

# Open distance education for teachers in Ukraine: the case of the Ukrainian Open University of Postgraduate Education

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**Abstract.** The Ukrainian Open University of Postgraduate Education (UOUPE) is a self-governing educational institution that aims to provide distance education for teachers in the context of the COVID-19 pandemic and the integration of Ukraine into the European educational space. The UOUPE is based on a design-transforming nonlinear paradigm and a reflexive-positional approach, enabling a community of progressive educators who can respond to modern challenges and change their learning and professional practices. The paper presents the interregional cooperation project for teachers' professional development, which the UOUPE implements in collaboration with the Department of Philosophy and Adult Education of the Central Institute of Postgraduate Education of the University of Educational Management. The paper also reports the results of the first diagnostic stage of the project, which involved 120 teachers from different regions of Ukraine.

**Keywords:** adult education, non-formal education, postgraduate pedagogical education, distance education, COVID-19, Ukraine, professional development

## 1. Introduction

The COVID-19 pandemic has posed unprecedented challenges and opportunities for the development of education as a social phenomenon and a means of humanity's scientific, informational, and technical evolution. The pandemic has accelerated the transition from a stable and balanced order to a dynamic and complex disorder, which requires new ways of thinking, learning, and teaching for people of different ages [13, 25, 28]. The pandemic has also highlighted the need for a new philosophy of education that can cope with the nonlinear and unpredictable changes in society and the virtual reality that shapes the socialisation of individuals [29].

One of the responses to these challenges and opportunities is the Ukrainian Open University of Postgraduate Education (UOUPE), which is a self-governing educational institution that

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provides non-formal education for teachers in the context of the COVID-19 pandemic and the integration of Ukraine into the European educational space. The UOUPE is based on a design-transforming nonlinear paradigm and a reflexive-positional approach, enabling a community of progressive educators who can adapt to modern challenges and change their learning and professional practices. The UOUPE also collaborates with the Department of Philosophy and Adult Education of the Central Institute of Postgraduate Education of the University of Educational Management to implement a project of interregional cooperation for the professional development of teachers.

This paper aims to reveal the principles of non-formal education in the UOUPE system. The main task of this paper is to present the interregional cooperation project for teachers' professional development, which is based on the design-transforming nonlinear paradigm and the reflexive-positional approach.

## 2. Related works

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, particularly in the system of postgraduate education [11]. 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 realised, "the general nature and dynamics of nonlinear worldview in modern science are associated primarily with the theory of self-organisation and based on this worldview" [17].

The philosophical basis and prerequisite for nonlinear processes in education is a synergetic approach [18, 19]. Thus, we proceed from the fact that the development of modern non-formal adult education is based on a synergetic approach and, according to Voznyuk [30], is characterised by the following manifestations:

- the pedagogical system itself chooses the path of its development;
- "open", "distance" type of lifelong learning [4], 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 primary purpose of the education system – the free and comprehensive development of the individual;
- resonances, uncertainty, randomness, and chaos can be a source of the formation of new relatively deterministic structures.

Applying the ideas of the synergetic paradigm of education to the organisation of the distance education system helps us better understand modern transformations and reveal new facets in the dialectic of the educational process [6].

Siemens [16], the founder of the theory of connectivism, expressed the idea that learning in the modern world should change significantly because the old theories (behaviourism, cognitivism,

constructivism) were developed in the “pre-technological” era. Therefore, in the modern world, many students will move into 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 emphasises the need for theory to explain the relationship between individual and organisational 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) [9].

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 [2, 24].

Studying the educational systems of the European Union, Sysoyeva and Krystopchuk [23] note that postgraduate education in the European Union, in particular, Bulgaria, Poland, Romania, Slovakia, Slovenia, Hungary, the Czech Republic, covers a wide range of problems: from professional development to work in various fields, for professional training, retraining and advanced training of the temporary unemployed. Postgraduate education in Spain is an additional 2–3 years of study (in some higher education institutions more). We emphasise the existence of two opposite trends. On the one hand, both the Bologna Process and the Copenhagen Declaration of European Countries provide for the creation of European education with uniform principles and requirements for the unification of educational structures in these countries [21]. On the other hand, the strategy and decisions are based on the experience, traditions and potential of the educational systems of the European Union, and unification does not deprive them of their national identity.

### 3. Research methodology

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 Educational Sciences of Ukraine “Transformation of professional development of pedagogical and scientific-pedagogical workers in the conditions of open university of postgraduate education” (state registration number 0120 U’104637) (2020–2025).

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 complex study of organisational 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; formalisation and generalisation – for systematisation and formulation of conclusions, determination of directions of further scientific researches;
- the empirical: psychological and pedagogical diagnostics (formalised 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 summarise the results, determine the probability and reliability of quantitative and qualitative indicators to identify teachers' professional development dynamics as consumers of educational services in an open university. Tables and diagrams, with the help of MS Excel, Pedagogical Statistics, and Statistica 6.0, have been developed for statistical automatic data processing.

