords: future specialist, methodological approaches, key competencies, institutions of higher education, European Union.

Методологічні підходи до формування ключових компетентностей майбутніх фахівців

Анотація. Стаття присвячена дослідженню актуальної проблеми теорії та практики сучасної освіти щодо визначення, аналізу та характеристики методологічних підходів, які використовуються з метою формування ключових компетентностей майбутніх фахівців. Подано результати аналізу науково-педагогічної літератури, присвяченої висвітленню різних аспектів предмету дослідження. Визначено, що формування ключових компетентностей майбутніх спеціалістів базується на використанні низки методологічних підходів. Виконано їх аналіз і представлено характеристику кожного з них. Зокрема, виконано аналіз та схарактеризовано таких підходів: студентоцентрованого підходу, індивідуального підходу, командного підходу, дослідницького підходу, проектного підходу, експериментального підходу до навчання,

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міждисциплінарного підходу, багатомовного підходу, підходу оптимального використання цифрових технологій в освіті, підходу що передбачає використання освітнього середовища, що підтримує соціальний та емоційний розвиток майбутніх спеціалістів. Зроблено висновок, що в країнах Європейського Союзу актуалізується проблема застосування відповідних підходів, методів, процесів та інструментів з метою забезпечення можливості формування у майбутніх спеціалістів знань, умінь і цінностей, які є складовими відповідної компетентності, що дозволяє продовжувати навчання та вдосконалюватися в процесі неперервного освітнього досвіду. Серед іншого, особлива увага приділяється організації освітнього середовища, в якому студент є активним учасником освітнього процесу, має можливості для особистісного розвитку, що реалізується шляхом використання потенціалу дослідницького, проектного, експериментального навчання в міждисциплінарному контексті тощо.

Ключові слова: майбутній фахівець, методологічні підходи, ключові компетентності, заклади вищої освіти, Європейський Союз.

Introduction

Currently, the problem of applying the competence approach to the training of specialists for various branches of the economy, in individual countries and in the international space of higher education, is relevant. Theoreticians and practitioners of the educational field, as well as managers in the field of education, make efforts to predict the demand for general and professional competencies of future specialists, based on the analysis of international educational trends, the development of the labor market, the requirements of employers, requests of society, etc. A special role is given to the formation of sustainable development of human capital, the formation of a specialist ready for the challenges of the professional environment, ready to adapt in conditions of rapid changes. The need for the formation of key competences, the mastery of which will provide an individual with the opportunity to realize himself as an individual, specialist, citizen, etc., is also obvious.

Among such key competencies is the ability of a person to continue learning throughout life, using the potential of formal, informal, informal learning.

At the same time, special attention is paid to the educational opportunities of a person, which are realized with the help of formal, informal, informal education.

The role of higher education institutions in the formation of key competencies of future specialists is the subject of many studies commissioned by the state, international educational institutions, and individual scientists.

The analysis of recent research and publications. As evidenced by the results of the analysis of scientific and pedagogical literature, the following issues are studied:

- harmonization of educational initiatives in different countries with the trends of the European Higher Education Area [9; 15];
- theories, concepts, ideas for improving the formation of key competencies [16; 20; 25];
- practical aspects of the formation of key competencies of future specialists [17; 22];
- methods and approaches to the formation of key competencies [2; 21; 26; 29];
- improvement of key competencies in the system of continuous professional development [7; 12];
- formation of key competencies as a component of professional training of a future specialist [5; 10; 11];
- information and communication technologies and their role in the professional activity of a specialist and the formation of his key competencies [23; 28], etc.

Having processed the scientific literature, we substantiate the relevance and expediency of carrying out a study devoted to the analysis of methodological approaches used for the purpose of forming key competencies.

The formulation of article purpose. The purpose of our article is to define, analyze and characterize the methodological approaches used to form the key competencies of future specialists.

Results

In 2006, the European Union developed the relevant regulatory framework used by its member countries. It is about the document "Key Competences for Lifelong Learning – European Framework: Recommendations of the European Parliament and the Council" [24]. According to this document, the main goal of the governments of European countries is as follows:

- 1) provision of primary education and training aimed at the formation of key competencies at a level sufficient for adult life, forms the basis for further training and work;
- 2) conditions are provided for training young people, taking into account factors of an educational, personal, social, cultural, economic nature, providing support for the realization of their educational potential;
- 3) providing opportunities for adults to develop and update their own key competencies throughout life, in particular for target groups in national, regional and local contexts;
- 4) infrastructure development for continuing education and training of adults, including teachers and trainers, validation and procedures for evaluating learning outcomes, ensuring equal access to lifelong learning, the labor market, support in accordance with the different needs and competences of adults;
- 5) ensuring consistency of educational services and training of adults with employment policy and social, cultural, innovation policy, through cooperation with social partners and others by stakeholders [24].

