

The adult education in nonlinear world: non-formal education in the system of postgraduate education of the Ukrainian open university

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Abstract. In the context of reforming the Ukrainian educational system and integration of Ukraine into the European educational space, the need for the development and implementation of modern approaches to the organization of educational institutions of different levels is actualizing. Thus, the need for a new philosophy of education is growing, namely, distance education in the context of the coronavirus disease 2019 (COVID-19) is gaining the most urgent importance. Revealed the activities of the Ukrainian Open University of Postgraduate Education "UOUPE", as the first in Ukraine self-governing (autonomous) educational institution such as a distributed university appointed in response to these acute social challenges. The project of interregional cooperation for the professional development of pedagogical workers is developed and opened based on the design-transforming nonlinear paradigm and reflexive-positional approach, as a challenge to solve current problems in the system of professional development of pedagogical workers, creating modern conditions for the rapid development of non-formal education. The interregional cooperation project is presented as a form of social interaction based on openness, accessibility, horizontal connections, and attitudes, during which a community of progressive educators able to respond to modern challenges and radically change educational approaches to their own learning and professional mission is formed.

Education as a phenomenon of social development and a means which is the result of the scientific, informational, and technical evolution of mankind at the same time in the context of the coronavirus disease 2019 (COVID-19) experiences and initiates revolutionary upheavals caused by systemic changes in styles of thinking, guiding paradigmatic attitudes, forms and methods of teaching, educational needs for people of different ages.

The need for a new philosophy of education is growing. A transitional stage from an order that has functioned for a long time to a certain disorder (chaos), and then from it again to a new order, caused the unpredictable effect of many little-studied processes, in particular, the destruction of most of the "old" structures and the emergence and development of completely new, developing according to the laws of self-organization.

We are witnessing how modern society is losing the properties of stability, balance and stability demonstrates nonlinear tendencies in conditions when virtual reality becomes a space of socialization of an individual [1]. Global change is evolving at an extraordinary rate, so traditional strategies for building educational activities do not meet the challenges of such a contradictory time. In order to respond effectively and in a timely manner to changes in society, we need new knowledge, new theoretical attitudes, and ideas, a new modern

methodology of education, that would correspond in a complex to the level of modern human development.

The purpose of the research is to reveal the principles of non-formal education in the system of the Ukrainian Open University of Postgraduate Education. The task of the research is to develop a project of interregional cooperation for professional development of pedagogical workers on the basis of project-transforming nonlinear paradigm and reflexive-positional approach.

The general nature and dynamism of nonlinear worldviews are faced in the duel with the traditional thinking of most educators who continue to profess a linear approach, in particular, in the system of postgraduate education [2]. Since the need for nonlinear methodological attitudes depends on the level of development and goals of cognition, and with the discovery of complex and evolutionarily unstable systems the general scientific nature of the nonlinear educational paradigm is realized, thus "the general nature and dynamics of nonlinear worldview in modern science are associated primarily with the theory of self-organization and based on this worldview" [3].

The philosophical basis and prerequisite for nonlinear processes in education is a synergetic approach, developed on the basis of the term "synergetics" proposed by the German physicist G. Haken (from the ancient Greek - "joint action"). Thus, we proceed from the fact that the development of modern non-formal adult

education is based on a synergetic approach and, according to research by O. V. Vozniuk [4], is characterized by the following manifestations:

- the pedagogical system itself chooses the path of its development;
- "open", "distance" type of lifelong learning, which includes the following components: the transfer of knowledge, skills, abilities, the formation of human relations to the world, finding meaning, self-expression and social creativity;
- learning and education appear as a whole, the elements of which can be divided only in the theoretical approximation;
- the main purpose of the education system – the free and comprehensive development of the individual;
- resonances, uncertainty, randomness, chaos can be a source of formation of new relatively deterministic structures.

The application of the ideas of the synergetic paradigm of education to the organization of the system of distance education helps, in our opinion, to better understand modern transformations and reveal new facets in the dialectic of the educational process.

