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Model of Professional Development of Future Managers in Master's Training System

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Abstract: *The article presents a model for the professional development of future managers within the master's training system, consisting of three interconnected blocks. This model is positioned as a foundation for a strategy to enhance master's level training for managers in pedagogical universities through programs such as «Educational Institution Management», «Project Management» and «Innovation Management». The effectiveness of this model was validated through statistical methods and qualimetric modeling, which confirmed the quality of the organizational-methodological conditions for the professional development of future managers in the master's training system. It was demonstrated that, with the proposed model's implementation, the operational level of Poltava V. G. Korolenko National Pedagogical University in realizing these organizational-methodological conditions for professional development in the master's training system is optimal, transitioning not only to meet current demands but also to foster a mode of self-development. These factors promote effective training for future managers by adjusting conditions to better support their professional development process. It has been found that education and qualifications, professional experience, skills and competencies, network of contacts, market conditions, career goals and ambitions, flexibility and adaptability, personal qualities and motivation, cultural and social factors influence the career development of managers.*

Keywords: *manager, management, master's training, model, educational institution management, project management, innovation management.*

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Introduction

The reform of Ukrainian society, the active implementation of innovative management practices, and the modernization of the national higher education system dictate the core approaches to the training and professional development of a modern manager. This professional should be capable of solving complex tasks and problems in the field of management, making sound non-standard decisions, leading teams to meet contemporary requirements, and contributing to the creation of a new market landscape.

The rapid pace of development in today's information society and advances in digital technology necessitate a focus on the «lifelong learning» paradigm. Creating such an educational system within pedagogical universities, one that emphasizes lifelong education and offers opportunities for it to function effectively, requires a reorganization of the educational process. This involves a transformation in the work of scientific and pedagogical staff and the forms, methods, and tools of education. For future managers, it is crucial not only to provide a system of knowledge but also to teach them to independently acquire information, process it from various sources, and creatively apply it in professional activities. In particular, educational managers, whose professional activity revolves around coordinating and organizing collective activities based on scientific management principles, must adapt to the environment of modern organizations and operate within the digital economy. This work environment demands the ability to manage a high rate of information renewal, relying not only on fundamental training during master's studies but also on self-education and the ability to build their professional development trajectory.

Master's training in management programs at pedagogical universities («Educational Institution Management», «Project Management», «Innovation Management») is a key period for developing essential professional qualities, with the ability to shape one's professional development trajectory being paramount. This capability ensures the development of career-critical skills, including communication, leadership, management innovation, emotional and social intelligence, analytical and critical thinking, personal branding, and self-management. Accordingly, there is a heightened need for the development and implementation of a professional development model for future managers within the master's training system. Such a model will assist graduate students in adapting to various professional situations and the organizational culture of the university, significantly enhancing their effectiveness, flexibility, and resilience in the fluctuating labor market. Thus, integrating this model into the master's training process not only provides students with the necessary

skills and knowledge for professional success but also promotes their holistic development as competent and adaptable professionals.

Research indicates that three main systems of education and training for managers have emerged: American, Japanese, and European. Despite their differences, management as a profession and a field of science is increasingly international, leading to the convergence of management training approaches across countries in terms of both methods and content. In the United States, for instance, over 600 business schools offer systematic training in business and management, with professional education lasting from two to ten years (Shcherbina, 2004; Hladkova, 2013; Banit, 2018; Boiko, 2024;).

In Western Europe, the United States, and Japan, a well-developed system for manager training exists. Governments, business associations, and enterprises continuously increase their investments in education, including management. Treating professional training expenses as a strategic investment, Western organizations strive for maximum efficiency in capital investment in managerial staff training. This focus is seen both in the commitment to the most modern forms and methods of training and in various efforts to retain the acquired results (Poluyaktova, 2018).

Studies of manager training in Ukraine reveal the complex and multifaceted nature of the issue. Researchers have contributed significantly to various areas: examining the historical-pedagogical discourse of training school management specialists (Leschenko et al., 2010); studying the features of professional training and certification of project managers in Ukraine (Hlavatskykh et al., 2024); analyzing the profile of a project manager as a key factor in successful project management (Kolesnikov, et al., 2019); exploring the theoretical and practical foundations of management training (Poluyaktova, 2018); examining the acmeological foundations of professional self-improvement for managers in higher education (Hladkova, 2013); focusing on methods for training managers in business communication (Boiko, 2024); developing a model for managing the quality of manager training in higher education (Mudra, 2012); and studying the pedagogical conditions for preparing managers for creative self-realization in higher education (Dzekun, 2018), among others.