In 2018, the European Parliament developed recommendations on the formation of key competences for lifelong learning [19]. These guidelines identify eight key competencies for lifelong learning: literacy, multilingual competence, mathematical competence and competence in science, technology and engineering, digital competence, personal, social competence and competence for continuing education, civic competence, entrepreneurial competence, cultural awareness and self-expression competence [19] (see Fig. 1).

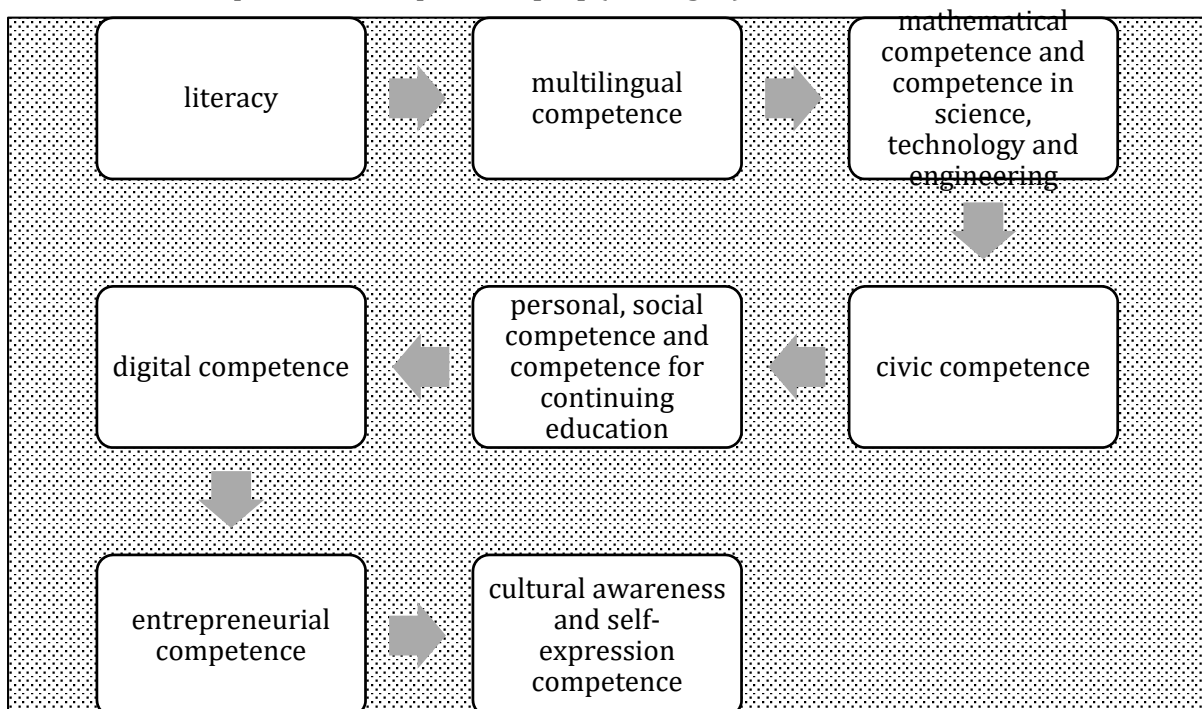


Fig. 1. Key competences for lifelong learning [19]

Let's analyze the presented infographic. As we can see from the figure, the student and his development are at the center of the educational process. Which corresponds to the student-centered approach that is popular in the organization of learning at the beginning of the 21st century. According to the work of scientists McGrath, Frohlich Hougaard, O'Shea, the development of the learner involves cooperation between various stakeholders interested in the development of education and ensuring the effectiveness of the education of citizens. It is important to emphasize that the development of the learner is realized in the academic environment of the educational institution, which is considered as an organization that learns on a continuous basis. The formation of key competences is proposed to begin at the level of secondary school [19] (see Fig. 3).

Therefore, the cooperation and support of the relevant Ministry of Education is necessary for the formation of its strategic vision and leadership in the field of education. The development of research culture, innovativeness and critical thinking is directly related to such a sphere of life of society as the system of health care and social services.

