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**Наукові інтереси:** творчий потенціал студента-хореографа та особливості його формування у процесі професійної підготовки.

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**Наукові інтереси:** професійна підготовка майбутніх хореографів у контексті інноваційної мистецької освіти.

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**ОСОБЛИВОСТІ РОЗВИТКУ ОСВІТИ ВПРОДОВЖ ЖИТТЯ В УКРАЇНІ ТА В НІМЕЧЧИНІ: ПЕРСПЕКТИВНІ НАПРЯМКИ ЕКСТРАПОЛЯЦІЇ В УКРАЇНСЬКИЙ ОСВІТНІЙ ТА НАУКОВИЙ ПРОСТІР**

*У статті висвітлено особливості розвитку освіти із часів проголошення незалежності України. Обґрунтовано важливість освіти впродовж життя у сучасному VUCA-світі з огляду на документи міжнародних організацій (ОЕСР, ЮНЕСКО, Рада Європи). Проаналізовано праці провідних українських та зарубіжних науковців, присвячені розвитку освіти впродовж життя, зокрема в Україні та в Німеччині. Виокремлено перспективні напрямки екстраполяції в український освітній та науковий простір. Запропоновано запровадження національної програми для дошкільнят для популяризації STEM-освіти (розвиток дошкільної освіти); надання автономії в розробці навчальних планів, програм, підручників обласним управлінням освіти за прикладом Німеччини в межах децентралізації шкільної освіти (шкільна освіта); продовження участі у міжнародних програмах оцінювання освітніх досягнень учнів «PISA» та «TALIS» (розвиток шкільної освіти). Наголошено на важливості впровадження практичної роботи на підприємстві та виробництві упродовж трьох-чотирьох днів на тиждень у поєднанні з теоретичною професійною підготовкою протягом одного-двох днів на тиждень могло б сприяти розвитку дуальної освіти (розвиток професійної освіти). Обґрунтовано важливість організації ефективної співпраці науки та бізнесу, створення спрощених умов для вступу до закладів вищої освіти висококваліфікованим працівникам, які мають досвід роботи та потребують освіти (розвиток вищої освіти). Запропоновано урахування прогресивного досвіду Кельнського університету (Німеччина) у наданні можливості здобувачам наукового ступеня виконувати дисертаційне дослідження під подвійним науковим керівництвом (розвиток науки). Проаналізовано перспективи розширення можливостей здобуття наукового ступеня за традиційним «індивідуальним планом здобуття докторського ступеня», «структурованим планом здобуття докторського ступеня» у межах програми із урахуванням прогресивного досвіду Вільного університету Берліна.*

**Ключові слова:** освіта впродовж життя, неперервна освіта, безперервний професійний розвиток, освіта в Україні, освіта в Німеччині, перспективні напрямки екстраполяції, український освітній та науковий простір.

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**THE PECULIARITIES OF LIFELONG LEARNING DEVELOPMENT IN UKRAINE AND IN GERMANY: PROMISING AREAS FOREXTRAPOLATION INTO THE UKRAINIAN EDUCATIONAL AND ACADEMIC SPACE**

*The article examines the development of education since Ukraine declared its independence. The importance of lifelong learning in today's VUCA world has been substantiated on the basis of the documents issued by international organisations (OECD, UNESCO, Council of Europe). The works of the leading Ukrainian and international scholars on the development of lifelong learning, particularly in Ukraine*

and Germany, have been analysed. Promising areas for application within the Ukrainian educational and scientific sectors have been identified. It has been proposed to introduce a national programme for pre-school children to promote STEM education (the development of pre-school education); granting autonomy to regional education authorities in the development of curricula, programmes and textbooks, following the German model, as part of the decentralisation of school education (the development of school education); continuing participation in the international student assessment programmes “PISA” and “TALIS” (the development of school education). It has been emphasised that introducing practical work at a company or in a production setting for three to four days a week, combined with theoretical vocational training for one to two days a week, could contribute to the development of dual education (the development of vocational education). The importance of fostering effective collaboration between academia and industry, and of creating simplified entry requirements for highly qualified professionals with work experience who require further education, is highlighted (the development of higher education). It is recommended to take into account the innovative approach adopted by the University of Cologne (Germany) in enabling doctoral candidates to conduct their dissertation research under dual supervision (the development of science). The article analyses the prospects for expanding opportunities to obtain a doctoral degree through the traditional “individual doctoral programme” and the “structured doctoral programme” within the framework of the programme, drawing on the progressive experience of the Free University of Berlin.