In summary, scholars emphasize that the professional role of a modern manager is defined by the increasing complexity and variety of tasks, such as enhancing enterprise competitiveness, securing a favorable market position, improving internal organizational advantages, and minimizing risks. Achieving these goals relies on managers' professional competence, which suggests that improving professional training should focus on building and enhancing this competence.

Researchers also emphasize the need for innovation in management education, as innovation must be a key characteristic of every manager's professional activity. Innovations do not emerge spontaneously; they result from scientific research and the analysis and synthesis of training experiences. Several factors justify the introduction of innovations in management training (Zhamardiy et al., 2021; Emetc et al., 2022; Mohylna et al., 2022; Stiahunova, 2023; Grynova et al., 2024):

Labor Market Factor: Reflects the need to consider the labor market's impact on education, as well as the country's socio-economic situation and societal needs.

Digitalization Factor: Addresses the need to account for the technological development of the educational environment and the growth of digital technologies in contemporary society.

Integration Factor: Stems from the integration of Ukrainian education into the global educational space.

Education Quality Factor: Recognizes the need for continuous improvement and enhancement of educational quality.

Despite the significant potential of research on manager training and competence development, a professional development model for future managers within the master's training system has yet to be established.

So, the authors set the goal of developing a model of professional development of future managers in a master's training system: M. Grynova (general research methodology and organization of model implementation; conducting pedagogical workshops; workshop «Self-Education of a Successful Manager»); N. Kononets (model development, qualimetric assessment; conducting pedagogical workshops; workshop «Digital Tools of a Successful Manager»); V. Zhamardiy (development and application of a methodology for the professional development of future managers in the master's degree training system); R. Grynyov (determination of organizational and methodological conditions for the professional development of future managers in the master's training system); V. Anushkevych (determination of stages of professional development of future managers during their master's studies); L. Khomenko (conducting in-depth interviews, questionnaires, testing of participants; workshop «Professional Development Trajectory»); B. Kolomiets (conducting a workshop «Time management of professional activity», series of training sessions for master's students «Career Planning»).

Materials and methods

The aim of the study is to create a model for professional development in the master's training system and assess its effectiveness in the educational process of a pedagogical university.

In the research process, a hypothesis was formulated:

H1: The combination of organizational and methodological conditions for professional development in the master's training system significantly and positively influences the professional development of master's students during their studies.

H2: The model of professional development significantly and positively influences the educational process at a pedagogical university.

H3: Education and qualification, professional experience, skills and competencies, networking, market conditions, career goals and ambitions, flexibility and adaptability, personal qualities and motivation, cultural and social factors influence career development for managers.

When developing the model and testing the hypotheses, the following methodological approaches were applied: target-oriented, competence-based, synthetic, systemic, activity-based, technological, resource-oriented, and qualimetric.

The experimental model was implemented at Poltava V. G. Korolenko National Pedagogical University over a period of 10 years. Sixteen instructors and 156 graduate students from the «Educational Institution Management», «Project Management» and «Innovation Management» programs participated.

The experimental model was implemented over a ten-year period at Poltava V.G. Korolenko National Pedagogical University. The study involved a total of 156 graduate students (68% female, 32% male) enrolled in master's programs in Educational Institution Management, Project Management, and Innovation Management, as well as 16 instructors directly engaged in the implementation and supervision of the model. Participants ranged in age from 22 to 35 years, representing a typical demographic of postgraduate teacher-training institutions. Inclusion criteria for student participants included: enrollment in the above-listed master's programs; voluntary consent to participate in the study; and active engagement in program activities. Exclusion criteria included: withdrawal from the university; or refusal to provide informed consent. Faculty participants were selected based on their direct involvement in program coordination and their readiness to adopt and evaluate new methodological approaches in the educational process.