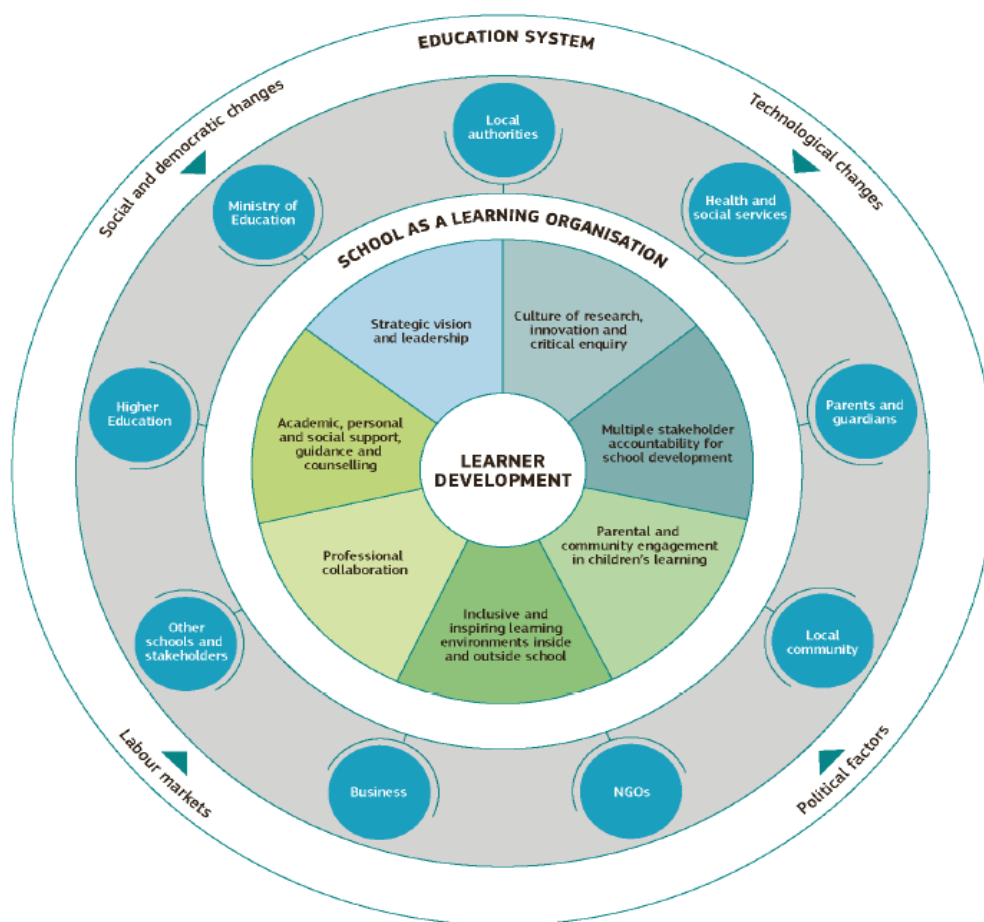


Fig. 2. Formation of key competences for lifelong learning (McGrath, Frohlich Hougaard, O'Shea, 2020)

Important importance is given to the mutual interest and promotion of the development of the educational institution on the part of various interested parties, in particular, parents and guardians, the local community, which are important in the process of involvement in the educational process in general and the development of the student in particular. It is also about using the potential of public organizations and business, which provides an opportunity to ensure the principles of inclusiveness and inspiration in the external and internal environment of the educational institution [19].

An equally important role is assigned to the problem of establishing and ensuring professional cooperation between educational institutions at the same and different levels of the country's education system, in particular, institutions of higher education capable of providing academic, personal, social support and counseling [19].

Such an organization of training, aimed at the comprehensive development of the personality of the student of education, must take into account the factors influencing the external environment in which the educational institution operates, in particular, political, social, demographic, technological, as well as economic.

Special attention in the European Union is paid to approaches to education, in particular methods (tools and processes, methods, means) used by teachers to design and shape the learning experience of students. Modern pedagogy departs from the concept of "the teacher as the only source of knowledge" and assumes the active participation of the student in his own learning. This approach substantiates the increase in motivation and the involvement of education seekers in the formation of their own educational trajectory, the formation of a sense of responsibility for the results of education.

We believe that such approaches, which are aimed at the formation of key competences for lifelong learning, should include: student-centered approach, individual approach, team approach, research approach, project approach, experimental learning approach, interdisciplinary approach, multilingual approach, approach of optimal use of digital technologies in education, an approach to using the educational environment to ensure well-being that supports the social and emotional development of learners (see Fig. 3).

