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STRUCTURAL-CONTENT MODEL FOR FORMING THE DIGITAL COMPETENCE OF TEACHERS

Annotation. The article is devoted to the actual problems of the education system. The educational potential of digital technologies, the accelerated development of distance technologies contribute to the change of teaching methods, forms of education implementation. It is obvious that digital competence is an integral part of the professional competence of teachers, since it is important that teachers master learning technologies based on modern digital technologies, which are the driving force for improving education. This study, funded by the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan (Grant №AP09259047), reveals the prerequisites for the digital transformation of education, the importance of changing the structure of education and the organization of the educational process. General theoretical research methods were used: the study and analysis of literary data of a theoretical orientation; system-structural analysis; concretization of the role of approaches to the formation of digital competence of teachers and the development of a structural and content model for the formation of digital competence of teachers. Based on the analysis of the relevant literature, the author of the article identifies the advantages of the selected approaches to the formation of quantitative competence of teachers, their main characteristics. Approaches (systemic, activity-based, axiological, personality-oriented approaches) to the formation of digital competence. Used as the methodological basis of the study, not only do not contradict each other, but also complement each other, served as the basis for building the concept and structural and content model of the formation of digital competence of the teacher. A structural and content model of the formation of digital competence of teachers is proposed. The roles of the components of the structural and content model of the formation of digital competence of teachers are determined.

Keywords: digital technologies in education, digital pedagogical competence of teachers, model, pedagogical modeling, structural and content model of formation of digital competence of teachers.

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Мұғалімдердің цифрлық құзыреттілігін қалыптастырудың құрылымдық-мазмұндық моделі

Аңдатпа. Мақала білім беру жүйесінің өзекті мәселелеріне арналған. Цифрлық технологиялардың білім беру әлеуеті, қашықтықтан оқыту технологияларын жедел дамыту оқыту әдістерінің, білім беруді іске асыру нысандарының өзгеруіне ықпал етеді. Цифрлық құзыреттілік мұғалімдердің кәсіби құзыреттілігінің ажырамас бөлігі екені анық, өйткені мұғалімдердің білім беруді жақсартудың қозғаушы күші болып табылатын заманауи цифрлық технологияларға негізделген оқыту технологияларын игеруі маңызды. Қазақстан Республикасы Білім және ғылым министрлігінің Ғылым комитеті қаржыландырған бұл зерттеу (Грант №AP09259047) білім беруді цифрлық трансформациялаудың алғышарттарын, білім беру құрылымын өзгертудің және оқу процесін ұйымдастырудың маңыздылығын ашады. Зерттеудің жалпы теориялық әдістері ретінде теориялық бағыттағы әдеби деректерді зерттеу және талдау; жүйелік-құрылымдық талдау; мұғалімдердің цифрлық құзыреттілігін қалыптастыру тәсілдерінің рөлін нақтылау және мұғалімдердің цифрлық құзыреттілігін қалыптастырудың құрылымдық-мазмұндық моделін әзірлеу әдістері қолданылды. Тиісті әдебиеттерді талдау негізінде мақала авторы мұғалімдердің сандық құзыреттілігін, олардың негізгі сипаттамаларын қалыптастырудың таңдалған тәсілдерінің артықшылықтарын атап өтеді. Цифрлық құзыреттілікті қалыптастыруға бағытталған тәсілдер (жүйелі, әрекеттік, аксиологиялық, тұлғалық-бағдарлы тәсілдер). зерттеудің әдіснамалық негізі ретінде пайдаланылған, бір-біріне қайшы келмейді, сонымен қатар бірін-бірі толықтырады, мұғалімнің цифрлық құзыреттілігін қалыптастырудың тұжырымдамасы мен құрылымдық-мазмұндық моделін құруға негіз болды. Мұғалімдердің сандық құзыреттілігін қалыптастырудың құрылымдық-мазмұндық моделі ұсынылды. Мұғалімдердің цифрлық құзыреттілігін қалыптастырудың құрылымдық-мазмұндық моделі компоненттерінің рөлі айқындалды.

Кілт сөздер: білім берудегі цифрлық технологиялар, мұғалімдердің цифрлық педагогикалық құзыреттілігі, модель, педагогикалық модельдеу, мұғалімдердің цифрлық құзыреттілігін қалыптастырудың құрылымдық-мазмұндық моделі.