**Key words:** *lifelong learning, lifelong education, continuing professional development, education in Ukraine, education in Germany, perspective directions of extrapolation, the Ukrainian educational and academic space.*

**General problem statement and its connection with important scientific or practical tasks.** Ukraine is in the process of reforming its education system since declaring independence and is striving to integrate into the European and global education communities. In this regard, there is a growing need to research the development of lifelong learning in progressive countries around the world and the potential for its implementation within the Ukrainian education system. Their research indicates that the pace of industrial development and its competitiveness on the global market are directly dependent on the level of professional development of human resources. For this reason, the idea of “lifelong learning” forms the basis for the development of the education sector in these countries. The significance of this issue is highlighted in the documents of international organisations, notably the Organisation for Economic Co-operation and Development (OECD), UNESCO and the Council of Europe, which encourage the provision of lifelong learning opportunities. Furthermore, the development of lifelong learning is one of the pathways to social and economic growth and a means of promoting the principles of the information society.

**Literature Review.** The relevance of the subject under study has prompted the analysis of the concept of lifelong learning in terms of its essential and logically-historical aspects.

The analysis of Ukrainian psychological and educational literature shows that researchers examine the issue of lifelong learning within the context of dynamic processes of globalization, internationalization, transformation, digitalization and gadgetization.

The development of lifelong learning is being actively researched by the prominent Ukrainian scholars including E. Chernyshova, T. Desiatov, R. Gurevych, A. Kolomiets, L. Lukianova, N. Nychkalo, V. Oliynyk, L. Pukhovska, L. Sihaieva, M. Soldatenko, S. Sysoeieva, T. Sorochan, I. Ziazun, and others.

Moreover, the leading scientists from the German-speaking countries of Europe have been actively studying the peculiarities of lifelong learning development in their countries: P. Alheit, U. Banscherus, B. Dausien, A. Dehmel, O. Dömer, K. Ebner, E. Gornik, A. Hartung-Griemberg, M. Heusinger, E. Hruber, K. Kraus, A. Ledl, B. Müller, D. Nittel, C. Stöckler-Penz, A. Wiesel, S. Wißhak, A. Wolter.

**Identification of previously unresolved parts of the general problem.** However, having analyzed the research of the above mentioned scientists from Ukraine and from the German-speaking countries of Europe we can conclude that in Ukraine, the issue of practical implementation of lifelong learning is under-researched, and so it has become necessary to draw on the experience

of progressive European countries, in particular, Germany, and find the perspective directions of extrapolation in the Ukrainian scientific and educational space.

We strongly believe that the creation of a highly educated society will contribute to the advancement of all areas of life, Ukraine’s active participation in the processes of globalisation, internationalization, transformation, digitalisation, and gadgetization. Besides, it will boost the country’s competitiveness on the international arena in the time of uncertainty and instability and ensure the development of an innovative knowledge-based economy.

**Formulation of the article’s goal (task statement).** Therefore the aim of this article is to analyze the research of the prominent Ukrainian and foreign scholars devoted to the development of lifelong learning, identify the prerequisites and analyze the development of lifelong learning in Ukraine and in Germany and based on the research results find the most perspective directions of extrapolation into the Ukrainian educational and scientific space.

**Presentation of the main material of the research.** The challenges of our time have necessitated a review of the structural framework of the lifelong learning system in Ukraine. According to L. Sihaieva, this system encompasses pre-school institutions (up to the age of 7), secondary general education schools, boarding schools of I–II accreditation levels (up to the age of 18), higher education institutions of I–IV accreditation levels, including universities, academies, institutes, conservatoires, national music academies, colleges, technical colleges, vocational and technical educational institutions (up to the age of 23), master’s programmes, postgraduate programmes, doctoral programmes, professional development courses, second specialisations, retraining, internships and self-education [1; p. 100]. The researcher considers the creation of a learning society to be the goal of the global community [1; p. 101].