#### 4. Results and discussion

What is the main limitation of traditional approaches to adult learning? Although 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 [14]. In addition, the “trend of waiting” continues to operate. Unfortunately, most teachers “such kind-hearted” instructions from any institution and, preferably, for all manifestations of the natural educational process. Therefore, a breaking of traditions in the education system is on time. This is one of the most challenging tasks of adult education. After all, traditions in it – as a constant phenomenon – present a generalised 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 abovementioned social challenges, the Ukrainian Open University of Post-graduate Education (hereinafter “UOUPE”) is the first self-governing (autonomous) educational institution type of a distributed university in Ukraine [27]. Nowadays, the relevance and demand of 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, based on the interaction of formal, non-formal, and informal education, provides:

- bringing the content of postgraduate and adult education in line with European educational standards and the digitalisation of society;
- modernisation of educational infrastructure;
- development of educational and methodological support for the activities of postgraduate education institutions;
- introduction of innovative approaches to continuously developing the specialist's personality [27].

Since the general nature and dynamism of the nonlinear worldview in modern education involves primarily self-organisation 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 in 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 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, pieces of training, etc.; supports open learning based on unique methods developed by teachers of virtual departments, based on the principle of mandatory consideration of personal needs of students and organisational 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, and direct modelling 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 the activity-personal model of professional development of the individual, which has defined and chosen its 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, considering the diversity of social challenges, educational and professional trends.

The interregional cooperation project 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 based on effective communication processes, diversification of educational activities, community design, and coordinated teamwork.

Designing various cases for implementing individual trajectories and implementing technological, scientific, and methodological accompaniment provides support for teachers' subjective activities, promoting the formation of new professional behaviour. The individual trajectory merges in the interaction process of all project participants and grows to a new level [20].

We anticipate the interconnectedness of the following areas of work: research, design, and education. Considering the theory of self-organisation, the ideological core of which is the principle of nonlinearity, all of them should ensure that project participants understand those new phenomena and facts that have yet to fall 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 prospective needs of consumers of educational services;
- conduct a focus group study to identify positives and weaknesses, trends and patterns; abstraction, idealisation, formalisation and generalisation; systematisation 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 “UOUPE” 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, organisational and managerial, scientific and methodological, and 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, the experience of all subjects, availability of conditions for their unrestricted entry into the educational space and receiving quality education without the restriction of gender, age, national, territorial differences – these values are the basis for the functioning of “UOUPE” as a centre of non-formal adult education.

Stages of the project:

1. Diagnostic stage:

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

2. Modeling stage:

- theoretical substantiation and experimental verification of technologies and models of professional development of teachers as consumers of educational services in the conditions of “UOUPE” as a centre of non-formal education;
- substantiation of actual methods for monitoring the results of professional development of pedagogical workers in the conditions of “UOUPE”;
- development of professional development programs for teachers as consumers of educational services in various transformations (special courses, flash courses, etc.)

3. Reflexive-introductory:

- conducting quantitative and qualitative analysis of the results of scientific intelligence;
- implementation of the obtained results in the practice of work of “UOUPE”;
- presentation to stakeholders of multivariate learning opportunities at “UOUPE” courses;
- opening of profitable opportunities of partnership cooperation for teachers (teaching special courses at “UOUPE”);
- identification of the social effect of implementing the project results in the context of non-formal education [12].

The trajectory of creating open information content “UOUPE” is built with the following principles of open education:



- openness and accessibility: “UOUPE” open information content has opportunities to attract customers of educational services of the general public, including key stakeholders; the ability to interact and communicate offline (educational environment “UOUPE” [26]) and online (BBB, chats educational environment);
- flexibility and adaptability: opportunities to adapt to changing environmental conditions (including in the context of 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);
- globalisation: free functioning in the world educational community of non-formal education (“UOUPE”);
- economic efficiency and competitiveness among price proposals: the educational result is achieved with less, compared to traditional training, time, and money; economic supply is competitive in educational services.

Practically oriented science, aimed at studying the natural state of affairs in the activities of teachers, can 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 (anthropic).

We present the essence of organising activities within the interregional cooperation project as a model (figure 1). The umbrella model covers and unites the main segments of the interregional cooperation project: problem-based, managerial-organisational, design-constructive, and result-reflective.

This may indicate that educators do not have the means already available. For example, we can cite the situation with distance learning: all the means to implement online learning were available, but only in a pandemic was a willingness to master these necessary tools. However, sometimes, the teacher cannot solve a problem, so they need to organise and introduce innovative work.