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Структурно-содержательная модель формирования цифровой компетентности учителей

Аннотация. Статья посвящена актуальным проблемам системы образования. Образовательный потенциал цифровых технологий, ускоренное развитие дистанционных

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технологий способствуют изменению методов обучения, форм реализации образования. Очевидно, что цифровая компетентность является неотъемлемой частью профессиональной компетентности учителей, поскольку важно, чтобы учителя владели технологиями обучения, основанными на современных цифровых технологиях, которые являются движущей силой улучшения образования. Данное исследование, финансируемое Комитетом по науке Министерства образования и науки Республики Казахстан (Грант № AP09259047), раскрывает предпосылки цифровой трансформации образования, важность изменения структуры образования и организации учебного процесса. Использовались общетеоретические методы исследования такие как изучение и анализ литературных данных теоретической направленности; системно-структурный анализ; конкретизация роли подходов к формированию цифровой компетентности учителей и разработка структурно-содержательной модели формирования цифровой компетентности учителей. На основе анализа соответствующей литературы автор статьи выделяет преимущества выбранных подходов к формированию количественной компетентности учителей, их основные характеристики. Подходы (системный, деятельностный, аксиологический, личностно-ориентированный подходы) к формированию цифровой компетентности, использованные в качестве методологической основы исследования, не только не противоречат друг другу, но и дополняют друг друга, они послужили основой для построения концепции и структурно-содержательной модели формирования цифровой компетентности преподавателя. Предложена структурно-содержательная модель формирования цифровой компетентности учителей. Определены роли компонентов структурно-содержательной модели формирования цифровой компетентности педагогов.

Ключевые слова: цифровые технологии в образовании, цифровая педагогическая компетентность учителей, модель, педагогическое моделирование, структурно-содержательная модель формирования цифровой компетентности учителей.

Introduction

In world practice, the term “digital transformation” is used to describe profound changes in business and organizational activities, processes, competencies and models in order to fully exploit the changes and opportunities for integrating digital technologies and their strategic and priority impact on society, taking into account current and future changes [1]. As a result of the use of modern technologies in everyday life, the digital transformation of education is inevitable [2]. It is necessary to develop this transformation, the digital age and the ability to understand and adapt in order to design an education system that is still dominated by the classical concept in today's context [3].

The digital transformation of education, the transition to digital learning technologies, the creation of conditions for their creation, the introduction of the combination of new and traditional teaching methods require solving a number of psychological, pedagogical, educational and other problems. The solution to the above tasks depends on the level of digital competence of teachers. Today scientists offer their own concepts of digital competence of teachers and models of its formation. The essence and content of the concept of digital competence was determined by the content analysis of the concepts of digital competence, pedagogical digital competence [4].

In our opinion, “digital competence is the ability of the user to freely and safely use the potential of digital devices for personal / professional purposes for searching, creating, critical assessment, processing, disseminating and transmitting information”. And “digital pedagogical competence of the teacher is the teacher's ability to effectively and safely use information and communication technologies (digital information resources, network technologies, educational platforms, cloud technologies, etc.) when working with information in educational, methodological, research activities”.

The study of the formation of digital competence of teachers is based on the definition of methodological strategies for scientific research. Methodology is a sign of the scientific organization of any activity. In pedagogy, methodology acts as a field of scientific knowledge in two aspects – a system of knowledge and a system of actions. The term "approach" is used to refer to the set of ideas, principles, methods that form the basis of problem solving. Any methodological approach to learning describes the learning objectives through a set of general principles, content and organization of the educational process, assessment of learning outcomes. Today it is obvious that the modern education model is being developed and implemented on the basis of the above methodological approaches, which harmoniously interact and complement each other. A systematic approach to our research allows us to study the formation of digital competence as a system, focusing on the integrity of the formation of digital competence and its mechanisms, highlighting the types of communication components and bringing them together into a single theoretical picture. Therefore, a systematic approach to the formation of digital competence of teachers allows you to correctly solve the research problem and develop an effective strategy for their study. A systematic approach to the study of the formation of digital competence of teachers (method of system analysis) requires consideration of all phenomena and processes in the study of this problem in such categories as "relations", "communication", "interaction". The study of the relationships between the elements of the system in the formation of digital competencies allows us to identify the factors that contribute to their formation, describe the elements, and determine the qualitative and quantitative characteristics.