George Siemens [5], as the founder of the theory of connectivism, expressed the idea that learning in the modern world should change significantly because the old theories (behaviorism, cognitivism, constructivism) were developed in the "pre-technological" era, therefore, in the modern world, many students will move in different, possibly interconnected, fields of knowledge throughout their lives.

Non-formal learning is an important aspect of our experience, and formal education does not include all learning experiences due to a number of factors:

- as a rule, learning now takes various forms through communities of practice and personal connections;
- learning is a continuous process that lasts a lifetime;
- study, activity and work are no longer separate concepts, now they are interconnected;
- the increased attention to knowledge management emphasizes the need for theory to explain the relationship between individual and organizational learning;
- many processes, especially in the field of cognitive information processing, can now be unloaded or supported by technologies;
- "know-how" and "know-what" are now supplemented by the concept of "know-where" (understanding where to find the necessary knowledge) [6].

In particular, these theses are the basis of distance education, where each teacher has the opportunity to access advanced training courses, study remotely in a convenient place and at a convenient time.

The pedagogical research under consideration is carried out within the framework of research work of the Department of Philosophy and Adult Education of the Central Institute of Postgraduate Education (CIPE) of the State Institution of Higher Education "University of Educational Management" (SIHE "UEM") of the National Academy of Pedagogical Sciences of Ukraine.

A number of methods were used in the study. This

corresponds to the purpose and solution of the research objectives, namely:

- the theoretical: analysis and synthesis - for the purpose of complex study of organizational and managerial, psychological and pedagogical, scientific and methodological factors of professional development of teachers as consumers of educational services in an open university; content analysis of legal documents in the field of adult education, continuing pedagogical education, educational and scientific-methodological support of professional development of teachers as consumers of educational services; SWOT-analysis of existing systems of professional development of teachers as consumers of educational services, clarification of positive and negative aspects of non-formal education, achievements and shortcomings in the learning environment; formalization and generalization - for systematization and formulation of conclusions, determination of directions of further scientific researches;
- the empirical: psychological and pedagogical diagnostics (formalized and informal conversation, interview, survey, questionnaire, testing, entrance, computer diagnosis, self-assessment, etc.);
- experimental (comprehensive monitoring of professional development of teachers as consumers of educational services in an open university);
- methods of mathematical and statistical analysis - to process and summarize the results, determine the probability and reliability of quantitative and qualitative indicators to identify the dynamics of professional development of teachers as consumers of educational services in an open university. Tables, diagrams with the help of MS Excel, Pedagogical Statistics, Statistica 6.0 have been developed for statistical automatic data processing.

What, in our opinion, is the main limitation of traditional approaches to adult learning? Despite the fact that at the theoretical and declarative level the andragogical model of adult learning has been developed and implemented for several decades, at the level of practical implementation, the approach of information cramming continues to dominate, without identifying and taking into account the practical needs of adults. In addition, the "trend of waiting" continues to operate. Unfortunately, the vast majority of teachers "such kind-hearted" instructions from any institution and, preferably, for absolutely all manifestations in the real educational process. Therefore, a kind of breaking of traditions in the education system is on time. It is clear that this is one of the most difficult tasks of adult education, after all, traditions in it - as a constant phenomenon – present a generalized experience, customs, views, tastes, norms, etc., that formed historically during the entire previous socio-cultural era, transferred by teachers of the classroom system from generation to generation, contributed to the formation of established views and beliefs, developed to the level of "unwritten laws".

In response to the mentioned above social challenges, the Ukrainian Open University of Postgraduate Education (hereinafter "UOUPE") is the first self-governing (autonomous) educational institution type of a distributed

university in Ukraine [7]. Nowadays, the relevant and demanded by the pedagogical community purpose is opening the possibility of having access to refresher courses for those who wish to learn remotely in a convenient place and at a convenient time.

The University, on the basis of interaction of formal, non-formal, and informal education, provides:

- bringing the content of postgraduate and adult education in line with European educational standards and digitalization of society;

- modernization of educational infrastructure;

- development of educational and methodological support for the activities of postgraduate education institutions;

- introduction of innovative approaches to the continuous development of the specialist's personality [7].