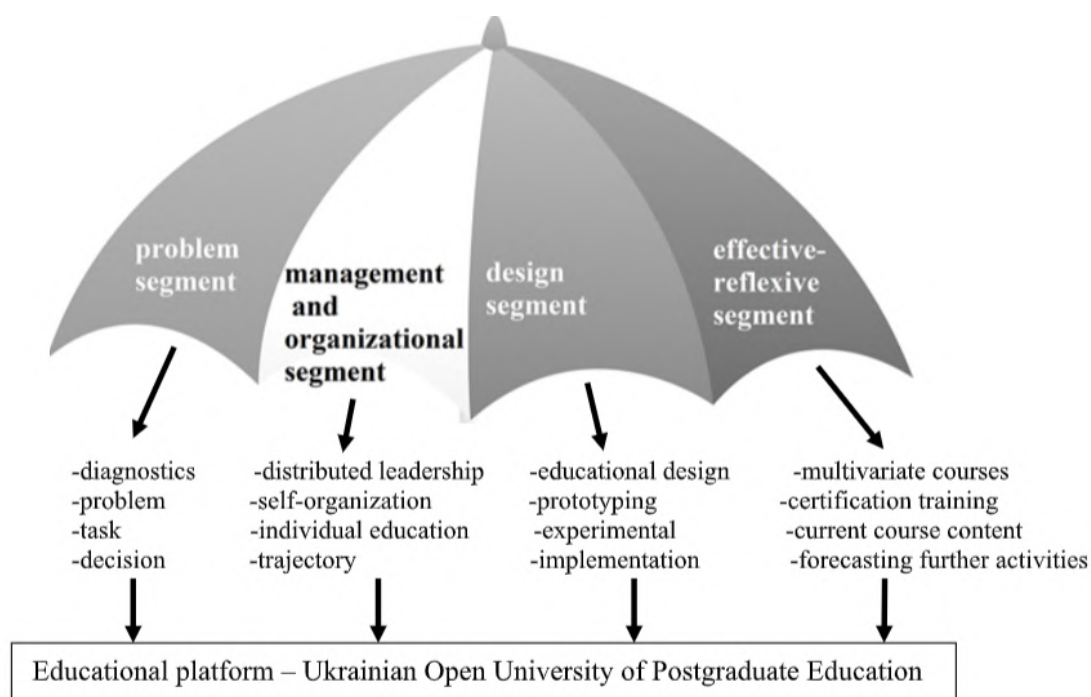
We conducted a SWOT analysis of existing systems of professional development of teachers as consumers of educational services to clarify the positive and negative aspects of learning conditions in non-formal education as well as achievements and shortcomings. The SWOT allows us to look at professional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

SWOT analysis was conducted in several successive stages:

- collection of analytical information
- analysis of internal and external factors, identification of strengths and weaknesses
- comparison of strengths and weaknesses and external factors
- identifying key actions relevant to opportunities, threats and weaknesses

The time of their implementation was distributed, as well as that of those responsible for the implementation and implementation period. The shortcomings of the SWOT analysis, namely the subjectivity of the indicators, were considered when compiling the analysis. The





**Figure 1:** Model of organization of interregional cooperation in “UOUPE”.

comprehensive assessment was conducted not by one person but by a group of experts and the entire team of authors of the article, as group discussions and exchange of ideas provide an opportunity to make the analysis more accurate and in-depth.

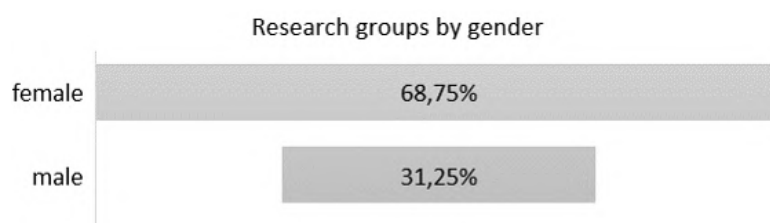
A total of 80 respondents were involved in the study, divided into four focus groups of 20 respondents each. The fifth group – a group of experts, which involved three representatives from the four focus groups, analysed the factors and assessed the correspondence in points for each factor. Among the participants of the focus groups, heads of educational institutions and pedagogical workers were evenly represented from different cities of Ukraine, namely Lviv, Odesa, Kharkiv, and Mykolayiv.

By gender, the study participants were (figure 2):

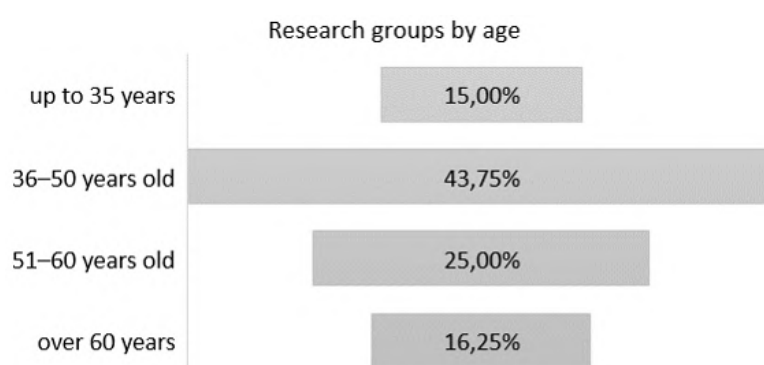
- female – 55 (68.75 %);
- male – 25 people (31.25 %).

In terms of age, they belong to 4 groups (figure 3):

- up to 35 years – 12 (15.00 %);
- 36–50 years – 35 (43.75 %);
- 51–60 years – 20 (25.00 %);
- over 60 years – 13 (16.25 %).



**Figure 2:** Gender of study participants.



**Figure 3:** Age of study participants.

A questionnaire was compiled for the work, which included questions for the analysis of external and internal factors of the professional development conditions of teachers in non-formal education. Two matrices represent SWOT analysis. The first matrix of the primary SWOT analysis consisted of generalised results of the work of four groups (table 1).