Research methods: analysis, modeling, pedagogical modeling. The object of research of the article: the creation of a structural and content model of the formation of digital competence of teachers, the definition of its components. Subject of research: formation of digital competence of teachers.

Results and Discussions

Structural connections in the formation of digital competencies of the teacher reflect the interactions of the elements of the system as a whole, and the causal relationships of objects distinguish them from the leading object. This approach is defined as a phenomenon of digital competence (functions of systems, the relationship between them, the relationship of systems with the environment); as a process (stage of system development, stage of quality); as an action (the result of studying an object is a model of the researcher's work with the phenomenon under study).

Activity approach. The current approach to the formation of digital competence of teachers includes the use of forms and methods of pedagogical activity.

Axiological approach. The axiological approach to the formation of digital competence of teachers shows that the analysis of pedagogical research includes the desire to do good not only in the real, but also in the virtual world, kindness, conscience, justice, dignity, decency, responsibility and others.

Individual approach. A personality-oriented approach is a universal human phenomenon based on respect for the rights and virtues of the child when choosing an educational direction, curriculum, educational institution, etc. actions that ensure and support the development of self-organization processes, personal individuality in the implementation of digital educational technologies. Means a versatile education, consisting of concepts, principles and methods of pedagogical activity; connected with the desire of the teacher to develop professional individuality, uniqueness, reflect his subjective qualities.

The method of pedagogical modeling was chosen as one of the research methods in the development of a structurally meaningful model of the formation of teachers' digital competence.

The discovery of the concept of "pedagogical modeling" should begin with the definition of the term "model". A model is an artificially created object in the form of diagrams, physical

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structures, symbolic forms or formulas that simultaneously and approximately represent and multiply the structure, properties and relationships between the elements of the object (or phenomenon) [5].

Pedagogical modeling is the study of pedagogical objects by modeling conceptual, procedural, structural and conceptual characteristics and individual aspects of the educational process within the framework of a typical socio-cultural space at the general educational, professional or other levels. Conventionally, the models can be divided into three types: physical (close in character to the original); material-mathematical (their physical essence differs from the prototype, but a mathematical description of the state of the original is possible); logical-semiotic (consisting of special signs, symbols and structural schemes). There are no strict boundaries between these models.

Pedagogical models mainly belong to the second and third groups of the above types and they are focused on the transfer of the object in the study. And this requires a certain similarity between the model and the original. This means that there is a certain correspondence between their characteristics. This correspondence is reflected in the similarity of the component composition, the sequence of stages in the development of the pedagogical system, the preservation of the characteristics. On the other hand, the essence of the component composition depends on the field of application of modeling and specific pedagogical tasks. Apart from the similarities between the model and the original, there are some differences. The essence of modeling is the consideration of the object that differs from the original in relations that prevent direct cognition of the latter. This allows to bypass obstacles and make the object available for research. Pedagogical modeling reflects the characteristics of the existing pedagogical system in a specially created object – a model. For a specific object to be a model of another object, called the original, it must be a system, have some similarity with the original, differ in certain parameters, replacing it with certain relations in research and providing new knowledge [6, 7].

The purpose of the structural-content model, created in connection with the research problem, is the formation of the digital competence of teachers.

In accordance with the goal of the structural and content model of the formation of digital competence of teachers, we consider the theoretical and methodological foundations that guide the study.

Methodological approaches based on research in the creation of the structural-meaningful model of the formation of the teacher's digital competence: a systematic approach, an effective approach, an axiological approach, an individually-oriented approach [8].

Digital technologies in education require a teacher to have a high level of professional training for the implementation of continuous pedagogical, methodological, educational activities, continuous development and complete improvement of digital competencies. This is the basis of the professional activity of the modern teacher.

The formation of digital competence of teachers and the requirements for it are reflected in fundamental research, international and domestic regulations, as part of the requirements for professional qualifications of teachers. Therefore, in this context, issues related to the formation of the digital competence of teachers, the creation of its structural-content model and its implementation are relevant.

