



ICT SKILLS AND COMPETENCIES AMONG TEACHERS

ГОТОВНОСТЬ ПЕДАГОГОВ К ИНФОРМАТИЗАЦИИ

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Specifics of preparing teachers for the mentoring programs implementation in a digital educational environment

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Abstract. *Problem statement.* The relevance of the study stems from the fact that mentoring in today's school is increasingly implemented within a digital educational environment and requires teachers not only to be methodologically prepared to support colleagues, but also to be able to apply digital tools in a well-grounded manner and to design and evaluate digital educational resources. Traditional forms of professional development do not always ensure a transition from general familiarity with digital services to their pedagogically sound use in mentoring practice. An additional challenge arises from the need to combine mentoring, methodological, communicative, and analytical functions in teachers' work under conditions of educational digitalization. A study presented is aimed at substantiating the need to develop new approaches to the provision of continuing professional education for teacher-mentors. *Methodology.* The study employs theoretical and methodological analysis, as well as the synthesis of fundamental scholarly works related to the research problem. The proposed theoretical approaches served as the basis for the design of the professional development program The Use of Digital Tools in the Work of the Teacher-Mentor. The experimental work is conducted at the Municipal Institution of Continuing Professional Education "Educational and Methodological Center" of the Lyubertsy Urban District, Moscow Region. Teachers of the urban district participate in the piloting of the continuing professional education program. *Results.* The study establishes that the need to develop specialized teacher-training programs for mentoring in a digital educational environment is determined by a combination of factors: the increasing complexity of the professional functions of the teacher-mentor; insufficient digital and methodological competence among some teachers; the need of educational institutions for manageable and reproducible mentoring practices; and the necessity of placing mentoring activity within a framework of systematic monitoring and analytics. It is shown that such programs should include the following areas of teacher-mentor preparation: the evaluation

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of the quality of digital educational resources, as well as their design and methods of pedagogical application. *Conclusion*. It is substantiated that an effective teacher-training program for mentoring in a digital educational environment should have a modular structure, a practice-oriented character, and should include regulatory, methodological, digital, and diagnostic components. It should also provide for a project-based form of final assessment and the use of distance learning technologies. Such an approach contributes to the development of teachers' capacity to design and implement mentoring as an integrated system within the digital educational environment.

Keywords: mentoring, mentoring program, teacher-mentor, continuing professional education for teachers, digital competence, digital educational environment, digital educational resources

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Особенности подготовки учителей к реализации программ наставничества в цифровой образовательной среде

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Аннотация. *Постановка проблемы.* Актуальность исследования определяется тем, что наставничество в современной школе все в большей степени реализуется в цифровой образовательной среде и требует от учителя не только методической готовности к сопровождению коллег, но и умения обоснованно применять цифровые инструменты, проектировать и оценивать цифровые образовательные ресурсы. Традиционные формы повышения квалификации не всегда обеспечивают переход от общего знакомства с цифровыми сервисами к их педагогически корректному использованию в наставнической практике. Дополнительную сложность создает необходимость совмещения наставнических, методических, коммуникативных и аналитических функций педагога в условиях цифровизации образования. Представленное исследование направлено на обоснование необходимости разработки новых подходов к реализации дополнительного профессионального образования педагогов-наставников. *Методология.* Применяется теоретико-методологический анализ и обобщение фундаментальных научных работ по проблеме исследования. Предложенные теоретические подходы положены в основу разработки программы повышения квалификации «Применение цифровых инструментов в деятельности педагога-наставника». Опытно-экспериментальная работа проводится на базе муниципального

учреждения дополнительного профессионального образования «Учебно-методический центр» городского округа Люберцы Московской области. В апробации программы дополнительного профессионального образования принимают участие педагоги городского округа. *Результаты.* Установлено, что необходимость разработки специальных программ подготовки учителей к реализации наставничества в цифровой образовательной среде обусловлена совокупностью факторов: усложнением профессиональных функций педагога-наставника; дефицитом цифровой и методической компетентности части учителей; потребностью образовательных организаций в управляемых и воспроизводимых практиках наставничества; необходимостью перевода наставнической деятельности в режим системного мониторинга и аналитики. Показано, что программы должны включать такие направления подготовки педагогов-наставников, как оценка качества цифровых образовательных ресурсов, разработка и методика их применения. *Заключение.* Обосновано, что эффективная программа подготовки учителей к реализации наставничества в цифровой образовательной среде должна иметь модульную структуру, практико-ориентированный характер, включать нормативный, методический, цифровой и диагностический блоки, предусматривать проектную форму итоговой аттестации и использование дистанционных образовательных технологий. Такой подход способствует формированию способности педагогов проектировать и реализовывать наставничество как целостную систему в условиях цифровой образовательной среды.