To work on the matrix of the primary SWOT analysis, a questionnaire was compiled, which contained questions for the analysis of external and internal factors of the conditions of professional development of teachers in non-formal education, which consisted of the following questions:

- S – Strengths: What is the constructive advantage of non-formal education? What are the advantages of non-formal education over formal? What do you like about learning in non-formal education?
- W – Weaknesses: What shortcomings do you see in learning in the non-formal education system? In what formal education is better? What can be improved in the non-formal education system?
- O – Opportunities: What new opportunities are opening up for you in non-formal education? What new global educational trends can positively influence the development of non-formal education?
- T – Threats: Can a pandemic negatively affect the development of non-formal education? Did you spend more of your own money on advanced training? Are providers of educational services in the non-formal education system reliable enough?

**Table 1**  
Primary SWOT analysis matrix

Internal factors	<b>S – Strengths</b> Individual motivation, lack of coercion Meets the request of listeners Efficiency Choice The opinion and desire of the consumer of educational services are taken into account directly Applied basis and high practical efficiency Opportunity to study at a convenient time	<b>W – Weaknesses</b> Lack of platforms that would combine different forms of non-formal education The discrepancy is legislative; is the problem with the confirmation of the certificate Insufficient funding There is no clear plan and strategy for the educational process Not all self-organised institutions provide quality content There is no accreditation system for courses, pieces of training, lectures	External factors
	<b>O – Opportunities</b> Ability to master new forms and information according to own requests Ability to compare, look at the problem from another angle, look for creative content Improve where you want It is now possible to become a participant in online training, conferences, and workshops without being tied to a specific place Creating a global human education strategy	<b>T – Threats</b> Opportunity to attend training, the results of which will not be recognised during the certification Additional funds are needed for training Unregulated requirements for the provision of services, as not all self-organised institutions provide quality content	

The fifth focus group – an expert, analysed the factors and assessed the correspondence in points for each factor. Quantitative evaluation (used from 1-4, where 1 is the smallest value and 4 is the largest value). Based on the work of experts, we selected the factors that appear to respondents as the most important, reflected in high scores (in parentheses shows the total number of points scored by these factors according to experts). Based on this study, we comprehensively assessed opportunities and threats and weaknesses: where 0 – there is no connection between the factors; 1 – weak connection; 2 – moderate connection; 3 – strong connection (table 2). During this analysis, possible synergies (mutual influence) between the components of the professional development system in the context of non-formal education were identified. The high assessment indicates a strong impact of the component matrix on the overall system of activities within the project.

Next, after analysing factors, compiled by the second matrix TOWS – the final stage of SWOT analysis based on the developments of Weihrich [31]. Thus, one can find answers to strategic questions at the intersection of internal and external factors (table 3).

Thus, based on the SWOT analysis and analysing the positive and negative aspects of teacher training in non-formal education, we can conclude that the future development of our project

**Table 2**  
Comprehensive assessment of opportunities and threats, considering strengths and weaknesses.

Environment		Opportunities (O)			Threats (T)		
Internal environment		<i>O</i> <sub>1</sub> Ability to master new forms and information according to your requests (48 p)	<i>O</i> <sub>2</sub> It is now possible to participate in online training, conferences, and workshops without reference to a specific place (45 p)	<i>O</i> <sub>3</sub> Creating a global education strategy (42 p)	<i>T</i> <sub>1</sub> Opportunity to get on training, the results of which will not be recognised during the certification (48 p)	<i>T</i> <sub>2</sub> Additional funds needed for training (48 p)	<i>T</i> <sub>3</sub> Unregulated requirements for the provision of services, as not all self-organised institutions provide quality content (48 p)
Strengths (S)	<i>S</i> <sub>1</sub> Individual motivation, lack of coercion (48 p)	3	3	3	0	0	2
	<i>S</i> <sub>2</sub> Efficiency (48 p)	3	3	3	0	0	0
	<i>S</i> <sub>3</sub> Applied basis and high practical efficiency (48 p)	3	1	1	0	0	1
Weaknesses (W)	<i>W</i> <sub>1</sub> Lack of platforms that would combine different forms of non-formal education (45 p)	0	0	3	1	0	2
	<i>W</i> <sub>2</sub> Not all self-organised institutions provide quality content (47 p)	0	0	1	0	0	3
	<i>W</i> <sub>3</sub> There is no accreditation system for courses, pieces of training, lectures (45 p)	0	0	1	1	0	0

of interregional cooperation for the professional development of teachers is possible provided freedom selection of models of refresher courses for teachers, development of the content of courses by scientists on an innovative basis to ensure the quality of educational content and continuous professional andragogical support.