We specify the student-centered approach as such, according to which the student of education actively participates in the formation of his own educational trajectory, which contributes to the development of independence, self-reflection, and self-esteem. It should be emphasized that in this process the teacher's support, providing feedback, which contributes to the formation of the relevant competencies of the student of education, is necessary. They say that it is worth using the following mechanisms and tools for ensuring a student-centered approach:

- the opportunity to learn using modern interactive methods; - academic mobility both within the state and abroad;
- the opportunity to participate in the formation of the content of education; - ensuring the formation of an individual educational trajectory at the expense of various educational programs, disciplines of the free choice of students, etc.;
- increasing the role of the library as a center of scientific and methodical sources of information;
- improvement of the evaluation system based on learning outcomes;
- stimulation of autonomy during educational activities;
- stimulation of educational and scientific activity of students of higher education.

The integration of the potential of an individual and team approach to the organization of training involves a combination of individual (autonomous and self-directed) and joint training aimed at the formation of a number of competencies, the development of socially constructed attitudes that are formed simultaneously with the acquisition of knowledge, the formation of skills and abilities. In particular, it will be useful to discuss ideas and understand the role of different perspectives in creating new opportunities, the diversity of learners, approaches to learning and differentiated learning support systems, providing targeted and individualized learning as needed. Godovanyuk notes that "the individual approach is: the principle of pedagogy, according to which, in the process of educational work with a group, the teacher interacts with individual students according to an individual model, taking into account their personal qualities; orientation to the individual characteristics of the student in communication with him; taking into account the individual characteristics of the subject of study; creation of

psychological and pedagogical conditions for the development of both all students and each one in particular" [3, p. 11].