The prominent Ukrainian academician I. Ziazun regards lifelong learning as the foundation of social progress and identifies the trends that have made it necessary to replace the concept “education for life” with the concept of “education throughout life”, namely:

- the dynamism of modern civilisation;
- the strengthening of the individual’s role in the society and the workplace, and the growth of their needs;
- the humanisation and democratisation of social relations;
- the intellectualisation of labour, and rapid changes in techniques and technologies” [2; p. 15].

Besides, I. Ziaziun outlines the following characteristics of lifelong learning: continuity within the organisational structure; the content-related aspect of lifelong learning – its multi-level nature, its complementary character (the “dynamic forward movement” of the individual within the professional educational sphere), and its transformative potential (the individual’s ability to change their professional profile) [2].

R. Gurevych and A. Kolomiets consider the motivational factors underlying teachers’ lifelong learning [3]. They have also analysed the characteristics of the development of teachers’ information literacy in the context of lifelong learning [4].

At the same time, the experience of recent years allows us to refine and expand the list mentioned above. In our view, given the changes that have taken place in recent years, the following factors should also be highlighted:

1. the instability, uncertainty, complexity and ambiguity of the situation that has arisen in the VUCA world [5];

2. the importance of lifelong learning in the context of globalisation in education (easier access to learning materials and online courses from the world’s leading educational institutions, the need for foreign language skills, the scaling of educational products), an awareness of the need to localise physical educational infrastructure in the context of the crisis caused by the Covid-19 pandemic, which is driving the development of various aspects of continuous education at the local level;

3. the importance of promoting the socialisation of those involved in the educational process and fostering in them a positive motivation for lifelong learning;

4. supporting career guidance and future career development by offering the opportunity to try out different fields and, if necessary, change career direction through participation in courses available both online and offline;

5. the importance of the interaction and complementarity of formal, non-formal and informal education;

6. a tendency towards the depreciation of knowledge and a change of profession every five years throughout a person’s life [6].

N. Nychkalo considers lifelong learning to be a global trend [7; p. 5]. In examining current trends and challenges in continuing professional education, the researcher highlights the importance of finding innovative ways to establish new partnerships between the education sector and the world of employment. The author emphasizes the necessity of flexibility in the development and updating of educational plans and programmes in view of current trends in the development of lifelong learning, and the importance of identifying ways to implement virtual programmes in relation to rapid changes in the workplace. N. Nychkalo also highlights the relevance of psychological and pedagogical career preparation and the importance of psychological and pedagogical counselling for different categories of the population [8; pp. 10–12].

Analyzing the genesis of lifelong learning, L. Sihaeva identifies three strands of its development: lifelong learning has existed for as long as human society has; lifelong learning is driven by active processes of development in various spheres of society (spiritual, social, industrial, scientific and technical); the third direction is motivated by the fact that lifelong learning, as

a pedagogical category, has existed for a long time, yet its theoretical justification and practical implementation are actively being carried out in the modern context.

V. Oliinyk regards lifelong learning as a natural, progressive process of passing on accumulated knowledge and skills from one generation to the next, and of advancing knowledge and experience from one level of education to the next [9].

M. Soldatenko considers the continuity of education and the ability to acquire new knowledge independently to be an important component of the process of improving professional training. The researcher emphasises the importance of lifelong learning as a means of professional development and growth for specialists in the context of an information and technology-driven society [10; p. 188].

O. Sytnikov justifies the need to develop models for the continuing professional development of teaching staff’s competence in the era of post-industrial society and the rapid “obsolescence” of knowledge [11; p. 141]. The researcher identifies the following models of continuing education: liberal (supporters of this model include R. Steiner, F. Kumbé, G. Silberman, V. Bibler); developmental (developers: V. Davydov, S. Maksymenko, B. Gershunsky, A. Verbytsky); activating (M. Skatkin, V. Bondar, V. Molyako, V. Morgun); formative (P. Galperin, N. Talizina, N. Kolominsky, Yu. Gilbukh); enriching (M. Kholodna, E. Gelfan); rational (B. Bloom, R. Gagne, B. Skinner); phenomenological (R. Burns, C. Rogers) [11; pp. 136–137].

L. Pukhovska points out, that lifelong learning meets the needs of the information society and transforms a static education system into a constantly changing one [12; p. 78].

Besides, in order to identify areas requiring consolidation, systematisation and implementation into the Ukrainian educational and scientific space, we have analyzed the works of the leading scholars from the German-speaking countries of Europe.