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

*Management and organisational segment of the interregional cooperation project.* One of the modern leadership theories – distributed leadership – is relevant for project management of interregional cooperation. Bradford and Cohen [3], the developers of the theory of distributed

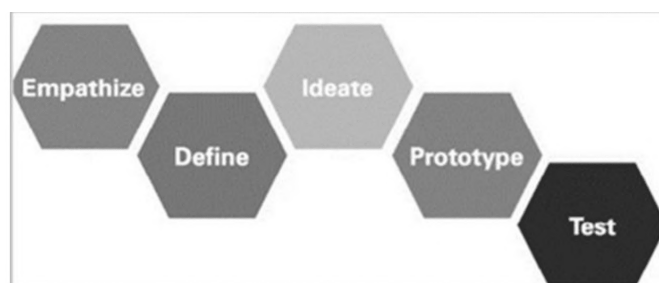
**Table 3**  
TOWS matrix.

	$O(O_1, O_2, \dots, O_n)$	$T(T_1, T_2, \dots, T_n)$
$W(W_1, W_2, \dots, W_n)$	<p style="text-align: center;"><b>WO</b></p> <p>What weaknesses hinder the use of emerging opportunities? The global trend – deepening interstate cooperation in education, creating a global strategy for human education, regardless of place of residence and educational level – these new opportunities can be used in Ukraine but may be hindered in particular by the lack of a single platform where everyone providers of educational services could submit their educational proposals, which would allow to see a holistic picture of possible options for qualification and professional development.</p>	<p style="text-align: center;"><b>WT</b></p> <p>What are the biggest risks with identified weaknesses? One of the main risks is low-quality educational content against the background of unregulated requirements for educational service providers. There is a significant danger in the freedom gained in professional development - populist curricula appear, which do not provide the necessary quality academic level.</p>
$S(S_1, S_2, \dots, S_n)$	<p style="text-align: center;"><b>SO</b></p> <p>How do we use opportunities based on strengths? With a high level of motivation for self-development today, it is easy to choose the desired forms and content of training. Enhancing the quality of online education makes it possible to choose the necessary courses (training, webinars and other forms) regardless of place of residence.</p>	<p style="text-align: center;"><b>ST</b></p> <p>How do we neutralise risks using strengths? Strengths need to adjust the risks raised during focus group discussions adequately. However, the self-awareness and intrinsic motivation of customers of educational services are driving forces in maintaining quality products and powerful forces in the fight against poor educational content and low levels of teaching.</p>

leadership, see the essence of this approach in the group that implements the project, having one permanent leader is unnecessary. The project is usually divided into several stages, each requiring a specific competence. According to Bradford and Cohen [3], the most competent individual, including a group coordinator, becomes a temporary leader. Upon completion of a specific project phase, this interim leader gives way to another group member with the most relevant competencies for 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 teacher training 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 essential to single out a fundamental principle of project implementation – co-organisation. The project unites educators based on shared values and meanings of innovation, the vision of holistic approaches to further practical steps in the project and, of course, the process of co-organisation, creating 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-organisation, which is achieved through informal cooperation when all participants take balanced, purposeful, consistent steps together with the project’s initiators to achieve the projected personally significant goal.

*Design segment.* Based on diagnostics observations in online or offline meetings, a strategy of multivariate approaches to implementing 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 by the project participants and all those interested in a specific range of issues. An important factor in understanding how this segment works is the awareness of the concept of “design thinking”, which we consider fundamental (figure 4).



**Figure 4:** Five stages of design thinking (image of the Hasso Plattner Institute of Design at Stanford [5]).

According to Isa and Saman [7], the classical understanding of design thinking methodology recognises five stages of the process: empathy, problem definition, idea generation, prototyping and testing. 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, feasible, and accessible to achieve the predicted result. The first and critical stage of design thinking is recognised – empathy – the ability to imagine yourself in the place of another person and understand his feelings, desires, and behaviour. Empathy helps the teacher, as a consumer of educational services, to participate in the learning project, direct their efforts to solve the problem, reveal their own needs, and identify the emotions that currently guide their behaviour. After realising the problem (in our umbrella model, the corresponding segment is separated), generating ideas begins. Many techniques promote creativity: brainstorming, sketching, mind-mapping, and more. It is vital 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 and mobilise participants’ creativity. At the final stage – the stage of prototyping – begins the implementation of ideas their implementation in practice in the form of prototypes

(experimental learning models: courses, cases, multimedia textbooks, etc.). Ideas are materialised, different options are constructed, and feedback is provided between andragogues and teachers as consumers of educational services. It is recommended that the prototypes be implemented immediately and then improved.

*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, and 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 the motivated involvement of educators in various projects on the platform “UOUPE”.

The change in traditional forms of professional development of specialists in educational organisations is due to the influence of innovations in the non-formal education system, which are designed to increase the effectiveness of the professional development of specialists per individual requests. Research of such innovative influence of non-formal education on the activity of specialists of educational organisations is one of the priority directions of our research. Fundamentally, new educational transformations in the paradigmatic system of formal and non-formal education are due to the need to respond to trends related to the orientation of the education system and the needs and demands of society. Therefore, alternative informal models of professional development of specialists model the innovation structure, propose a change in the functions of mentors of educational projects, offer new methods and technologies of adult learning and involve educators in effective, innovative types of professional development in non-formal education.

Following the diagnostic phase of the project, a study was conducted to identify problems and difficulties in the professional development process of teachers as consumers of educational services in the conditions of “UOUPE”.