Ключевые слова: наставничество, программа наставничества, педагог-наставник, дополнительное профессиональное образование педагогов, цифровая компетентность, цифровая образовательная среда, цифровые образовательные ресурсы

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Problem statement. In the context of the digital transformation of education, the preparation of teachers for the implementation of mentoring programs has become an especially pressing issue. On the one hand, the digital educational environment expands opportunities for teacher support, enables distance and blended modes of interaction, and makes it possible to use platforms, digital resources, communication services, and analytics tools. On the other hand, the digital environment itself complicates the professional role of the mentor, as it requires not only the transfer of experience but also proficiency in digital communication tools, the ability to design individualized pathways, organize collaborative work, and select safe and pedagogically sound digital solutions [1; 2]. The need to develop specialized professional development programs arises from the fact that digitalization changes the very nature of teachers' professional activity. Under these conditions, the traditional approach to education is no longer sufficient,

since information flows intensify, new forms of activity emerge, and the informatization of education requires the renewal of content, forms, methods, and means of instruction [3]. This fully applies to mentoring as well: a mentor can no longer limit their role to face-to-face consultation and the demonstration of personal experience, because contemporary support practices require competence in digital tools for interaction, navigation, and analysis.

Contemporary educational policy also directs the education system toward the development of mentoring¹ individualized support trajectories, and the use of digital infrastructure. In studies devoted to the digital resource Mentoring Center, it is emphasized that supporting the professional development and retention of young teachers in the profession requires the design and implementation of modern variable models of mentoring that draw on the resources of the digital educational environment. An analysis of the regulatory framework demonstrates that the digital educational environment is becoming one of the key mechanisms for motivating, adapting, supporting, and retaining young teachers in the profession [4].

A major rationale for developing professional development programs is the persistent deficit in teachers' use of digital tools. C. W. Mittoo found that many teachers experience difficulties integrating digital tools into instruction, and that one of the main reasons is insufficient preparation and the lack of systematic support. The author emphasizes that schools should assume responsibility for creating technological infrastructure and training teachers, because teachers who lack sufficient technological skills encounter difficulties when using digital tools to improve their professional practice [5]. Similar conclusions are found in broader analyses of teachers' digital professional development: access to Internet resources alone does not ensure professional growth if structured support, mediation, and institutional mechanisms for integrating digital resources into professional learning are absent. The problem is therefore associated not only with a deficit of technical skills, but also with the insufficient development of teachers' capacity for the pedagogically meaningful selection of digital tools [6]. Consequently, teacher preparation for mentoring in a digital environment should focus not so much on technical familiarization with services as on developing the ability to design and implement digitally mediated mentoring as a pedagogically managed process.

The very nature of mentoring activity further heightens the need for specialized professional development programs. Mentoring requires diagnostic, communicative, ethical, design, and analytical skills. In digital settings, these are supplemented by the need to select platforms, ensure safety, organize feedback, document the digital footprint, and interpret monitoring data. The Digital Mentor's Handbook emphasizes that effective digital mentoring is built not only on technical knowledge, but also on patience, empathy, flexibility, the ability to create a safe space, to set goals, and to measure impact [7]. These qualities do not develop spontaneously; they require purposeful training.

¹ Directive of the Government of the Russian Federation No. 1264-r dated May 21, 2025, "On Approval of the Concept for the Development of Mentoring in the Russian Federation for the Period up to 2030 and the Action Plan for Its Implementation". Available from: <https://www.garant.ru/products/ipo/prime/doc/411951838/> (accessed: 09.03.2026).