The following research methods were used in our study:

Theoretical methods: analysis of scientific literature and regulatory documents; synthesis, comparison, generalization, and systematization of data

to clarify the concept of «professional development of a future manager» and define structural blocks for the model and organizational-methodological conditions for professional development.

Empirical methods: educational observation, surveys, testing (Google Forms), in-depth interviews (last 30-60 minutes; questions to identify factors that influence the manager's career development; questions to assess the quality of the model); a pedagogical experiment to test the effectiveness of the model of professional development; and qualimetric modeling to assess the quality of organizational-methodological conditions in the master's training system.

Statistical methods: quantitative and qualitative analysis of research findings using statistical validation methods (such as the Pearson's chi-square test) to confirm the results' reliability.

Results and discussion

The current methodology for training future managers requires adjustments to establish a model of professional development as a strategy for fundamental enhancement of master's training. This need is driven by the rapid development of technology and the rising qualification demands for instructors teaching relevant educational components. Adapting to these changes involves developing new approaches, conditions, and training methodologies for future managers, as well as methods for constructing their individual professional development paths. Special attention should be given to defining the organizational and methodological conditions necessary for professional development in the master's training system and setting criteria for evaluating their effectiveness.

Based on an analysis and synthesis of the literature, it was established that evaluation is a process of forming conclusions by comparing quantitative indicators from different sources against set standards. Evaluation in the context of organizational and methodological conditions for professional development in the master's system involves using collected data (via various diagnostic tools) to form an evaluative judgment about the level of knowledge, understanding, awareness, and practical application of skills by future managers.

Our analysis of scientific literature allowed us to identify several organizational and methodological conditions for professional development in the master's training system: enhancing future managers' motivation for career planning; establishing pedagogical workshops within the graduating department to create an individualized professional development trajectory

for each future manager; developing and implementing methodologies for professional development in the master's training system.

Given the complexity and multifaceted nature of the research problem, one of the solutions is modeling mechanisms for implementing these organizational-methodological conditions. From our analysis of previous research, we conclude that the model for professional development should incorporate the learning process in conjunction with the informational, cultural-educational, and social environment, as well as simulate the characteristics of an effective professional training system.

Professional development for future managers is defined as a holistic, dynamic process of acquiring both formal and informal experience during graduate studies. This process fosters stable motivation, readiness for self-education and improvement, the ability to perform new roles, and reflects a unity between current accomplishments and future potential (Fig. 1).

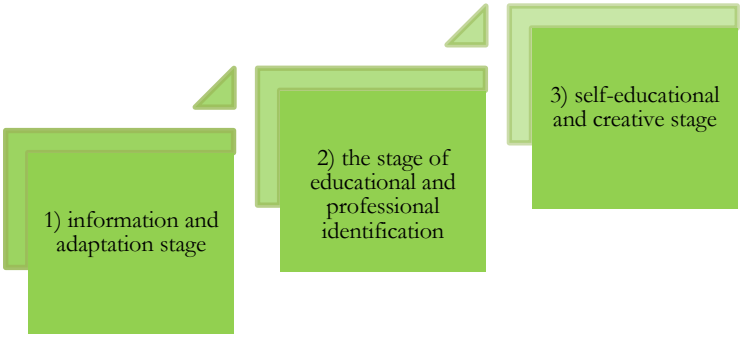


Fig. 1. Stages of professional development of future managers during their master's studies

The stages of professional development for future managers during master's studies are as follows:

Information-adaptation stage: (first two months of studies) focuses on adapting students to the professional-educational environment, mastering fundamental and specialized knowledge in management, stimulating educational activities, and providing an adequate information base. The primary activity is academic, building the knowledge necessary for the competencies outlined in the educational program.

Educational-professional identification stage: (throughout the first year of master's studies) focuses on the development of cognitive and professional abilities, motivation, and self-identification as future managers. The primary activities are semi-professional, involving the acquisition of knowledge and skills essential for future professional tasks.

Self-educational-creative stage: centers on self-education, self-analysis, self-assessment, and the formation of an individualized professional development trajectory. Activities include practical experience, thesis writing, and acquiring managerial skills for future roles in organizations.

To provide a comprehensive understanding of how organizational-methodological conditions are implemented, we developed a model consisting of three blocks: methodological-target, content-methodological, and control-diagnostic.