Since the general nature and dynamism of nonlinear worldview in modern education involves primarily self-organization and the corresponding worldview of the individual, the university is based on approaches that together form a modern educational platform for adults.

In particular: the university has the resources to serve an unlimited number of students regardless of their place of residence; virtual departments accumulate participation in the educational process of scientists and practitioners of different fields of knowledge, different educational institutions; distance learning is accessible to all and provided with modern information support; personal account allows anyone to become a registered listener and choose a personal training profile; the student can monitor the process of their own development in the educational environment, has the opportunity to use innovative author's electronic resources developed by teachers and scientists of university departments; continuous development of professional competencies is provided.

In addition, the university offers a wide range of formats of distance learning materials: text materials, video and audio materials, presentations, Internet conferences, webinars, trainings, etc.; supports open learning on the basis of unique methods developed by teachers of virtual departments, based on the principle of mandatory consideration of personal needs of students and organizational conditions of their learning.

Joining the solution of current problems in the system of professional development of teachers and the creation of modern conditions for the rapid development of non-formal education "UOUPE" and the introduction of transformational processes in the aspect of non-formal education, we have developed a project of interregional cooperation for professional development of teachers. paradigm and reflexive-positional approach.

The originality and innovation of the project are presented by the mission, content, structure and proposed educational forms. The project differs significantly from the previously proposed, in particular the following positions:

- in the process of project implementation various models of constructing modern content, methods of work, direct modeling of new forms in the field of education in general are demonstrated;

- education within the system of non-formal

education "UOUPE" is aimed not only at informing adults about modern innovations, but at the implementation of activity-personal model of professional development of the individual, which has defined and chosen its own trajectory of development;

- as a result, the system of non-formal education "UOUPE" contributes to the solution of educational and professional tasks of educators;

- the content in non-formal education "UOUPE" is not linearly developed and logically embedded in the courses, but is represented by a nonlinear trajectory of the complex of modern knowledge, taking into account the diversity of social challenges, educational and professional trends.

The project of interregional cooperation is developed as a form of social interaction based on openness, accessibility, horizontal connections, and attitudes, during which a community of progressive educators able to respond to modern challenges and radically change educational approaches to their own learning and professional mission is formed. The project is implemented on the basis of effective communication processes, diversification of educational activities, community design, coordinated teamwork. Designing various cases for the implementation of individual trajectories and the implementation of technology scientific and methodological accompaniment provides support for the subjective activities of teachers, promotes the formation of new professional behavior. The individual trajectory merges in the process of interaction of all project participants and grows to a new level [8].

We anticipate the interconnectedness of the following areas of work: research, design, education. All of them, taking into account the theory of self-organization, the ideological core of which is the principle of nonlinearity, should ensure that project participants understand those new phenomena and facts that have not previously fallen into the scope of their professional actions or personal research.

The main objectives of the interregional cooperation project are:

- to present to the stakeholders multivariate learning opportunities in the UOUPE system;

- to open advantageous opportunities for teacher's partnership cooperation (teaching special courses at UOUPE);

- to conduct marketing research of inquiries concerning satisfaction of current and perspective needs of consumers of educational services;

- conduct a focus group study to identify positives and weaknesses, trends and patterns; abstraction, idealization, formalization and generalization; systematization and formulation of conclusions, recommendations and determination of directions of further development of "UOUPE";

- to develop and test a model of continuous professional development of teachers as consumers of educational services in the conditions of "UOUPE";

- substantiate the current methods for monitoring the results of professional development of teachers as consumers of educational services in the conditions of "UOUPE";

- to develop and experimentally test in the conditions of "UOUPÉ" modern scientific and methodical support of professional development of teachers as consumers of educational services (educational modules, special courses, flash courses, webinars, etc.);

- check the assumptions that these tasks can be implemented through the prism of theoretical and methodological, organizational and managerial, scientific and methodological, reflective levels.