The development of professional development programs in this area offers clear advantages. Such programs make it possible to systematically address professional deficits, establish a unified regulatory and methodological framework, provide teachers with ready-made scenarios and tools for digital mentoring, ensure practice-oriented learning, and incorporate mechanisms for monitoring outcomes. At the same time, their implementation is associated with several limitations. These include differences in teachers' initial levels of digital competence, unequal provision of digital infrastructure across educational institutions, time constraints, the risk of teacher overload, and the formalization of professional development, in which the digital component begins to substitute for pedagogical reflection as such [5; 8].

Thus, the problem of preparing teachers to implement mentoring programs in the digital educational environment is inherently dual in nature. On the one hand, digital transformation creates new opportunities for supporting teachers and promoting their professional development; on the other hand, it places substantially more complex demands on the mentor, demands that cannot be met without a specially designed professional development program. In this regard, the research question may be formulated as follows: What should the content and organization of a professional development program be in order to genuinely prepare teachers to implement mentoring programs in a digital educational environment, rather than merely providing an overview of individual digital services?

Methodology. The methodological framework of the program is based on the following principles and assumptions. Research on preparing teachers to work with digital educational resources emphasizes the need to structure training around professional tasks: *from the expert review and quality assessment of digital educational resources, through methods of their application, to their development, and further to the preliminary design and preparation of a pedagogically grounded technical specification* for a digital educational resource when the resource is complex and requires the participation of specialist developers [9].

The continuing professional development program developed in this study is based on V.S. Lednev's principle of double inclusion [10; 11]: According to this principle, the core components of program content are incorporated in two ways: as independent sections and as cross-cutting lines throughout the course. This makes it possible to design the program so that, for example, ethics and safety, criterion-based assessment, evidence, and the verification of results run through all practical tasks while also being addressed in dedicated topics and assessment procedures.

The course content is designed as a combination of *relatively stable and dynamic informational blocks*. Such a division makes it possible to ensure both the fundamental character of training and its relevance under conditions of rapid change in digital tools and related requirements. A.A. Kuznetsov and T.N. Suvorova emphasize the need for the systematic updating of teachers' competencies in the context of the continuous development of ICT and AI [12]. Within the logic of the present program, this means that the stable components include criteria, algorithms, document templates, ethical and legal constraints, and methodological approaches,

whereas the dynamic components include specific services, working techniques, tool versions, and typical scenarios of application.

The course is also built on the principle of *pedagogical appropriateness* in the use of digital resources: digital educational resources are employed not for reporting purposes, but for solving methodological tasks that cannot be effectively addressed without them.

*The program's regulatory and ethical framework is shaped by the requirements of legislation on education*², and personal data as well as by self-regulatory codes of ethics³ in the field of artificial intelligence and sector-specific recommendations on AI in education [13].

When designing the architecture of the digital mentoring office, the study relies on the *principle of the functional completeness of components*, substantiated by V.S. Lednev within the theory of educational content [10]. According to this principle, any educational system must possess a set of elements that is both necessary and sufficient for its stable functioning. In the contemporary context of digital didactics [14] this approach is transformed into a requirement for the technological richness and functionality of the educational environment. In mentoring, this principle is realized through the integration of a mandatory technological minimum: communication tools, services for collaborative activity, cloud-based storage for materials, and monitoring and analytics modules. Thus, the design of a digital mentoring ecosystem confirms the invariance of systemic principles, which retain their fundamental significance in the transition from the traditional to the digital educational paradigm.

The method of modeling the professional development program was used to translate the identified theoretical provisions into a practice-oriented course structure. In this respect, the program model was understood as a means of integrating the regulatory, content-related, technological, and diagnostic components of teacher preparation. This approach made it possible to view the program not as a list of topics, but as a specially organized system for developing teachers' readiness to implement mentoring programs in the digital educational environment.

Results and discussion. The findings of the study make it possible to argue that teacher preparation for the implementation of mentoring programs in the digital educational environment should have a clearly defined professional focus. The issue is not the expansion of teachers' general digital literacy, but the development of their ability to use digital tools to address specific mentoring tasks: identifying needs and deficits, designing individualized pathways, organizing a mentoring session, selecting and evaluating digital educational resources, coordinating collaborative activity, documenting results, and analyzing them subsequently. *The Use of Digital Tools in Teacher-Mentor Practice* from traditional ICT courses,

² Decree of the President of the Russian Federation No. 490 dated October 10, 2019, "On the Development of Artificial Intelligence in the Russian Federation" (together with the National Strategy for the Development of Artificial Intelligence for the Period up to 2030). Available from: https://www.consultant.ru/document/cons_doc_LAW_335184/ (accessed: 09.03.2026).