The German researcher A. Wiesel highlights the important role of lifelong learning in the professional world, identifies national and international competency models for lifelong learning, and emphasizes the relevance of the “21st-century skills” and “21st century digital skills” [13; pp. 5–7], drawing on documents from the Council of the European Union (German: “Rat der Europäischen Union”), and identifies eight lifelong learning competences (published in 2006, updated in 2018), namely: “multilingual competence” (German: “Mehrsprachenkompetenz”); “mathematical competence” (German: “mathematische Kompetenz”); “competence in natural sciences, computer science and technology” (German: “Kompetenz in Naturwissenschaft, Informatik und Technik” (“MINT-Kompetenz”)); “digital competence” (German: “digitale Kompetenz”); “personal, social and learning competence” (German: “persönliche, soziale und Lernkompetenz”); “civic competence” (German: “Bürgerkompetenz”); “entrepreneurial competence” (German: “unternehmerische Kompetenz”); “cultural awareness and cultural expression” (German: “Kulturbewusstsein und kulturelle Ausdrucksfähigkeit”) [13; pp. 7–8].

The German scholars P. Alheit and B. Dausien examine the educational processes that are ongoing throughout a person’s life in the context of lifelong learning, highlighting the contradiction inherent in lifelong learning, which stems from economic efficiency

and the expansion of individual opportunities, and critically analyse the social conditions of lifelong learning [14].

A. Hartung-Griemberg links the improvement of the adult education system to the development of the following media competences: “functional knowledge” (German: “Funktionswissen”), “structural knowledge” (German: “Strukturwissen”), “the ability to evaluate media” (German: “Medienbewertung”), “the ability to critique media” (German: “Medienkritik”), emphasising the need to implement measures aimed at developing the above-mentioned media competences in adulthood. The researcher clearly distinguishes the concept of “adult” (German: “Erwachsener”), emphasising the differences between those who are not yet adults and are merely planning this stage of life, and those who are formally already in this phase of life [15; pp. 166–167].

E. Hruher considers adult education to be a key concept of lifelong learning and emphasises the importance of applying pedagogical principles to all areas of an individual’s life [16; p. 6], the need to motivate people to pursue education, and the development and exploration of new forms of learning that are closely linked to leisure time and the enjoyment of the process. The researcher suggests that ideas about the usefulness and effectiveness of learning should be replaced by “softer forms of learning” (German: “weichere Lernformen”) and the sphere of so-called “non-learning” (German: “Nicht-Lernens”), that is, learning in a free-form manner that is independent of external conditions [17; p. 11].

A. Wolter and U. Banscherus view lifelong learning as a strategy for active labour market policy, characterised by the revitalisation of knowledge and the need for further training to ensure professional qualifications and employment. Compensating for social inequality in educational opportunities is viewed by researchers as one of the goals of continuing education. Lifelong learning is considered to be an epiphenomenon of the progressive individualisation of social relations, a means of developing identity and personality, as well as an opportunity to revise one’s original career choice and reshape one’s professional biography. Scholars view globalisation as a flow of information and channels of communication that facilitate lifelong learning, as a component of the global network [18; pp. 64–65].

Therefore, the analysis of the works of the leading Ukrainian and foreign scholars has made it possible to identify the essence of lifelong learning. We view this concept as “a process of cognition and acquisition by the individual of knowledge, skills, abilities, experience and the development of personal qualities necessary for achieving personal and professional success, which takes place throughout life using various forms of learning”. Based on the principles of scientific research – genetic, logical, historical and essential analysis – the origins of lifelong learning, its emergence, formation and development have been outlined.

In the course of our research into the development of lifelong learning in Germany, we have identified some promising ideas which, if implemented, could contribute to the successful development of education and science in Ukraine, the formation of a system of lifelong learning in Ukraine, and the integration of our country into the European and global educational landscape.

Our research into formal education in Germany has identified innovative ideas whose implementation could

contribute to the development of pre-school, school, vocational and higher education, as well as to the improvement of training for “Philosophy Doctors” and “Doctor of Science” degrees, the effective learning of foreign languages by Ukrainian citizens of various age groups, the creation of a positive image of Ukrainian education abroad and the attraction of talented young people from around the world to study in Ukraine, the promotion of scientific research in Ukraine, the development of science, the establishment of partnerships between science, society and business, and the internationalisation of Ukrainian science in general.