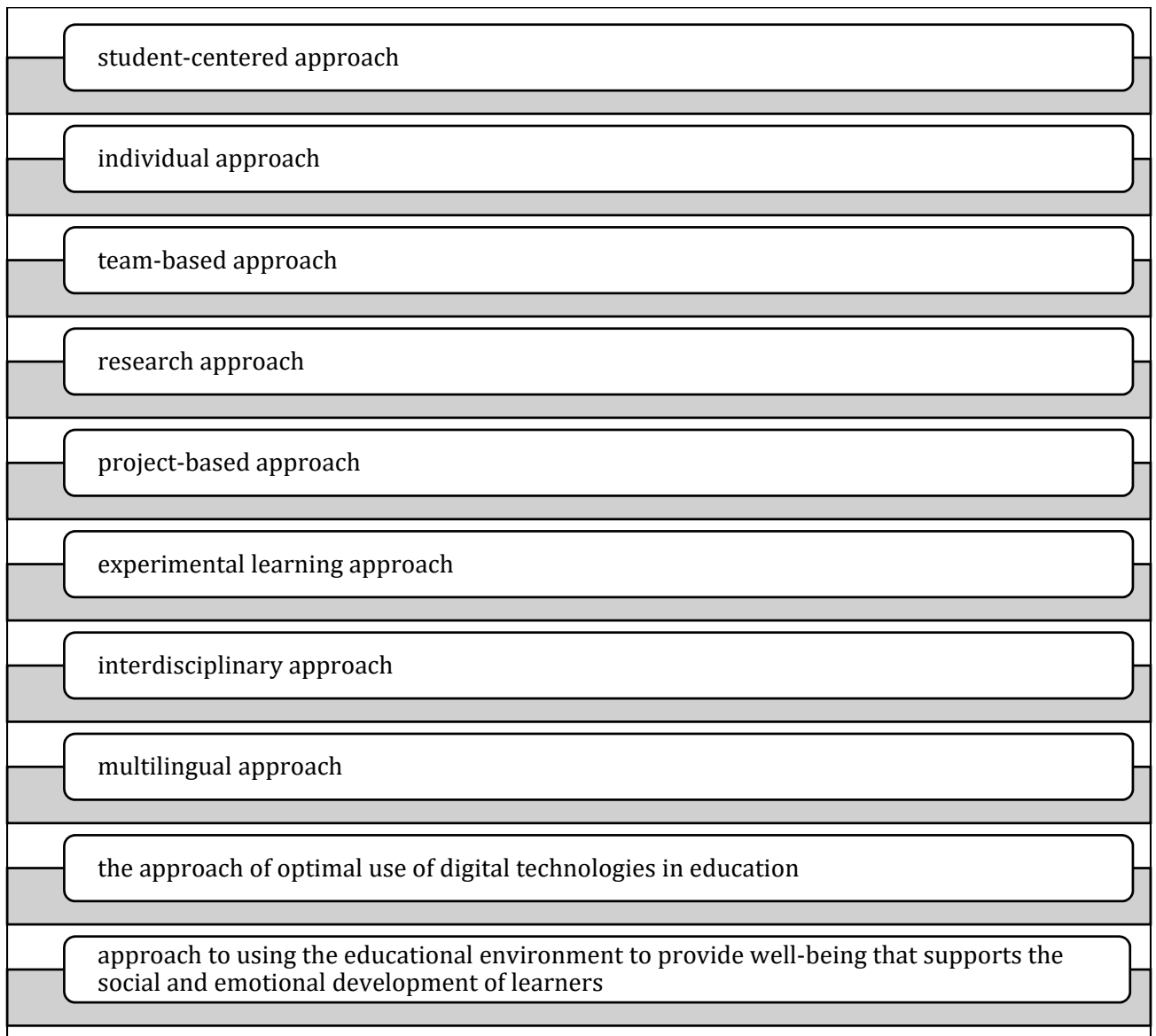


Fig. 3. Approaches to learning aimed at the formation of key competences for lifelong learning

The author further emphasizes: "Adherence to the principle of an individual approach to student education in higher education requires:

- to take into account the level of intellectual development of each student;
- to study and use in the learning process students' learning motives;
- to carry out an analysis of students' experience (both educational and life and professional);
- to take into account the level of educational, cognitive and practical independence of the student;
- to take into account the level of volitional development of an individual student;
- to provide individual assistance to students in their studies; - to combine into differentiated subgroups of students who have the same educational opportunities" [3, p. 11].

Regarding the team approach, scientists write that "among the key competencies of pedagogical activity, the competence of teamwork stands out - an integrative, dynamic, activity characteristic of the subject of professional activity, which determines the understanding of the significance and value of team activity, the ability and readiness for active productive activity in solving problems in the conditions of dialogic communication and partnership interaction with other performers on the basis of acquired knowledge of a theoretical and empirical nature about the value, significance and methods of teamwork. A team is a collective subject of activity, the essence of which is:

- the ability to act as a whole, presenting team goals and values, actions, attitudes, behavior;
- the ability of the team for self-reflection and self-knowledge, as a result of which belonging to the team, unity with it, and the image of We are formed" [14, p. 260].

A research and project approach encourages learners to use a wide range of knowledge, skills and attitudes, and involves organizing a cyclical process of design, creation, reflection and adaptation, as well as collaboration with other learners [18]. "Real-life" learning and typical scientific experiment methods are used in science, technology, engineering and mathematics to develop a range of competencies. Actually, both of these approaches, according to Povidachyk and Shtymak, aim at a number of goals: "... development of a complex of research, experimental and theoretical knowledge, skills and competences; formation of dialectical logic and scientific thinking; forming a scientific outlook and mastering the methods of scientific knowledge; formation of the professional and cultural outlook of a specialist through the integration of educational and scientific progress; creation of positive motivation and sustained interest in the specialty being studied; instilling interest in research work and awareness of its social significance; development of public speaking skills and participation in scientific discussions; modernization of professional training in the process of updating the content side of the educational standard, etc." [8, p. 6]. The same opinion is expressed by Bidyuk: "Scientific and research activities are closely related to research abilities, which can logically be qualified as individual characteristics of a person, which are subjective conditions for the successful implementation of research activities. Research abilities are manifested in the depth and strength of mastering the methods and techniques of research activity, but are not limited to them. The desire to search, the ability to evaluate its results, the ability to build one's further behavior in new conditions are important in this process. The integration of scientific and research activity into the process of professional training of masters contributes to the formation of a scientific and creative, intelligent personality, who has a high level of methodological culture, creatively possesses the methods of cognition and scientific activity, is ready to work in the field of knowledge-intensive technologies" [1, p. 114].

The approach of experimental learning allows students to combine the processes of thinking and action, to reflect on the personal at the level of the processes necessary to perform the task, combining problem solving with reflection of one's own experience. Experiential learning can involve the use of role-playing games, virtual games and experiments, etc.

Equally important is the interdisciplinary approach. In fact, interdisciplinary cooperation, interdisciplinary teaching and learning, for example through the implementation of projects, team learning and activities under the guidance of the learner, improves their level of involvement and contributes to increasing the level of learning outcomes in the context of the development of key competences. Interdisciplinary training is also a formation to strengthen the connection between different educational disciplines, which are components of the educational program, as well as to establish a strong connection between the content of education and the life of society, which ensures the actualization of educational content.