The structural and meaningful model of the formation of digital competence of teachers consists of the following interrelated parts: normative-target, theoretical and methodological, content-process, assessment-result (Figure 1).

The developed structural and content model is based on theoretical and methodological approaches to the formation of digital competence of teachers, the essence of digital competence, the content of its components; effective organization of the formation of digital competence of teachers (stages, content, methods, forms, tools); determination of its criteria, criteria, indicators, the choice of research methods to assess the level of its formation.

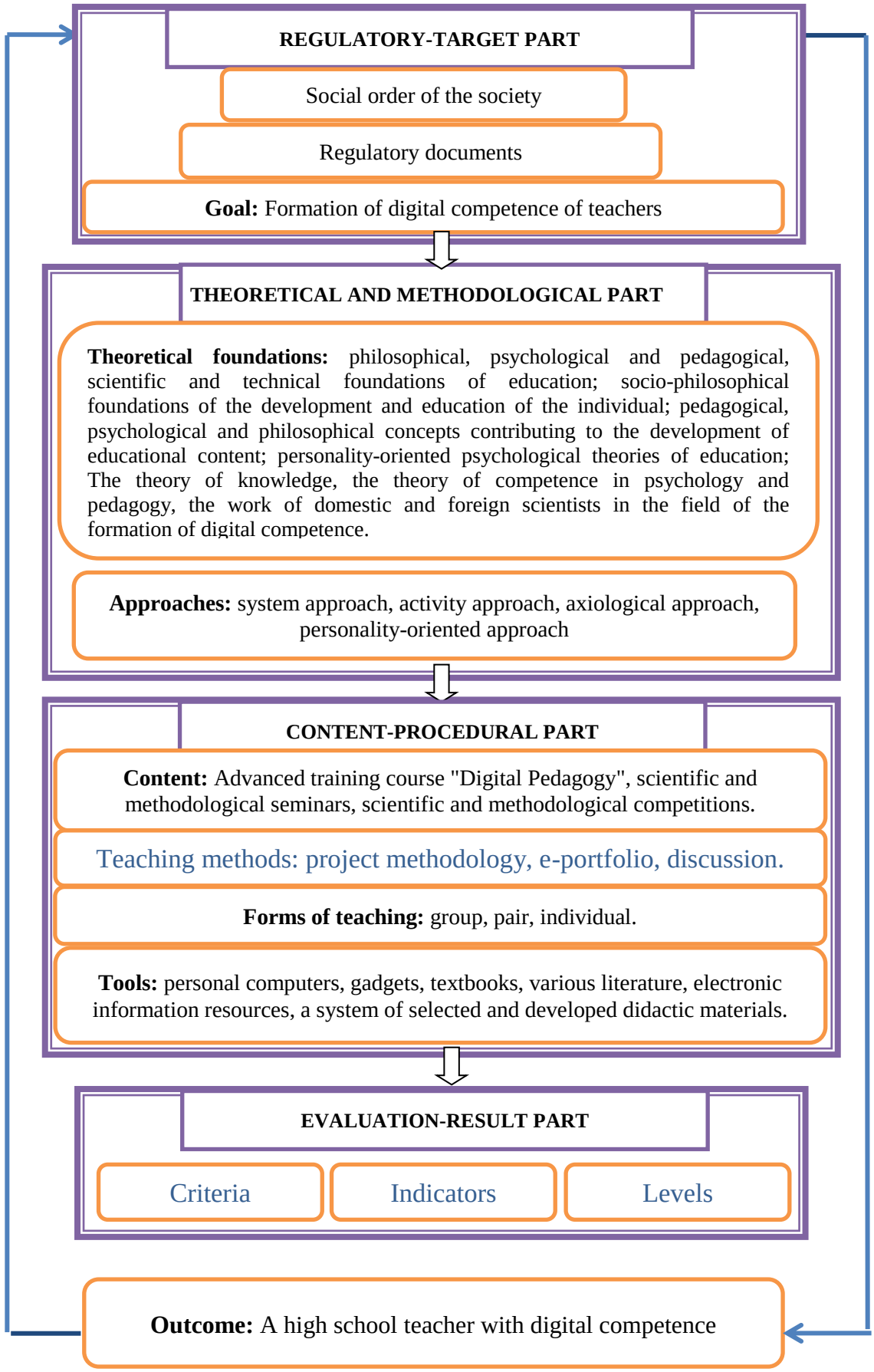

Figure 1 - Structural and meaningful model of the formation of digital competence of teachers

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The descriptive content of the parts of this structural-content model is described below.