For example, the introduction of a compulsory national programme for pre-school children aimed at promoting STEM education (S – science, T – technology, E – engineering, M – mathematics) [19], following the example of the ‘House of Little Researchers’ (German: ‘Haus der kleinen Forscher’) charitable foundation [20] could contribute to the development of pre-school education in Ukraine. The result would be an improvement in the quality of pre-school education in Ukraine.

In the short-term, the implementation of this initiative involves developing a curriculum, preparing and publishing teaching materials on this subject, and training highly qualified specialists at universities or on specialist courses. In view of this, it is important for the state to take the initiative at the level of the Ministry of Education and Science of Ukraine and to allocate the necessary funding.

In the medium term, it might be appropriate to prepare and submit applications for grant funding for a compulsory national programme for pre-school children, aimed at promoting STEM education, to the embassy of Germany and to the “House of Little Researchers” (German: ‘Haus der kleinen Forscher’) charitable foundation [20]. In addition, it might be useful to establish charitable foundations in Ukraine and engage domestic sponsors and patrons who could support the implementation of this project.

Moreover, it would be appropriate to introduce a compulsory national programme for pre-school children aimed at promoting STEM education by first conducting a pilot scheme in one or more nurseries. For example, in Kyiv, the “KITA Children’s Club at the German School” (German: “Kindertagestätte der Deutschen Schule Kiew”) caters for children aged 1.5 to 6 years; the programme here focuses on learning through emotions, joy and play [21]. Subsequently, after analysing the results of the experiment and taking into account all the advantages and disadvantages, it would be advisable to extend this approach to all pre-school educational institutions in our country.

The relevance of applying the above-mentioned approach to Ukraine’s education system is discussed in studies by leading Ukrainian and foreign researchers. For instance, the American scholar Lilian G. Katz examines the challenges faced by teachers of STEM subjects to young children and outlines the potential of the “Project Approach” in achieving the goals of STEM education [22]. The German researcher Stefan Aufenanger emphasises the importance of preparing pupils for life in a digital society, in which they can act competently, socially and responsibly. In the author’s view, the popularisation and further promotion of STEM disciplines is not only a social challenge but also an educational one [23]. Furthermore, the OECD report “Education at a Glance 2017” (German: “Bildung auf einen Blick 2017”)

highlights the importance of science and mathematics for the economy [24].

Besides, it is important to take into account the positive experience of Germany regarding the length of time children spend in pre-school settings, with a view to creating conditions that meet parents' needs whilst taking their personal circumstances into account. It is also important to create favourable conditions for the development of children's individual characteristics and abilities, and for their participation in exploratory activities.

In our view, the implementation of this approach is achievable in the short term, whilst it is important to continue improving Ukraine's pre-school education system in the medium and long term.

Granting regional education authorities autonomy in developing curricula, programmes and textbooks – following the German model as part of decentralisation – could help to take into account the specific characteristics and educational needs of each region of Ukraine, the local labour market, and forecasts regarding the supply of skilled and unskilled workers. The implementation of the above approach could be realised in the short term perspective.

Moreover, continuation of participation in the Programme for International Student Assessment (PISA) (Programme for International Student Assessment) [25] and participation in other international educational rankings: "TALIS" (Teaching and Learning International Survey) [26] will make it possible to assess the standard of education in Ukraine against international criteria, compare the achievements of Ukrainian schoolchildren with those of pupils in other countries, and identify strategic objectives for improving the domestic education system to create a competitive educational environment. The implementation of the above-mentioned direction is achievable in the short term perspective.

The development of vocational education could be facilitated through the introduction of practical work at enterprises and in production facilities for three to four days a week, combined with theoretical vocational training for one to two days a week; this could contribute to the development of dual vocational education in Ukraine. This would bring education closer to the demands of the labour market and optimise its content to reflect the needs and requirements of employers. To effectively implement the above approach, it would be advisable to consider offering tax incentives and preferential treatment to those enterprises that enable students to apply the theoretical knowledge acquired during their studies in practical work [27].