Researching the interdisciplinary approach in the educational process and the specifics of its application, scientists write that "interdisciplinary education can improve the learning of individual disciplines, and not replace them. Since then, the main task of teachers is to select

such connections between disciplines that are able to cause higher-order thinking, rejecting weak connections that can provoke cognitive dissonance. Interdisciplinary research creates a more innovative and stimulating educational environment and introduces new ways of thinking and doing, defining the knowledge and competences of each person" [6, p. 4]. The authors then summarize: "the interdisciplinary approach significantly accelerated the development of science in general. Thus, interdisciplinary sciences emerged at the border of different disciplines, for example, pedagogy as a discipline that combines all fields of knowledge about education, physical chemistry, ecology, psycholinguistics, etc. An interdisciplinary approach should be understood as a way of interaction between sciences, when knowledge is achieved only by combining the efforts of individual sciences. The interdisciplinary approach resolves the contradictions existing in the subject system of education between the separate assimilation of knowledge and the need for their synthesis, holistic and complex application in practice, in human activity and life. Epistemological dimensions of interdisciplinarity become crucial in the process of establishing new approaches in education and scientific research" [6, p. 4].

The multilingual approach deserves attention. We are talking about educational institutions that provide for the mastery of native and foreign languages, which goes beyond the study of individual academic disciplines, and on the contrary, is closely related to their use at the level of organization of the educational process, training and practice. The components of this process are the development of literacy, the study of foreign languages, the recognition of other languages that are the native languages of the students of education – members of the academic community of the educational institution. In the linguistic sense, in educational institutions, language learning is considered as a dynamic process and a continuous process of mastering the native language and its various genres and styles, which continues and is deeply connected with the study of other languages at different levels of proficiency, according to the circumstances, interests and needs of all students. We agree that "the relevance of the problem of multilingual education in general and in non-linguistic universities in particular is determined by objective conditions, the realities of life in the era of globalization. Globalization has many positive consequences, among which we, in the context of our research, note, first of all, the strengthening of linguistic and cultural interaction processes. Hence, globalization processes directly affect the system of foreign language training in higher education and cause the need for its modernization. One of its manifestations is the formulation and theoretical-methodological substantiation of a new strategic goal of foreign language training in Ukraine – the education of a multicultural professional linguistic personality, first of all, a secondary professional linguistic personality" [13, p. 18].

We consider it expedient to consider the approach of optimal use of digital technologies in education. Digital technologies can challenge and change the relationship between the teacher and the learner, as well as between the learner and the educational process and learning content. Understanding the role of both social media and the boundlessness of the Internet in this context is vital, and educational institutions and parents must be well aware of the implications of the paradigm shift currently occurring in the education industry. Educators, teachers and educational institutions can use digital technologies to support the formation of a number of competencies.

An approach to using the educational environment to provide well-being that supports the social and emotional development of learners. Educators have an important role to play, but they must be one group of stakeholders committed to supporting a wide range of learners' competencies, including their well-being and social, emotional development. All learners, including those who are disadvantaged or have special needs, need to be adequately supported in inclusive settings to realize their educational potential. Such support may include language, academic, or social-emotional support, coaching, extracurricular activities, career guidance, or

financial support. Strengthening personal, social and academic skills from an early age can become the basis for the development of other skills. Therefore, we agree with the thesis that "professional competence integrates such types of competences as: key ones related to a person's outlook, philosophy of attitude to life, skills to transform information, behave in society; basic, which is the primary basis of a certain professional activity (pedagogical, legal, medical, etc.); special competences reflect the features of specific professional positions (mathematics teacher, physical education teacher, class teacher, school director, etc.) within certain professional (pedagogical) activities" [4, p. 446].

Conclusion

So, on the basis of the analysis of scientific and pedagogical literature and the conducted research, we conclude that special attention is paid in the European Union to approaches to learning, in particular methods (tools and processes, methods, means) used by teachers to design and form the learning experience of students in the institutions of higher education. These approaches aimed at the formation of key competencies should include: student-centered approach, individual approach, team approach, research approach, project approach, experimental learning approach, interdisciplinary approach, multilingual approach, approach of optimal use of digital technologies in education, approach regarding the use of educational a well-being environment that supports the social and emotional development of future specialists. The analysis and characteristic of the defined approaches has been provided.

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