³ Code of Ethics in the Field of Artificial Intelligence. Association Artificial Intelligence Alliance. Available from: <https://a-ai.ru/> (accessed: 09.03.2026).

which often focus on user-level operations without methodologically transferring them to mentoring practice. The conceptual idea of the program is to transform mentoring into a managed practice within the digital educational environment, where the choice of digital tools is understood not as an end in itself, but as a means of solving methodological tasks. This is documented in the form of reproducible regulations, scenarios, and artifacts: a meeting log, a development plan, a digital footprint, and a package of materials. In performing a triune function, digital tools act as a means of instruction, an object of study, and an instrument of the teacher's professional activity.

The program's target audience includes teachers in general education institutions, teacher-mentors, methodologists, heads of methodological associations, and deputy principals for academic affairs. Such coverage makes it possible to create a unified information and meaning-making space for the implementation of mentoring strategies at different levels of educational management. The total workload of the program is 72 academic hours, which makes it possible to address both theoretical aspects and practical skills in depth. Training is organized in a blended format with the active use of distance learning technologies; at the same time, the course architecture allows for a transition to a fully online format without loss of educational quality.

The aim of the course is defined as the enhancement of teachers' professional competencies in the use of digital technologies for mentoring and methodological support in the contemporary digital educational environment. In accordance with this goal, the program is oriented toward the formation of a set of professional actions, knowledge, skills, and competencies necessary for organizing mentoring activity in digital format.

These *professional actions* include the following:

- making a well-grounded selection of programs and teaching-methodological support, including digital educational resources⁴;
- carrying out professional activity in accordance with the requirements of the federal state educational standards for primary, basic, and secondary general education;
- developing skills related to information and communication technologies.

The substantive content of the course also presupposes the development of knowledge about the priority directions in the development of the educational system of the Russian Federation, laws and other regulatory legal acts governing educational activity, the foundations of teaching methodology, the principles of the activity-based approach, types and techniques of contemporary pedagogical technologies⁵; and teaching tools and their didactic potential⁴.

The skills to be developed include general user, general pedagogical, and subject-specific ICT competence; the design and implementation of individualized

⁴ Order of the Ministry of Labor of Russia No. 544n dated October 18, 2013, "On Approval of the Professional Standard 'Teacher (Pedagogical Activity in Preschool, Primary General, Basic General, and Secondary General Education) (Educator, Teacher)'"'. Available from: <https://mintrud.gov.ru/docs/mintrud/orders/129> (accessed: 09.03.2026).

educational pathways, development programs, and individually oriented educational programs with due regard for learners' age and personal characteristics; and the development and application of contemporary psychological and pedagogical technologies based on knowledge of patterns of personality development and behavior in real and virtual environments⁵. Thus, the program is oriented not only toward the technical mastery of digital tools, but also toward their pedagogically meaningful use in mentoring activity.

As a result of completing the course, participants are expected to develop universal, general professional, and professional competencies.

Universal competencies:

- *systemic and critical thinking (UC-1)*: the ability to search for, critically analyze, and synthesize information, and to apply a systems approach to solving professional tasks;
- *Project design and implementation (UC-2)*: the ability to determine the range of tasks within a defined goal and to select optimal ways of solving them in light of current legal norms, available resources, and constraints;
- *self-organization and self-development*, including health preservation (UC-6): the ability to manage one's time and to design and implement a trajectory of self-development based on the principles of lifelong learning.

General professional competencies:

- *legal and ethical foundations of professional activity (GPC-1)*: the ability to carry out professional activity in accordance with legal regulations in the field of education and the norms of professional ethics;
- *development of basic and supplementary educational programs (GPC-2)*: participation in the design of basic and supplementary educational programs and in the development of their individual components, including through the use of ICT;
- *scientific foundations of pedagogical activity (GPC-8)*: the ability to carry out pedagogical activity on the basis of specialized academic knowledge;
- *information and communication technologies for professional activity (GPC-9)*: the ability to understand the principles underlying contemporary information technologies and to use them in solving professional tasks⁶.