Methodological and target block. In developing a model of professional development of future managers in the master's training system, we outlined the goal (to implement a set of organizational and methodological conditions for the professional development of future managers in the master's training system) and identified the following methodological approaches:

− targeted approach as a focus on the final result (raising the level of activity of the pedagogical university in the direction of implementing organizational and methodological conditions for the professional development of future managers in the master's training system);

− competence approach as the focus of professional training of future managers on achieving the formation of certain competencies, program learning outcomes, as well as on creating an optimal system of professional development of future managers in the framework of master's training;

− synthetic approach, which makes it possible to build a holistic system of professional development of future managers during their master's studies and study its functioning in the real educational process;

− a systematic approach that makes it possible to apply system analysis (interaction of scientific knowledge and practical applications) for a thorough study of the system of organizational and methodological conditions for the professional development of future managers in the master's program; system analysis uses carefully developed methods and procedures based on modern scientific achievements that can be used in the study of the model;

− activity approach, which allows to consider the process of professional development of future managers in the system of master's training as a joint educational and consulting activity of scientific and pedagogical staff and students, aimed at achieving a high level of formation of competencies defined by the standard, professional development, assistance to students in improving learning outcomes, improving the entire didactic process;

− a technological approach that focuses teachers on mastering various variable technologies for the professional development of future

managers in the master's program, digital technologies and their use in the learning process and organization of self-education activities;

− resource-based approach, which outlines the possibilities of using a wide range of pedagogical technologies of resource-based learning, which include a set of professional development methods, in particular, in the context of the digitalized educational process: educational projects, cloud technologies, mind mapping, web quests, kaizen technology, student portfolio, etc.

− qualimetric approach, which leads to the use of pedagogical qualimetrics (algorithms for creating factor-criterion models for assessing the quality and effectiveness of certain organizational and methodological conditions) (Yelnikova, 2019).

The implementation of organizational and methodological conditions for the professional development of future managers in the master's training system is based on a number of didactic principles that reflect the effectiveness of the learning process: scientific, systematic and consistent, solid knowledge, accessibility and visibility, individualization of learning, control and correction of knowledge, the connection between theory and practice, optimization of learning (Kononets et al., 2020; Fedorova & Yelnikova, 2021). The model block also reflects the stages of professional development of future managers during their master's studies: 1) adaptation stage; 2) stage of educational and professional identification; 3) self-educational and creative stage.

The **content and methodological block** contains organizational and methodological conditions as the core of the model, which reflects a set of tools that ensure its effective practical implementation, functioning and further development at a pedagogical university.

Increasing the motivation of future managers to plan their careers as the first organizational and methodological condition is realized through motivational meetings of students with successful managers; organizing a series of training sessions for master's students «Career Planning» (career planning is a systematic process of defining career goals, developing strategies and plans to achieve these goals, as well as adapting to changes in the professional and personal sphere); developing mentoring and coaching programs by the department's teachers, holding consultation sessions. It is advisable to involve scholars, practitioners, education managers, and project managers in such events, who will adequately cover the key issues of the relevant topics and contribute to the acquisition of the necessary practical skills.

The creation of pedagogical workshops at the graduate department for the formation of an individual trajectory of professional development of a future

manager as the second organizational and methodological condition defines the following implementation tools: pedagogical workshops of teachers, the topics of which relate to the formation of their own trajectory of professional development of a future manager: «Time Management of Professional Activity», «Professional Development Trajectory», «Self-Education of a Successful Manager», «Digital Tools of a Successful Manager», etc.

For example, the pedagogical workshop «Time Management of Professional Activity» focuses on the following topics (Fig. 2).

Thus, as part of the work on topic 7 «My professional development: increasing the efficiency of time use», it is advisable for master's students to conduct a training «Mobile office of the manager», prepare and hold a round table «Information technology in time management», work in a computer class on the practical task «Creating a personal system of control and accounting of time costs», «Create a mental map 'How to set a goal' and discuss various situational tasks for which time management technologies should be used.