As a result of the successful development of dual vocational education in Ukraine, educational institutions could optimise their curricula, which would in turn facilitate effective career guidance and the recruitment of new students. In turn, students could acquire in-depth knowledge that meets contemporary requirements during their studies and apply it immediately whilst working at a company, which would help boost their motivation for learning and cognitive activities. Furthermore, this would allow students to prove themselves in the workplace and speed up their search for their first job.

Drawing on the experience of the dual education system will improve the vocational training of future professionals in Ukraine by integrating theory and practice. In our view, it is possible to begin implementing this approach in the short term.

The development of higher education could be facilitated by the design and implementation of a support system for universities that engage in innovation and provide high-quality educational services, which involves fostering effective collaboration between academia and industry. Furthermore, it is important to establish links between universities and schools, as well as businesses that are potential employers. Implementation of the above measures could begin in the short term, although full implementation is feasible in the medium or even long term.

Furthermore, it is important to create simplified conditions for highly qualified professionals with work experience who require further education to gain entry to higher education institutions (as exemplified by the German model, enshrined in the concept of lifelong learning), which will help to create new opportunities for further education. Implementing the above-mentioned approach within the Ukrainian education system will ensure the creation of a programme to attract highly qualified workers from various sectors to pursue education, thereby expanding the pool of people who can access higher education. In our view, it would be advisable to begin work on implementing this approach in the short term.

Allowing doctoral candidates to conduct their dissertation research under dual supervision (as exemplified by the University of Cologne) [28] could contribute to the advancement of science, as well as promote academic mobility and effective international scientific communication. Furthermore, this will enable the candidate to familiarise themselves with the experience and working styles of two academic supervisors. Conducting dissertation research under dual academic supervision will facilitate joint interdisciplinary research, foster cooperation between domestic and foreign universities, and attract additional grant funding.

In our opinion, it would be advisable to enshrine in law the provision of opportunities for doctoral candidates to conduct their dissertation research under dual supervision. The implementation of the above-mentioned approach is achievable in the short term.

Expanding possibilities for obtaining a doctoral degree through the traditional "individual doctorate" and "structured doctorate" programmes (based on the experience of the Free University of Berlin) [29] and in the workplace will allow for the individual abilities and potential of each specific doctoral candidate to be taken into account. Enshrining such approaches in legislation will help to ensure that the theoretical, practical and applied aspects of research will be considered.

Implementing the above approach could help align the topics of doctoral research with the needs of the real economy, facilitate the funding of relevant research from corporate budgets, and foster links between academia, business and the state.

It would be reasonable to start implementing this direction in the short term, with implementation continuing in the medium and long term [30, pp. 181-182].

**Conclusions.** In the course of our research we have studied Ukrainian and foreign scientific sources on the theoretical and empirical achievements in the development of lifelong learning in Ukraine and in Germany, which has enabled us to systemise and summarise the effective directions in this field. As a result of our research, we have identified promising areas for

extrapolating innovative ideas for the development of lifelong learning in Germany into Ukraine's system of formal education. These improvements apply to all educational structures, particularly pre-school education: the introduction of a national programme for pre-school children to promote STEM education. Ensuring the effective development of school education involves granting regional education authorities autonomy in the development of curricula, programmes and textbooks, following the German model within the framework of decentralisation. This could help to account for the specific characteristics and educational needs of each region of Ukraine, the local labour market, and forecasts regarding the supply of skilled and unskilled workers. The introduction of dual learning is also one of the key issues for the Ukrainian education system, especially in the field of vocational education. To strengthen the development of higher education, it is valuable to apply the principles of internationalisation of Ukraine's education sector, academic mobility, and the development of a higher education system based on innovation. The research emphasises the improvement of scientific development, specifically the possibility of conducting dissertation research according to an individual plan, a structured plan, and in the workplace.

The integration of the above-mentioned innovative ideas into Ukraine's education system will contribute to the establishment of an effective national formal education system and its further development, drawing on the innovative experience of Germany.

**Further prospects for research in this direction.**

Obviously, this research does not cover every aspect of the development of lifelong learning. We consider it appropriate to include the following among promising areas for future research: the development of lifelong learning in the countries of European Union and the leading countries of the world and finding perspective directions of extrapolation into the Ukrainian educational and scientific space; the use of the latest technologies in lifelong learning; research into the activities of organisations in Ukraine that promote the development of lifelong learning.

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