Today it is generally accepted that the professional development of teachers as consumers of educational services is provided by open technologies of non-formal adult education. Open information content, coherence, joint creation, experimentation, reflection, exchange and application of accumulated ideas and knowledge, experience of all subjects, availability of conditions for their free entry into the educational space and receiving quality education without restriction of gender, age, national, territorial differences – these values are the basis for the functioning of "UOUPÉ" as a center of non-formal adult education.

Stages of the project and terms of their execution:

Diagnostic stage (01.01.2020–31.12.2020):

- development and presentation of the project program;

- study and analysis of philosophical, psychological and pedagogical, sociological literature, normative documents on the problem of professional development of teachers as consumers of educational services in the context of non-formal education;

- monitoring in order to identify problems and difficulties in the process of professional development of teachers as consumers of educational services in the conditions of "UOUPÉ";

- comprehensive study of organizational and managerial, psychological and pedagogical, scientific and methodological factors of professional development of teachers as consumers of educational services in non-formal education.

Modeling stage (01.01.2021–31.12.2021):

- theoretical substantiation and experimental verification of technologies and models of professional development of teachers as consumers of educational services in the conditions of "UOUPÉ" as a center of non-formal education;

- substantiation of actual methods for monitoring the results of professional development of pedagogical workers in the conditions of "UOUPÉ";

- development of professional development programs for teachers as consumers of educational services in various transformations (special courses, flash courses, etc.)

Reflexive-introductory (01.01.2022–31.12.2022):

- conducting quantitative and qualitative analysis of the results of scientific intelligence;

- implementation of the obtained results in the practice of work of "UOUPÉ";

- presentation to stakeholders of multivariate learning opportunities at UOUPÉ courses;

- opening of profitable opportunities of partnership cooperation for teachers (teaching special courses at "UOUPÉ");

- identification of the social effect of the implementation of the project results in the context of non-formal education.

The trajectory of creating open information content "UOUPÉ" is built with the following principles of open education:

- openness and accessibility: UOUPÉ open information content has opportunities to attract customers of educational services of the general public, including key stakeholders; the ability to interact and communicate off-line (educational environment "UOUPÉ" [9]) and on-line (BBB, chats educational environment);

- flexibility and adaptability: opportunities to adapt to changing environmental conditions (including in the context of the coronavirus disease 2019 (COVID-19), to significant educational transformations (distance education, online education); flexible educational system (freedom of choice of forms and content of education, depth and scope of the program of advanced training of educational services, duration and pace of education);

- globalization: free functioning in the world educational community of non-formal education (UOUPÉ);

- economic efficiency and competitiveness among price proposals: the educational result is achieved with less, compared to traditional training, time, money; economic supply is competitive in the market of educational services.

Practically oriented science, aimed at studying the real state of affairs in the activities of teachers, is able to turn theoretical and conceptual knowledge into project knowledge, and then move to the technological and instrumental level, and through a deep understanding of practical activities to move to a new level of educational practice (anthropics).

The essence of the organization of activities within the project of interregional cooperation is presented by us in the form of a model (see fig. 1). The umbrella model covers and unites the main segments of the interregional cooperation project: problem-based, managerial-organizational, design-constructive, result-reflective. But we also single out the problem segment of the project, which includes diagnostics in order to identify current educational problems that are different for teachers, to offer relevant content for educators. It is important to transfer the person from the state of "I have a problem with questions...." into the state of desire to solve problems that are formulated in the task – "ready to act to solve existing problems". It is important for teachers to analyze and understand the boundary between their own usual positions and modern socio-cultural challenges that encourage the modernization of sustainable methods, approaches in practical educational activities, to master innovations. An important step in moving from the "I have a problem with..." position is to realize that the problem can be defined as the lack of tools to solve the problem effectively.