Fig. 2. Topics of the pedagogical workshop «Time management of professional activity»

The development and application of methods for the professional development of future managers in the master's training system as the third organizational and methodological condition is implemented by a number of methods, such as the SMART method for setting goals (Specific, Measurable, Achievable, Relevant, Time-bound); career plans and diagrams; mind mapping; kaizen; professional trainings and courses from top managers; portfolios; projects; cloud technologies, etc. It is advisable to focus on time

and project management platforms such as Todoist, Notion, Trello, Asana, Microsoft To Do, etc.

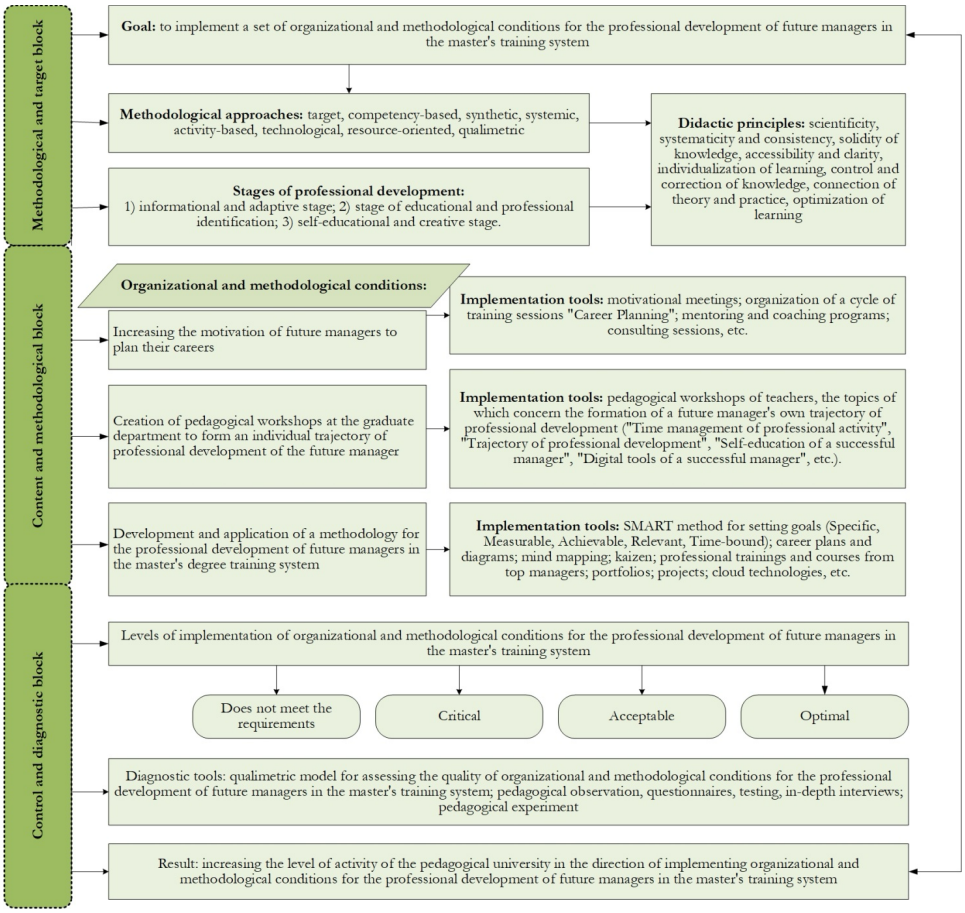


Fig. 3. Model of professional development of future managers in the system of master's training

The study found that each of the identified organizational and methodological conditions interacts with others, and without this relationship it cannot be effectively implemented. These conditions are part of a holistic model that contributes to the successful professional growth of students and the development of their professional competence, as well as the professional development of teachers who will be able to organize the professional development of future managers in the master's training system.

*The **control and diagnostic block*** reflects the levels of implementation of organizational and methodological conditions for the professional

development of future managers in the master's training system (does not meet the requirements, critical, acceptable, optimal). The content of this block includes diagnostic tools (qualimetric model for assessing the quality of organizational and methodological conditions for the professional development of future managers in the master's training system; pedagogical observation, questionnaires, testing, in-depth interviews; pedagogical experiment) and the result (improving the level of activity of a pedagogical university in the direction of implementing organizational and methodological conditions for the professional development of future managers in the master's training system) (Fig. 3).