Regulatory target block.

The purpose of the structural and meaningful model of the formation of digital competencies of teachers is to form teachers' ability to effectively and safely use information and communication technologies (digital information resources, network technologies, educational platforms, cloud technologies, etc.) in working with information in educational, methodological, research activities.

To achieve these goals, the following guiding principles have been developed in the development of the structural-content model for the formation of digital competencies of teachers:

- Digital competencies of teachers;

- The interconnection of all adherents of the model for the formation of digital competence of teachers; - the implementation of rigorous science to prevent the implementation of the process of forming the digital competence of teachers;

- Coordination of collective and individual control methods in the implementation of teaching methods aimed at the formation of digital competence of teachers, etc.

Determination of the goal and objectives of the model when developing a model of digital competencies of teachers, determination of the effective situation for the effective formation of digital competencies of teachers; analysis of the level of formation of digital competencies, analysis of implementation programs, analysis of the effectiveness of the model, correction of the model.

The target component of the model includes a system of goals and objectives for the formation of digital competence of teachers. This component manages other components; serves as a determining factor in their meaningful development.

A structural and meaningful model of the formation of a teacher's digital competence: with a focus on specific goals – the formation of a teacher's digital competence; All internal components of the model are systemically connected and have a fixed meaning; they work on the formation of digital competencies of teachers, which is reflected in integrity.

The social order determined for the education system is based on the needs of the state, society and social groups. The social order for education is very important in society. This can be the most driving force behind socio-economic change, as well as the main condition for the management of educational activities. The concept of “social demand for education” is often replaced by the concept of “social demand”. The social need for education is often spontaneous; it is a manifestation of social and personal needs arising from a complex of complex factors that are theoretically incomprehensible.

In our opinion, the formation of digital competencies of teachers is based on article 15 of the Law of the Republic of Kazakhstan “On the status of teachers”. Development of life skills, competencies, independence, creative abilities of students and pupils “at their own level, indicated in the content of the professional standard Teacher” 1) training; 2) education; 3) methodical; 4) performance of research work at a high level. The purpose and relevance of the formation of digital competence of teachers is based on international and domestic regulations:

- Incheon Declaration “Education 2030”. https://gcedclearinghouse.org/

- The structure of ICT competence of teachers. Recommendations of UNESCO. UNESCO, 2018. https://inpo.s-vfu.ru/wp-content/uploads/2020/02/rekomendatsii-YUNESKO.pdf

- The Law of the Republic of Kazakhstan “On Education” of July 27, 2007 №319-III (as amended and supplemented on July 4, 2018);

- On approval of standard qualification characteristics of teaching staff positions and persons equated to them. Order of the minister of education and science of the republic Of Kazakhstan from July 13, 2009 of No. 338;

- The state standard of compulsory education of all levels of education, approved by the order of the Republic of Kazakhstan dated October 31, 2018 №604;

- The European Qualifications Framework was adopted on April 22, 2008 by the European Parliament and the Council;

- "National Qualifications Framework" approved by the joint Order of the Minister of Education and Science of the Republic of Kazakhstan dated September 28, 2013 No. 444 and the Acting Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated September 24, 2013 No. 373-pm;

- On the approval of the state program "Digital Kazakhstan". Resolution of the Government of the Republic of Kazakhstan dated December 12, 2017 No. 827;

- "On the status of a teacher" - on the draft Law of the Republic of Kazakhstan. Resolution of the Government of the Republic of Kazakhstan dated August 31, 2019 No. 645;

- Professional standard "Teacher". Order of the Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated June 8, 2017 No. 133.

Prerequisites for the model: social structure of society, requirements for the professional activities of teachers, their desire for professional growth, personal / professional needs, as defined in international and national regulations.

In accordance with the purpose of the research, the theoretical and methodological part describes the theoretical foundations of the formation of digital competence of teachers and methodological approaches to research. Theoretical foundations of the structural and meaningful model of the formation of digital competence of teachers: the theory of competence, professional and pedagogical competence, digital competence, pedagogical digital competence, fundamental scientific works of researchers on the personal / professional development of teachers.