Professional competencies:

- *competencies in pedagogical activity (PC-2)*: the ability to use contemporary teaching and diagnostic methods and technologies;
- *competencies in project activity (PC-10)*: the ability to design trajectories of one's own professional growth and personal development;

⁵ Order of the Ministry of Health and Social Development of the Russian Federation No. 761n dated August 26, 2010, "On Approval of the Unified Qualification Handbook for Positions of Managers, Specialists, and Employees, Section 'Qualification Characteristics of Education Workers'". Available from: <https://rg.ru/2010/10/20/teacher-dok.html> (accessed: 09.03.2026).

⁶ Order of the Ministry of Education and Science of Russia No. 121 dated February 22, 2018 (as amended on February 27, 2023), "On Approval of the Federal State Educational Standard of Higher Education – Bachelor's Degree Program in 44.03.01 Pedagogical Education". Available from: https://www.consultant.ru/document/cons_doc_LAW_293567/ (accessed: 09.03.2026).

- *competencies in scientific and methodological activity:*
 - a) PC-42: the ability to disseminate advanced professional experience within a professional community;
 - b) PC-44: the ability to apply and expand existing knowledge in the process of structuring materials that support educational activity;
 - c) PC-46: the ability to navigate contemporary technologies and programs with due regard for the needs of the educational environment;
 - d) PC-51: the ability to transform the results of analysis and evaluation of professional activity into teaching-methodological recommendations⁷.

The content of the continuing professional development program *The Use of Digital Tools in Teacher-Mentor Practice* is organized into eight modules, the content of which may also be integrated into teacher retraining and professional development programs in related fields. The modular principle ensures flexibility of the learning trajectory, while the emphasis on practice allows participants to incorporate newly acquired knowledge directly into their professional activity.

Module 1. *The institution of mentoring: historical development, methodology, and regulatory support.* This module covers the emergence of the contemporary institution of mentoring under conditions of the digital transformation of education; the regulatory and legal framework of mentoring activity in education; the target model of mentoring; the Concept for the Development of Mentoring through 2030; the specific features of organizing the professional activity of the mentor in an educational institution; intra-organizational training; the specifics of mentoring in the digital educational environment; and methods for evaluating the effectiveness of mentoring systems in general education institutions.

Module 2. *The essence, structure, and diagnostics of the teacher-mentor's personality/* This module addresses the ethical code of the mentor in the Russian Federation; types of ethical norms in mentoring; value-semantic orientations and the moral dimension of the behavior of participants in mentoring activity; criteria for selecting teacher-mentors and evaluating the effectiveness of their work; the subject-related characteristics of the teacher-mentor; diagnostics of personal qualities and skills; and the psychological profile of a potential mentor.

Module 3. *Artificial intelligence in education: regulatory and ethical foundations and safe practices of application.* This module examines the development of artificial intelligence in the Russian Federation; the national strategy; the principles of AI development and use; the goals, objectives, indicators, and implementation mechanisms of the strategy through 2030; the AI Alliance Association; the AI Code of Ethics; and the use of AI in education.

Module 4. *Evaluation and monitoring of digital mentoring practices.* This module considers the expert logic of evaluating digital educational resources in mentoring; the development of a checklist and scale for assessing selected digital material in relation to a specific mentoring task; the collection of evidence and

⁷ Moscow City University. *Professional Competencies for the Degree Program "Pedagogical Education"*. Available from: <https://share.google/ukqaOgtkiG1pMxBsF> (accessed: 09.03.2026).

analysis of the digital footprint of a mentoring session; rules for the anonymization and storage of materials; AI support for evaluation, its risks, limitations, and counterarguments; and the preparation of an expert report and improvement plan.

Module 5. *AI-supported instructional design for mentoring.* The focus here is on designing the scenario of a mentoring session; using AI as a design-support tool; creating and adapting methodological materials for mentoring support; and packaging outcomes in the form of a presentation and a micro-training session on controlling AI's influence on the quality and integrity of methodological decisions.