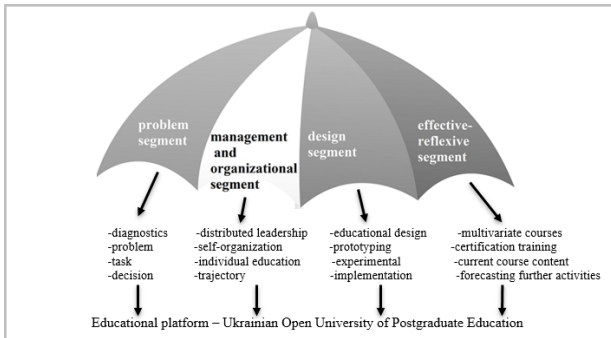


Fig. 1. Model of organization of interregional cooperation in “UOUPE”.

Perhaps this indicates that educators do not have the means that are already available to them. As an example, we can cite the situation with distance learning: all the means to implement online learning were available, but only in a pandemic was there a willingness to master these necessary tools. However, sometimes it may happen that the teacher does not have or does not have the means to implement a problem, then you need to organize innovative work and introduce innovations.

We conducted a SWOT-analysis of existing systems of professional development of teachers as consumers of educational services to clarify the positive and negative aspects of learning conditions in non-formal education as well as achievements and shortcomings. The SWOT-allows to look at professional development in non-formal education comprehensively, analysing external and internal factors, and further generate strategic alternatives that combine the factors identified in the previous stage.

A total of 100 respondents were involved in the study, which was divided into five focus groups of 20 respondents each. Among the participants of the focus groups, the heads of educational institutions and pedagogical staff were evenly represented. A questionnaire was compiled for the work, which included questions for the analysis of external and internal factors of the conditions of professional development of teachers in non-formal education. An important step in conducting a SWOT analysis was to conduct a correlation analysis to identify the relationships between the components of the system of professional development of teachers in non-formal education. The obtained results made it possible to make significant changes in the strategic planning of project activities, which will promote productive interaction of all groups to the partnership.

To build a personal trajectory of professional development, it is important to help teachers to understand individual needs and formulate personal challenges based on reflection on experience, psychophysiological and cognitive manifestations of personality.

Management and organizational segment of the interregional cooperation project. One of the modern theories of leadership – distributed leadership – is relevant for project management of interregional cooperation. D. L. Bradford [10] and A. R. Cohen, the developers of the theory of "distributed" leadership, see the essence of this approach in the fact that in the group that implements the project, it is not necessary to have one, permanent,

leader. The project is usually divided into several stages, and each stage requires a certain competence. According to the theory of D. L. Bradford and A. R. Cohen, the most competent individual, becomes a temporary leader, including a coordinator of the group. Upon completion of a specific phase of the project, this interim leader gives way to another member of the group with the competencies that are most relevant to the next phase. In this case, each leader himself becomes subordinate. This process continues until the project is fully implemented. As our experience of professional training of teachers shows, in different regions the leaders are usually representatives of postgraduate education institutions or Centers for Professional Development of Teachers, who know the situation in the region as well as possible.

It is important to single out as a key principle of project implementation – the principle of co-organization. The project unites educators on the basis of common values and meanings of innovation, the vision of holistic approaches to further effective steps in the project and, of course, in the process of co-organization creates conditions for the individual educational trajectory of each project participant. Thus, it is a dynamic system, the feature of which is the process of co-organization, which is achieved through informal cooperation, when all participants take balanced, purposeful, consistent steps together with the initiators of the project to achieve the projected personally significant goal.

Design segment. Based on diagnostics, observations in the mode of online or offline meetings, a strategy of multivariate approaches to the implementation of educational challenges is developed and forecasting activities are carried out to anticipate and anticipate future changes. The subject of discussion is primarily specific problem situations that need to be implemented here and now. The discussion is conducted both by the project participants and by all those interested in a certain range of issues. An important factor in understanding how this segment works is the awareness of the concept of "design thinking", which we consider basic (image of the Hasso Plattner Institute of Design at Stanford see fig. 2) [11].

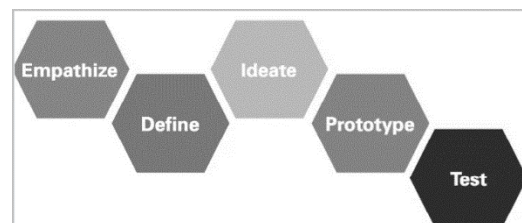


Fig. 2. Five stages of design thinking.