The content-process part of the proposed structural-content model included a methodological system for the formation of teachers' digital competence.

The "evaluation-effectiveness" part helps to evaluate and measure the results of the formation of teachers' digital competence.

Motivational component. The motivational sphere of a person is a set of constant motives that have a certain hierarchy and represent the direction of the personality. Some researchers believe that motive is a mental phenomenon that prompts action. Others believe that motive is a conscious cause based on a person's choice of actions and deeds. There is another option: a motive is something that is reflected in the mind of a person, prompts him to action and directs him to satisfy a certain need. In this case, the motive is not the need itself, but the essence of the need. In this regard, the motivational component in the formation of digital competence of teachers characterizes the presence of interest and motivation of teachers in digital competence, the desire for independent learning, self-professional development. The motivational component of digital competence includes motives and needs. The attitude to the specifics of digital competence in educational activities is a combination of several motives arising in connection with the development of professional cognitive interest. Consequently, motivation depends on professional tasks related to situations of interest and activity of teachers in the digital environment.

Motivation is directly related to the content of digital educational materials, the organization of training in a collective, group form, the assessment of their results, associated with the development of digital competencies of teachers when using digital technologies in the organization of educational activities. in the digital environment. Analysis of the motivational component for solving the issues of digitalization of education, i.e. their interest in the implementation and use of digital technologies in education, the need to apply theoretical knowledge in practice, high qualifications, depends on the desire of students to master digital educational technologies.

Cognitive component. The modern cognitive society needs new educational technologies that prepare young people for life in an intellectually rich and rapidly developing high-tech environment, the number of which exceeds a person's ability to perceive and process it. The organization of teachers' knowledge in psychology, Internet psychology, pedagogy, digital pedagogy, methodology, digital competence demonstrates the application of theoretical knowledge in practice. The cognitive component of the structure of digital competence of teachers includes knowledge about the structure and characteristics of the digitalization of education in their

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professional activities. In addition, the depth and power of knowledge about the use of digital technologies in education, as well as the knowledge of teachers improve their personal and professional qualities, minds and abilities in the digital environment.

Action component. "Action is a form of active, purposeful human interaction with the environment (including with other people), which meets the needs that create this interaction. Necessity is a prerequisite, a source of energy for action. However, necessity does not determine the action by itself – it determines what the action is directed to, that is, its object ... attention is paid to needs. Thus, the concept of action is inextricably linked with the concept of motivation. There is no action without motivation. It includes the practical implementation of the knowledge gained on the implementation of digital learning technologies in education, demonstrates the creative use of digital learning technologies in the educational process. Combines skills and abilities to use digital learning resources to address a variety of learning situations.

As part of the analysis, we consider the indicators and criteria for the components of digital competencies of teachers.

Determination of the quantitative characteristics of the measured phenomena. ... A criterion is a sign that evaluates certain phenomena, actions or actions, in particular, which are classified and evaluated by an appropriate indicator when they are developed. Criteria are scientifically based standards that determine the degree achieved in the development, formation, training, education of students [9, 10].

Based on a theoretical analysis of the above literature, by combining different views and models of criteria and indicators of digital competence proposed by researchers and based on the definition of digital competence, their competence, digital measurement of the teacher, the measure for digital competence indicators has been finalized. The indicator of digital competence helps to identify the individual significance of digital technologies in realizing the potential of teachers to master digital technologies in the process of professional activity, to determine their content.

We have developed indicators and criteria for the formation of digital competence of teachers in accordance with Table 1 (Table 1).

Table 1. Indicators and criteria for the formation of components of digital competence of teachers

Components	**Dimensions**	**Indicators**
1	**2**	**3**
Motivational	Striving for the development of digital competencies and professional self-improvement	1) the teacher's interest as a professional in the problems of digital transformation of education; 2) the presence of the psychological climate conducive to the use of digital technologies in education, the desire for professional development through the use of digital technologies in education.
Cognitive	Knowledge of the pedagogical capabilities of digital technologies and their use in education.	1) knowledge of the legal foundations of professional and pedagogical activity, the theoretical foundations of digitalization of the educational process, knowledge of international and domestic requirements for the formation of a safe digital educational environment;
		2) systematic knowledge of pedagogical and psychological features of the creation of digital educational resources and their use in education, information and digital security in education, theoretical foundations of Internet communication.