The work of specialists of educational organisations in the conditions of social transformations should be aimed at applying qualifications and personal-professional characteristics necessary to fulfil a particular social role in the educational organisation [15]. Therefore, to act rationally and effectively in the conditions of change, the availability of competencies and skills to carry out practical activities are professionally necessary for teachers. Pedagogical and scientific-pedagogical workers are expected to carry out their activities in such manifestations – specialists in the field, active subjects of the educational organisation, members of a single team, and performers of social roles. On the other hand, considering the factors of these manifestations, we believe it is essential to study the self-assessment of professional and pedagogical motivation in non-formal education. Among the criteria for determining the self-assessment of professional and pedagogical motivation were identified as follows: socio-professional involvement, professional interaction in professional social communities, professional adaptation to change, professional stress, professional retraining in connection with reforming the methodological service, changes in professional communication in the context of digitalisation of society, increasing the workload.

A comprehensive questionnaire was used to determine the self-assessment of teachers’ professional and pedagogical motivation; a modified version of the questionnaire by M. P. Fetiskin “Self-assessment of professional and pedagogical motivation” was developed. The survey was

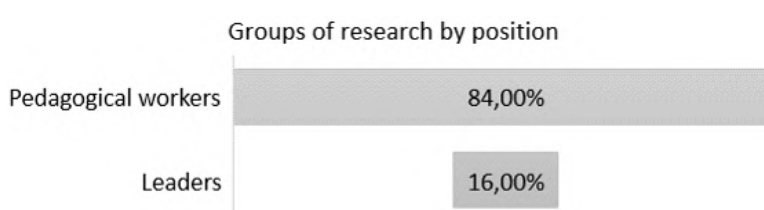


attended by 123 pedagogical workers (employees of methodological services) – potential customers of educational services of the interregional cooperation project for the professional development of pedagogical workers. According to the positions, the respondents were divided into two groups: 16.0 % were heads of educational organisations, 84.0 % – pedagogical and scientific-pedagogical workers (table 4, figure 5).

**Table 4**

Characteristics of the sample of researched pedagogical workers.

Groups of research by position	Number	Percentage
Leaders	20	16.0 %
Pedagogical workers	103	84.0 %
Total	123	100.0 %



**Figure 5:** Characteristics of the sample of researched pedagogical workers.

In terms of age, they belong to 5 groups (figure 6):

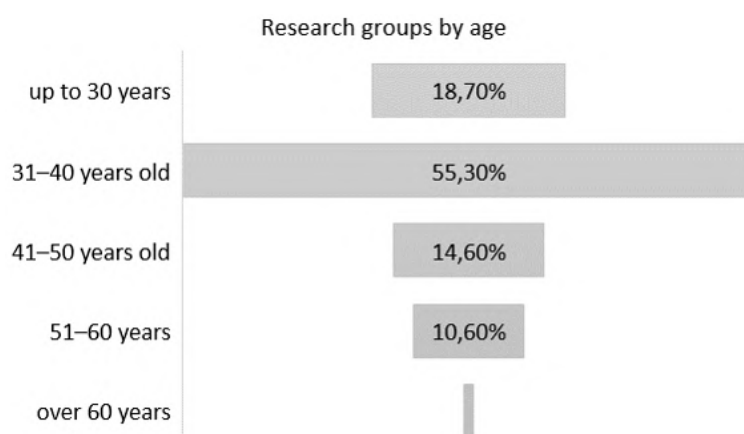
- up to 30 years – 18.7 %;
- 31–40 years old – 55.3 %;
- 41–50 years old – 14.6 %;
- 51–60 years – 10.6 %;
- over 60 years – 0.8 %.

By gender, the study participants were (figure 7):

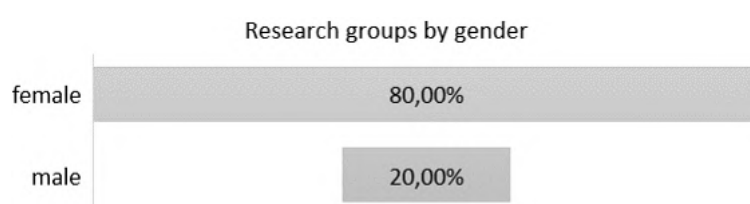
- female – 80.0 %;
- male – 20.0 %.

The analysis of the results of the socio-psychological survey of teachers allowed us to determine their assessment of the state of self-assessment of professional and pedagogical motivation (table 5).

Based on the analysis of the results of the socio-psychological survey of teachers found that within the criterion of “socio-professional involvement”, 52.9 % of respondents are constantly involved in the interaction of professional experience among the educational community (webinars, social networks and messengers by professional interests); 19.0 % – were undecided with the changes; 15.7 % of respondents did not change and 12.4 % – determined that the changes were negative. The factor of socio-professional involvement in the period of change affects



**Figure 6:** Age of researched pedagogical workers.



**Figure 7:** Gender of study participants.

the improvement of educators' psychological and emotional state. It increases opportunities to meet the various professional needs of professionals in experience exchange and professional socialisation (paramount in today's reform of methodological service development of pedagogical workers – for future consultants of these centres). We define professional socialisation as a process of professional development of a person, which involves gaining professional experience through the acquisition and active reproduction of professional knowledge, skills, abilities, norms, values, and behaviour patterns necessary for professional activity in educational transformations. Among the answers on socio-professional involvement prevailed: independent search and self-educational activities in specialised pedagogical literature on introducing modern educational technologies (professional periodicals and registration on specialised educational platforms, etc.).