Module 6. *Creating original digital educational resources and media content for mentoring.* This module is devoted to the creation and pedagogical refinement of visual materials, including illustrations, diagrams, and case-based images; the production of explanatory videos or instructional videos and scripts, including those created with the help of a neuro-avatar; requirements for content; digital documentation of results; and compliance with legal and ethical restrictions in the use of AI.

Module 7. *Designing and preparing the technical specification for a multifunctional digital educational resource.* This module examines the architecture of mentoring in a digital environment; the teacher-mentor's readiness to design and prototype a digital ecosystem of interaction with the mentee; the construction of a multifunctional digital educational resource for mentoring purposes; the functional capabilities of Russian platforms for implementing mentoring activity; the MVP methodology as a principle for creating a minimum viable digital product aimed at addressing specific teacher deficits; and the possibilities offered by Russian no-code tools. Conceptually, this expansion of the course's practical component corresponds to a line of research emphasizing the need to supplement traditional teacher preparation for the creation and use of digital educational resources with a block devoted to preliminary design and the preparation of a pedagogically sound technical specification, especially for multifunctional resources requiring team-based development.

Module 8. *The mentor's digital office: integration of tools, regulations, and presentation of outcomes.* This module examines the key components of the mentor's digital office: communication, collaboration, knowledge base, storage, monitoring and analytics, and security. Particular attention is devoted to the design of office sections, roles and access rights, rules of naming and storage, the selection of domestic tools for different functions, the development of rules for working with data, including anonymization, storage, and access, as well as guidance on academic integrity, the documentation of AI involvement, and the maintenance of an AI use log.

The theoretical modules, which encompass the first three sections of the program, include lectures, independent assignments, testing, and interim assessment; their total workload is 17 hours. The practical modules, with a total workload of 55 hours, are grouped into four areas of training: evaluation of digital educational resources, methods of applying digital educational resources, teacher-led development of digital educational resources, and preparation of a technical

specification for a complex digital educational resource. This distribution of hours shifts the emphasis away from declarative familiarization with digital services toward the solution of practice-oriented mentoring tasks.

The program preserves the model of *invariant, variable, and supplementary training* described in T. A. Lavina's dissertation research [15] on teachers' continuing preparation in the field of ICT. Modules 1–3 are interpreted as predominantly invariant, that is, as covering the general foundations of the mentor's digital literacy, the conceptual framework of mentoring, and an overview of services and AI. Modules 4–7 are treated as an additional practice-oriented layer with variability ensured through the choice of services, scenarios, and an individualized project track.

The components of the digital environment identified in the program are not a random collection of tools; rather, they functionally reproduce the key support processes within the mentor-mentee system:

- *communication tools* such as messengers and forums ensure continuity of dialogue and timely support, which is critically important for addressing professional deficits in real time;
- *collaborative tools* such as interactive whiteboards and document editors enable the activity-based approach to be implemented, allowing mentor and mentee to move from discussion to the joint design of an educational product;
- *the storage of materials* in structured knowledge bases creates a digital footprint and a library of best practices, ensuring continuity of experience and rapid access to methodological models;
- *monitoring and documentation blocks* make it possible to visualize the trajectory of professional growth by recording intermediate achievements and adjusting the individualized educational pathway;
- *analytics and feedback* transform mentoring into a manageable system, making it possible to assess the effectiveness of interaction on the basis of objective data and to identify zones of stagnation in a timely manner.

The absence of any of these components undermines the functional completeness of the system, turning the digital environment from a developmental tool into a fragmented set of services.

The assessment system is designed with due regard for the participants' entry level. It presupposes basic user-level ICT competence and psychological readiness for productive work in a digital educational environment. Prior understanding of mentoring tasks or relevant mentoring experience is welcomed. Interim assessment includes independent and practical assignments oriented toward the cumulative development of outcomes.

Final assessment in the program is proposed in the form of the defense of an integrative practice-oriented portfolio project entitled *The Mentor's Digital Office*, which brings together the products of all practical modules. This format supports the double inclusion of cross-cutting lines, including ethics and safety, criterion-based assessment and evidence, design and reflection, both within each module and across the system of assessment checkpoints. The project submitted for defense

must meet criteria of relevance, quality of materials, reproducibility, validity of tool selection, completeness of the technical specification, and compliance with safety and ethical requirements. The participant's final product is a digital mentor's office created on the *Chatium* cloud platform, representing a set of applied tools and materials ready for implementation within the mentoring system of a specific educational organization.