Throughout the model's implementation, various factors influencing career development were identified, including education and qualifications, professional experience, skills and competencies, networking, market conditions, career goals and ambitions, flexibility and adaptability, personal qualities and motivation, as well as cultural and social factors. The data collected from a survey are presented in Table 1.

Table 1. Factors influencing career development

	Education and qualifications	**Professional experience**	**Skills and competencies**	**Network of contacts (networking)**	**Market conditions**	**Career goals and ambitions**	**Flexibility and adaptability**	**Personal qualities and motivation**	**Cultural and social factors**	**Total**
Lecturers	3	2	2	1	1	1	1	3	2	16
Undergraduate students	31	24	22	4	5	6	5	30	29	156
Total	34	26	24	5	6	7	6	33	31	172

Using Pearson's chi-square test, we conducted an empirical distribution analysis and formulated the following hypotheses: H_0: there is no significant difference between the distributions; H_1: there is a substantial difference between the distributions. Each participant indicated the most influential factor for their career development, with results in Table 1. We tested for significant differences in the influence of career factors between instructors and students, assuming H_0 that there is no difference between distributions.

Table 2. Presents theoretical frequencies for each group

	Education and qualifications	Professional experience	Skills and competencies	Network of contacts (networking)	Market conditions	Career goals and ambitions	Flexibility and adaptability	Personal qualities and motivation	Cultural and social factors
Lecturers	5,44	4,16	3,84	0,8	0,96	1,12	0,96	5,28	4,96
Undergraduate students	53,04	40,56	37,44	7,8	9,36	10,92	9,36	51,48	48,36

Calculating the empirical chi-square (χ^2) value, we obtained: $\chi 2=52.604$

With degrees of freedom $V=(2-1)(9-1)=8$ the critical value for $P=0.002$ is 24.3. Since the calculated χ^2 exceeds this threshold, the null hypothesis is rejected, indicating a significant difference in how career factors impact instructors and students.

For assessing the quality of organizational-methodological conditions, a qualimetric model was applied, shown in Table 3.

Table 3. Qualimetric model for assessing the quality of organizational and methodological conditions for the professional development of future managers in the master's degree program

Factors	Weight of factors	Criteria	Weight of criteria	Degree of manifestation of criteria	Degree of manifestation of factors
increasing the motivation of future managers to plan their careers	0,41	motivational meetings	0,25	0,75	0,1748
		organizing a series of training sessions on Career Planning	0,26	1	
		mentoring and coaching programs	0,27	0,75	
		counseling sessions	0,22	0,5	
creating pedagogical workshops at the graduate department to shape the individual trajectory of the future manager's professional development	0,39	pedagogical workshop «Time management of professional activity»	0,23	0,25	0,2751
		pedagogical workshop «Trajectory of professional development»	0,35	1	
		pedagogical workshop «Self-education of a successful manager»	0,23	0,75	
		pedagogical workshop «Digital tools of a successful manager»	0,15	0,5	
development and application of methods of professional development of future managers in the system of master's training	0,28	SMART method for setting goals (Specific, Measurable, Achievable, Relevant, Time-bound); career plans and diagrams	0,31	1	0,401625
		mind mapping; projects; cloud technologies	0,42	1	
		kaizen, portfolio	0,25	0,75	
		professional trainings and courses from top managers	0,46	0,5	
Result					0,851525

The qualimetric model summarized in Table 3 is flexible and adaptable to local conditions by customizing criteria and indicators. In our model, each factor was assigned content-based criteria with a scale to determine the level of each criterion's manifestation (Yelnikova, 2019):

0.00 – criterion is not manifested;
0.25 – minor manifestation;
0.50 – criterion meets 40%-60% of requirements;
0.75 – criterion meets 61%-75% of requirements;
1.00 – criterion meets 76%-100% of requirements.

Sixteen instructors from the pedagogical university participated in the survey and ranking. To determine the activity level in implementing the organizational-methodological conditions, we applied the following scale:

< 0.5 – inaction or failure to meet modern requirements;
0.5 – critical level;
0.5-0.75 – acceptable level (meets current requirements);
0.75-1.0 – optimal level (self-development mode).