To analyse the criterion of “professional adaptation in terms of innovative change”, it was appropriate to update the Adams Equity Theory of motivation [1]. According to this theory, teachers engaging in professional activities in terms of modernisation and educational change evaluate this situation from two positions: personal contribution to the organisation's professional activities and reward for personal contribution to the common cause compared to reward for similar work of other employees. Thus, 18.3 % of respondents indicate negative changes in adaptation to new educational changes, and a sense of injustice leads to psychological stress in teachers. In trying to get rid of it, the teacher can act as follows: vary their labour contribution, trying to achieve justice; change the level of their income due to additional income outside the

**Table 5**

Analysis of the results of the survey of teachers.

Criteria	Positive changes, %	Undefined changes, %	No change, %	Negative changes, %
Socio-professional involvement (participation in non-formal education projects)	52.9	19.0	15.7	12.4
Professional adaptation in the conditions of innovative changes	4.2	67.5	10.0	18.3
Increased manifestations of occupational stress	8.3	47.1	6.6	38.0
Increasing the workload	14.2	38.5	4.0	43.3
Professional interaction in variable social communities	40.0	12.5	40.8	6.7
Changes in professional communication in the context of digitalisation of society	56.2	33.1	3.3	7.4
Professional retraining in connection with the reform of the methodological service system	36.7	30.0	22.5	10.8

educational institution; re-evaluate the cost-benefit ratio; to influence the pedagogical worker, who is the personification of the standard for comparison; choose another representative of the organisation for comparison; to resign from the educational organisation. Each of these factors can manifest itself in one way or another in terms of professional adaptation to innovative changes in the organisation. For example, “influencing the benchmark” and “choosing another person to compare” correspond to the mechanism of group resistance to change when the teaching staff expresses dissatisfaction with those of its members who are too active in innovating in the organisation. Only 4.2 % of respondents consider their professional adaptation comfortable in the conditions of innovative changes, which indicates a low personal readiness for flexibility and adaptability in conditions of uncertainty. 67.5 % of respondents were undecided with changes, and 10.0 % had no changes at all.

Within the criterion of “increasing the manifestations of occupational stress”, a significant part of respondents consider the negative consequences of the introduction of changes in the field of methodological service to increase the workload and manifestations of occupational stress (38.0 %). The increase in workload is associated with increasing the volume of work on the formation of content and the search and mastery of modern methodology and opportunities for the individual trajectory of professional development of teachers with the introduction of various models of professional development of teachers in formal and non-formal education; strengthening of digitisation and digitalisation of professional activity (especially this factor affects the self-assessment of professional and pedagogical motivation of the age category – over 60 years). In addition, you have to work at a fairly low salary, have insufficient social motivation to study, and have insufficient social security. 8.3 % of respondents found positive changes in this, 47.1 % were undecided about the changes, and 6.6 % did not feel any changes.

The previous criterion is closely related to the criterion of “excessive workload” – 43.3 % of respondents state negative changes due to excessive workload, which generally affects the socio-psychological mood of teachers, causing them a state of depression, dissatisfaction and

irritability. It should be noted that the interregional cooperation project for teachers' professional development provides online psychological chat counselling. Emotional stabilisation to stressful conditions involves the ability to understand the real characteristics of stressful situations, the ability to link the results of perception processes with coping strategies, the availability of information on the subjective effectiveness of the short-term coping result, the availability of information on long-term criteria of successful adaptation to educational changes (physical, mental, social well-being). In this regard, the project of interregional cooperation for the professional development of teachers is considering possible educational proposals to combat stress – appropriate content for relaxation, concentration, and autoregulation of mental states. 14.2 % of respondents find positive changes in work, 4.0 % do not feel changes, and 38.5 % of respondents cannot be determined.

On the other hand, innovative changes have a positive effect on the flexibility and adaptability of another category of educators (age groups up to 30 years and 30–40 years) – the criterion of “professional interaction in diverse social communities” (40.0 % of respondents said positive changes), Negative changes felt 6.7 % of respondents, 40.8 % – no changes and 12.5 % of respondents can not decide.

A significant part of respondents are interested in the problems and experiences of other teaching staff, independent solutions to professional and pedagogical challenges, using the mechanisms of self-directed work and sources of informal education, participating in various non-formal education projects, taking into account individual needs and requests (without pressure from management, on their initiative). Such data indicate a willingness to communicate and cooperate in a changing environment. Communication competence is manifested in the ability to go beyond the existing system and rebuild established relationships for professional self-improvement. Thus, the criterion of “change in professional communication in the context of digitalisation of society” allowed the identification of positive trends, according to respondents, and transformations in the field of communication – 56.2 %, 7.4 % – negative changes, 3.3 % – did not feel any changes, and 33.1 % of respondents did not decide on changes. In the context of the digitalisation of society, most educators have moved to the format of offline communication, including – messengers, social communities, chats, forums, collaboration on documentation using digital technologies, conducting various events (webinars) using online technology support (Zoom, Skype, BigBlueButton and others). Such changes in the perception of communication indicate, on the one hand, an understanding of the effectiveness of high-speed communications, which are carried out using digital technology rather than solving the same professional tasks live. On the other hand, such trends reduce the effectiveness of direct communication in solving professional problems because the effect of perception, which is vital in direct communication, does not have the same effect in online communication.