According to Stanford d.school, the classical understanding of design thinking methodology recognizes five stages of the process: empathy, problem definition, idea generation, prototyping and testing [12]. Understanding the essence of these steps contributes to the effective solution of the problems identified in the first segment of the model.

Each of the processes within the design begins with awareness of the task. It must be clear and feasible, accessible in achieving the predicted result. The first and extremely important stage of design thinking is

recognized – empathy – the ability to imagine yourself in the place of another person and understand his feelings, desires, behaviour. Empathy helps the teacher as a consumer of educational services, is a participant in the learning project, to direct their efforts to solve the problem, to reveal their own needs, to identify the emotions that currently guide his behaviour. After realizing the problem (in our umbrella model, the corresponding segment is separated), the stage of generating ideas begins. There are many techniques that promote creativity, among them: brainstorming, bodystorming, sketching, SCAMPER, creating a mind map, problem tree and more. It is important for the successful generation of ideas to choose a moderator of an andragogue with the function of a facilitator, who successfully implements the idea of invaluable perception of different opinions, which will create an atmosphere of trust, mobilize the creativity of participants. At the final stage – the stage of prototyping – begins the implementation of ideas, their implementation in real practice in the form of prototypes (experimental learning models: courses, cases, multimedia textbooks, etc.). Ideas are materialized, different options are constructed, feedback is provided between andragogues and teachers as consumers of educational services. It is recommended to implement the first prototypes immediately, and then improve.

Effective-reflexive segment. The following indicators will be used to assess the effectiveness of the interregional cooperation project: anthropocentrism; innovation; freedom of creativity; democracy and transparency of decision-making; multivariate choice of courses; the professional success of consumers of educational services. The quality of the project result will be influenced by the high level of reflexivity, and responsibility of all project participants; the ability of participants to objectively assess activities and predict future activities, high activity and motivated involvement of educators in various projects on the platform "UOUPE".

The challenges of the modern world require decisive action in the form of strategically different educational approaches to the professional development of the individual. The search for additional unique forms is urgent, the essence of which is the development of the subjective and personal position of a person in the profession, in socially oriented activities, in the system of relationships with another person. Non-formal education, with this approach, provides a real choice of educational strategies and content to meet the needs of adults, is a real educational space for practice-oriented, socially meaningful renewal of professional knowledge, and sometimes – education at a new level of scientific knowledge.

Today it is important not so much to create a multivariate forecast of possible situations during adult learning, but to understand that in today's world it is impossible to predict all the variety of situations that teachers will have to face. It is impossible to prepare a manual with ready-made recipes for various pedagogical situations that arise. The present time requires from the pedagogical worker subjective activity in his own

professional activity. That is why the development of subjective, personal life position and active independent socio-cultural responsible activity is emphasized as the most important in the training of pedagogical workers. The system of non-formal education should provide opportunities – probably to become a modern educational platform – for social and practice-oriented learning for the effective professional development of the teacher's personality.

Thus, the project of interregional cooperation for professional development of pedagogical workers on the basis of the project-transforming nonlinear paradigm and the reflexive-positional approach is developed. The project is considered as a form of social interaction based on openness, accessibility, horizontal ties and attitudes, during which a community of progressives educators is formed. They are able to respond to modern challenges and radically change educational approaches to their own learning and their professional mission.

Thus, the nonlinear worldview of adult education helps to scientifically comprehend the phenomena in the educational activities of teachers as consumers of educational services that did not fall in the period of stable functioning of the education system in the field of basic research, including such characteristics of modern life as chaos, order, formation. According to our approach, it is the models of professional development in the system of non-formal education that meet the modern challenges of the irrationally arranged world. The synergetic approach allows transforming a sustainable system of postgraduate education into an active, mobile, constantly changing system of formal and informal adult education on the basis of self-organization, nonlinear thinking, creative design of individual professional development, construction of its various vectors according to the needs of the teacher. professional role in social systems.

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