We determined that data saturation had been achieved when successive interviews and observations failed to yield new insights or themes relevant to the development and evaluation of the proposed model. After analyzing responses from approximately 85% of the participants, recurring patterns and stable thematic categories were consistently observed. Additional data collected from the remaining participants confirmed existing findings without introducing substantial novel elements. This indicates that the information gathered was sufficient to support the conclusions of the study and that theoretical saturation was reached.

The final calculated index was 0.85 (compared to 0.41 before the experiment), indicating that Poltava V. G. Korolenko National Pedagogical University level in implementing these conditions for professional development is optimal, meeting current demands and fostering self-development.

Thus, this study makes an important contribution to the field of international education, in particular in the field of manager training, thanks to the following new and valuable aspects:

An innovative integrated model of professional development of managers. For the first time, a holistic model is proposed, which systematically covers three key blocks - methodological-target, content-methodological, and control-diagnostic. This approach ensures complexity and interdisciplinarity, which is a current trend in international pedagogical practice.

Adaptability to the global context. The model is suitable for implementation in master's programs of different countries, in particular in educational management, project management and innovation. This opens the way to its international application within the framework of educational reforms and unification of approaches to management education.

Improving educational management through methodological renewal. The combination of such approaches as target-oriented, competence-based, synthetic, systemic, activity-based, technological, resource-oriented, and qualimetric demonstrates a progressive approach to the formation of managerial competencies, which meets European and world educational standards.

Support for individualization of learning. The proposed organizational and methodological conditions - in particular, the creation of pedagogical workshops and the development of individual trajectories - meet the modern demand for personalized education, which is gaining relevance in the international educational space.

Practical orientation and increased motivation. Orientation to career planning and professional self-determination allows us to ensure not only the academic, but also the applied effect of training future managers.

These elements allow us to consider the research a significant contribution to the modernization of master's education in the field of management, which can be useful both for the countries of the post-Soviet space and for European and global educational systems.

Conclusions

The results of our research support the creation of an integrated model for the professional development of future managers within the master's training system. This model consists of three interconnected blocks: methodological-target, content-methodological, and control-diagnostic. It can serve as a basis for the fundamental strategy of master's level training for managers in pedagogical universities, specifically in programs such as «Educational Institution Management», «Project Management» and «Innovation Management». Additionally, the outlined methodological approaches (target-oriented, competence-based, synthetic, systemic, activity-based, technological, resource-oriented, and qualimetric) and organizational-methodological conditions (enhancing motivation for career planning; establishing pedagogical workshops within the graduating department to support individual professional development trajectories; and developing and applying methodologies for professional development in the master's training system) facilitate effective training for future managers through optimized organizational conditions.

The effectiveness of the model was validated through statistical methods and qualimetric modeling, both of which confirmed the quality of organizational-methodological conditions for the professional development of future managers in the master's training system. The findings demonstrate

that with the implementation of the proposed model, the operational level of Poltava V. G. Korolenko National Pedagogical University in realizing these conditions is optimal not only meeting present-day requirements but also transitioning toward self-development.

Thus, our research confirms the following hypotheses: the combination of organizational-methodological conditions for professional development in the master's training system significantly and positively impacts students' professional growth during their graduate studies; the model for professional development has a substantial positive effect on the educational process in pedagogical universities.

Education and qualifications, professional experience, skills and competencies, networking, market conditions, career goals and ambitions, adaptability, personal qualities, motivation, as well as cultural and social factors, all influence managers' career development.

We see future research directions in thoroughly analyzing the principles for implementing organizational-methodological conditions for professional development in the master's training system, which form the basis for the enhancement of this process using a variety of didactic tools aimed at training competitive managers. Model provides a solid foundation for strategic training in educational management, project management, and innovation leadership. The research contributes novel methodological approaches – such as target-oriented, competence-based, synthetic, systemic, activity-based, technological, resource-oriented, and qualimetric perspectives – alongside effective organizational-methodological conditions, including career motivation enhancement, pedagogical workshops, and personalized development trajectories. The proposed framework aligns with global educational standards and offers a scalable, adaptable strategy for improving managerial education across diverse international contexts.

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Consent to participate: Informed consent was obtained from all individual participants included in the study.

Authors' contributions: These authors contributed equally to this work. All authors contributed to the study conception and design.

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