The established patterns must be considered in developing variable models of professional development of non-formal education of the interregional cooperation project for the professional development of teachers in the period of transformational changes. Therefore, the criterion of “professional retraining in connection with the reform of the methodological service system” directly affects the educational needs of customers of educational services and the relevance of the implementation of this project in the field of formal and informal education. Thus, among the respondents, 36.7 % are motivated to professional development and acquisition of the necessary competencies in connection with educational transformations in general and

reforming the system of methodological service in particular. Only 10.8 % of respondents see this as a negative change, which indicates cognitive rigidity and unwillingness to innovate. 22.5 % of respondents did not feel changes, and 30.0 % were undecided.

Thus, it should be noted that the transition to the digital space, exacerbated by the effects of the COVID-19 pandemic, increasing the digitalisation of the educational process, its content with the latest information does not reduce the role and importance of socio-professional interaction [8, 10]. This requires new approaches to its organisation [22]. However, qualitative changes are seen as insufficient in the activities of pedagogical and scientific-pedagogical workers in social relations. That is why, in our opinion, the data show the need to focus on interactive professional synergies in non-formal education (specialised forums and chats on the platform “UOUBE”, to provide additional social groups in messengers), which is an active link in personal interaction and to enrich professional experience.

In addition, to study the motives of professional and pedagogical activities regarding innovative changes, we conducted a survey using the developed author’s questionnaire for employees of methodological services – future consultants of the Centers for Professional Development of Teachers (CPDT). Seventy-three respondents took part in the survey (table 6).

**Table 6**

Analysis of the results of determining the motives of professional and pedagogical activity

Motive of professional and pedagogical activity	Yes, %	No, %
The desire to realise their professional potential in the face of innovative change	64.4	35.6
The desire to achieve recognition in the professional community	86.7	13.3
Desire to promote the development of educational innovations	71.1	28.9
Desire to provide new educational services to teachers	57.8	42.2
The desire to promote the development of CPDT as an innovative type of educational service	82.2	17.8

Therefore, the results of the survey identified the following motives: the desire to realise their professional potential in terms of innovative change (yes – 64.4 % of respondents, no – 35.6 %), the desire to achieve recognition in the professional community (yes – 86.7 %, no – 13.3 %), the desire to promote the development of educational innovations (yes – 71.1 %, no – 28.9 %), the desire to provide new educational services to teachers, in particular, in the Centers for Professional Development of Teachers (57.8 % – yes, 42.2 % – no), the desire to promote the development of CPDT as an innovative type of educational services (yes – 82.2 %, no – 17.8 %). Therefore, by regulating educational services for teachers, CPDT counsellors will satisfy their social motives, which are essential for the pedagogical community. This motive correlates with self-assessment of professional and pedagogical activity. Personal motives, such as the realisation of professional opportunities and recognition in the professional community, are no less important because they directly affect the development of professional self-awareness.

Thus, based on the state of self-assessment of professional and pedagogical motivation of educators in terms of educational changes and motives of professional and pedagogical activities, the relevance of the interregional cooperation project for the professional development of teachers is beyond doubt, as it is competitive in measuring non-formal education: among the

offers of educational services offers a competitive educational product that takes into account the individual needs of consumers of educational services and takes into account the needs of interactive professional interaction of educators in distance / online education and necessarily provides psychological online chat counselling to prevent professional stress.

## 5. Conclusions and outlook

In this paper, we have presented a project of interregional cooperation for the professional development of teachers based on a nonlinear paradigm and a reflexive-positional approach. We have argued that the modern world demands new educational strategies that foster individuals' personal and professional growth in various social contexts. As we have shown, non-formal education offers a flexible and practice-oriented space for teachers to update and enrich their knowledge and skills and explore new levels of scientific understanding.

We have also discussed the challenges and opportunities of adult learning in the current era, where it is impossible to anticipate all the situations that teachers may encounter in their work. Therefore, we have emphasised the importance of developing teachers' subjective activity, personal position, and socio-cultural responsibility in their professional practice. As we have described, the interregional cooperation project aims to create a community of progressive educators who can respond to the changing needs and expectations of their students and society.

We have reported the results of the first diagnostic stage of the project, where we have identified the problems and difficulties that teachers face in their professional development as consumers of educational services in "UOUPE". We have also analysed the organisational, managerial, psychological, pedagogical, scientific, and methodological factors that influence the professional development of teachers in the context of non-formal education.

The next stage of our study will be the modelling stage. Based on the findings of the diagnostic stage, we plan to theoretically justify and experimentally test the technologies and models of professional development of teachers that are suitable for the nonlinear paradigm and the reflexive-positional approach.

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