The analysis conducted makes it possible to conclude that professional development programs in this area possess a number of clear advantages. They allow for the compensation of professional deficits, the systematization of fragmented digital experience, the transformation of mentoring from an episodic form of interaction into a reproducible model, the combination of face-to-face and distance formats, the creation of a digital footprint, and the strengthening of the rationale for selecting digital tools. International research confirms that structured digital support for teachers enhances their confidence in using digital tools and promotes more meaningful integration of technology into educational practice [5].

At the same time, a number of limitations of this type of professional development program also become evident. These include major differences in participants' initial levels of digital competence, unequal infrastructural provision across educational institutions, the risk of a technocratic shift in emphasis, teacher overload, and the danger of formal completion of the program, when final products are created according to a template but do not lead to real changes in professional practice [5; 12]. These circumstances require program design that takes into account variation in participants' starting capacities and links training to the specific tasks of the educational organization.

The findings of the study also indicate that preparation for mentoring in the digital educational environment should be grounded in an environmental approach. Its effectiveness is impossible when the digital environment itself lacks functional completeness. In international white papers devoted to the Next Generation Digital Learning Environment, the key emphasis shifts from closed systems such as older learning management systems to open digital learning ecosystems. It is argued that technology should be used to transform pedagogy rather than merely to provide technical support for traditional instruction; in this context, particular importance is attached to the connection between physical and virtual spaces, continuous communication, and expanded opportunities for collaboration [6]. In the Russian context, this corresponds to the idea of a digital mentoring ecosystem in which communication, collaborative activity, the storage of materials, and analytics form an integrated space of professional development.

Thus, teacher preparation for the implementation of mentoring programs in the digital educational environment should be designed as a specialized field of continuing professional education. Its specificity lies in the integration of methodological, digital, diagnostic, design, and ethical preparation, in the modular and practice-oriented organization of the course, and in the obligatory connection between training and the real mentoring tasks of the educational organization.

The implementation of the methodological system for training teachers in information technologies within continuing professional education for the realization of mentoring programs in a digital environment has been confirmed. The program has undergone expert review and is currently being implemented at the Municipal Institution of Continuing Professional Education Educational and Methodological Center of the Lyubertsy Urban District, Moscow Region, for teachers of the district.

Conclusion. The analysis conducted and the pilot implementation carried out have shown that the development of professional development programs aimed at preparing teachers to implement mentoring programs in the digital educational environment is not optional, but an objectively necessary task of contemporary teacher education. The need for such programs is driven by changes in the professional role of the teacher-mentor, the increasing complexity of the digital educational environment, the need for systematic support of young teachers, and the existence of deficits among some teachers related to the pedagogically grounded use of digital resources. The digital environment offers substantial opportunities for mentoring support; however, these opportunities can be realized only through specifically organized teacher preparation. The analysis made it possible to establish that professional development programs of this type possess a number of strengths. They help compensate for professional deficits, integrate digital tools into actual mentoring practice, ensure the project-based character of learning, create conditions for the development of a digital footprint and analytics, and facilitate the construction of a unified methodological space within the educational organization. At the same time, their implementation requires consideration of limitations associated with the heterogeneity of the participant cohort, infrastructural deficits, the high workload of teachers, and the risk of formal assimilation of content.

The study has shown that effective preparation of teachers for the implementation of mentoring programs in the digital educational environment should be based on a number of interrelated foundations. These include modularity, practice orientation, the integration of regulatory, ethical, methodological, digital, and diagnostic components, a project-based form of final assessment, the use of distance learning technologies, and a focus on reproducible artifacts of mentoring activity.

It is of fundamental importance that such preparation be linked to teachers' real needs and deficits rather than reduced to the formal mastery of individual digital services. Accordingly, teacher preparation for mentoring in the digital educational environment may be regarded as an independent field of continuing professional education aimed at developing teachers' ability to design and implement digitally mediated mentoring as a holistic practice. Prospects for further research are associated with the pilot implementation of the proposed program in different types of educational organizations, comparative analysis of the results of its implementation, and the development of instruments for assessing teachers' professional readiness for mentoring in the digital educational environment.

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