Continuation of Table 1

1	2	3
Activity	Implementation of digital competencies of teachers in personal and professional activities	1) design and planning of the pedagogical process in the implementation of education through digital educational technologies and platforms, the ability to predict the results of their professional activities; 2) the ability to rationally use the stages of learning to ensure the pedagogical efficiency of using the main types of digital educational resources; implementation of network interpersonal communication in a digital environment, etc.

For each component of the model, methodological recommendations for the assessment have been developed and the level of formation of digital competencies has been determined.

The SAMR model developed by Ruben Puentedura and the European Digital Competence Model were used to determine the level of formation of digital competencies of teachers.

High level:

Teachers have a high professional interest in the digital transformation of education and a desire for professional development through the use of digital technologies in education. Has a thorough knowledge of the theoretical foundations of the digitalization of the educational process. There is a high level of design and planning of the pedagogical process of education in the digital environment, a high level of forecasting the results of their professional activities, the rational use of digital educational resources in the classroom to ensure pedagogical effectiveness, the implementation of online interpersonal communication in the digital environment. The teacher is constantly improving his practical skills, is always aware of the latest developments in the field of digitalization of education, systematically implements modern digital learning technologies (mixed learning models (translated class), gamification, digital storytelling, mobile learning, etc.). In this regard, teachers can make a significant difference in the interaction of participants in the learning process. Can effectively choose the most appropriate digital learning technologies according to the content of training. They are constantly improving their professional digital skills, expanding the scope of application of digital technologies for professional pedagogical purposes and using them creatively.

Intermediate level:

The teacher's own desire for professional development through the use of digital technologies in education is moderate. The legal and regulatory framework for the implementation of professional and pedagogical activities, the theoretical foundations of digitalization of the educational process, international and domestic requirements for the formation of a safe digital educational environment, pedagogical and psychological features of the creation of digital educational resources and their use. Possession of systematic knowledge of the basics of digital security, Internet psychology, Internet communication. Designing and planning the pedagogical process in the implementation of education using digital educational technologies and platforms is able to highlight the main types of digital educational resources, requirements for them, their rational use in the classroom, and ensure the pedagogical efficiency of their use. In a digital environment, the teacher has the business acumen to carry out interpersonal online communication. The teacher uses digital technologies as an optimization tool in solving educational problems. Reliable use of digital technologies to create educational content, assess and monitor knowledge, create a learning environment using the potential of network platforms. Focuses on the selection of digital technologies and materials for specific situations and seeks to identify the advantages and disadvantages of various digital strategies. There is a need for self-improvement, teachers understand the possible ways of development in this direction. Unforeseen circumstances in the digital education space often cause certain difficulties for such teachers, but subsequently they are

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successfully overcome. Stable professional motivation is formed at a moderate level and does not constantly feel the need for creative growth.

Low level:

Teachers have low self-esteem for professional development due to the use of digital technologies in education, there is no professional position. Insufficient knowledge of the theoretical foundations of digitalization of the educational process, requirements for the formation of a safe digital educational environment, pedagogical and psychological features of creating digital educational resources and their use in education, information and digital security in education, Internet psychology, theoretical foundations of Internet communication. Not being able to predict the results of their professional activities in the design and planning of the pedagogical process when implementing education using digital technologies and platforms. To ensure the pedagogical efficiency of the use of digital educational resources, the rational use of the stages of the lesson, the implementation of interpersonal online communication in the digital environment is not enough. The teacher understands the high potential of digital technologies, uses digital technologies as a replacement for other teaching aids, and is limited to using simple applications in the development of educational content.

Conclusions

The structural and content model of formation of digital competence of teachers developed by us provides a practical opportunity to achieve the goal of formation of digital competence on the basis of the advanced training course “Digital Pedagogy”, as well as scientific and methodological measures to promote digitalization of education. In the course of the study, we found that the proposed model based on the integrated use of all ee functionality, as well as with the direct use of digital technologies, is successfully implemented during teacher retraining.

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