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## DIGITALIZATION OF THE EDUCATIONAL PROCESS AS A FACTOR IN THE DEVELOPMENT OF PROFESSIONAL COMPETENCE OF FUTURE EDUCATIONAL PSYCHOLOGIST IN KAZAKHSTAN

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*This article addresses the challenges and prospects in training future educational psychologist within the context of digitalization in education. The study explores current theoretical perspectives on education's digital transformation and the professional skills needed for upcoming teacher-psychologists. It identifies the issues and essential competencies required for these professionals to thrive in a digitalized environment, as well as providing methodological recommendations for incorporating digital technologies into the training process of teacher-psychologists. The study found that students show a significant discrepancy between expectations and the quality of training provided in the field of digitalization, moreover, they need additional hours, practical exercises and specialized courses to improve their digital literacy and readiness to work in the conditions of digital transformation. The experts in their interviews point out that the digitalization of the educational process has a significant impact on the training of future educational psychologist and argue that students and current psychologists need to develop skills in working with digital tools, data analysis and digital content creation. Identify the main challenges and recommendations. On these conditions developed a methodology for the development of competencies in future educational psychologist, taking into account the digitalization of the educational process as a leading factor. The effectiveness of the methodology is confirmed by the results of the experiment, as in the experimental group there was a significant improvement in all the studied parameters that determine the level of professional competencies of future educational psychologist through the development of digital knowledge and skills.*

**Key words:** digitalization, digitalization of the educational process, digital competence, professional competence, future educational psychologists, higher education.

## БІЛІМ БЕРУ ПРОЦЕСІН ЦИФРЛАНДЫРУ ҚАЗАҚСТАНДАҒЫ БОЛАШАҚ ПЕДАГОГ-ПСИХОЛОГТАРДЫҢ КӘСІБІ ҚҰЗЫРЕТТІЛІГІН ДАМЫТУ ФАКТОРЫ РЕТИНДЕ

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Бұл мақала жоғары білім беру жүйесінде болашақ педагог-психологтарды даярлаудың білім берудегі цифрландыру контекстіндеғі проблемалары мен келешектерін қарастыруға бағытталған. Зерттеу білім берудің цифрлық трансформациясы бойынша қазіргі теориялық көзқарастарды және болашақ педагог-психологтарға қажетті кәсіби дағдыларды зерделеді. Жұмыста осы мамандардың цифрландырылған ортада табысты жұмыс істеуі үшін қажетті мәселелер мен негізгі құзыреттер анықталады, сондай-ақ педагог-психологтарды даярлау үдерісіне цифрлық технологияларды енгізу бойынша әдістемелік ұсыныстар берілген. Зерттеу нәтижесінде студенттердің цифрландыру саласында берілетін оқыту сапасына қойылатын үміттері мен нақты жағдай арасында айтарлықтай сәйкесіздік бар екендігі анықталды, сонымен қатар олардың цифрлық сауаттылығын және цифрлық трансформация жағдайында жұмыс істеуге дайындығын арттыру үшін қосымша сағаттар, практикалық жетекшіліктер және арнайы курстар қажет екендігі көрсетілді. Сарапшылар өз сұхбаттарында білім беру үдерісін цифрландырудың болашақ педагог-психологтарды даярлауға айтарлықтай әсер ететінін атап өтеді және студенттер мен қазіргі педагог-психологтардың цифрлық құралдармен жұмыс істеу, деректерді талдау және цифрлық контент жасау дағдыларын дамыту қажеттігін дәлелдейді. Негізгі проблемалар мен ұсыныстар анықталды. Осы жағдайларды ескере отырып, білім беру үдерісін цифрландыруды жетекші фактор ретінде ескере отырып, болашақ педагог-психологтарда құзыреттерді дамыту әдістемесі жасалды. Әдістеменің тиімділігі эксперимент нәтижелерімен расталады, себебі эксперименттік топта цифрлық білім мен дағдыларды дамыту арқылы болашақ педагог-психологтардың кәсіби құзыреттілік деңгейін анықтайтын барлық зерттелген параметрлер бойынша айтарлықтай жақсару байқалды.

**Түйінде сөздер:** цифрландыру, білім беру процесін цифрландыру, цифрлық құзыреттілік, кәсіби құзыреттілік, болашақ педагог-психологтар, жоғары білім.

## ЦИФРОВИЗАЦИЯ ОБРАЗОВАТЕЛЬНОГО ПРОЦЕССА КАК ФАКТОР РАЗВИТИЯ ПРОФЕССИОНАЛЬНОЙ КОМПЕТЕНТНОСТИ БУДУЩИХ ПЕДАГОГОВ-ПСИХОЛОГОВ В КАЗАХСТАНЕ

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Данная статья направлена на решение проблем и перспективы высшего образования в подготовке будущих педагогов-психологов в контексте цифровизации образования. Исследование изучает современные теоретические подходы к цифровой трансформации образования и профессиональные навыки, необходимые будущим педагогам-психологам. В работе определены проблемы и ключевые компетенции, необходимые этим специалистам для успешной деятельности в цифровой среде, а также представлены методические рекомендации по внедрению цифровых технологий в процесс подготовки педагогов-психологов. Исследование показало, что студенты демонстрируют значительное расхождение между ожиданиями и качеством подготовки, предоставляемой в области цифровизации; более того, им необходимы дополнительные часы, практические заня-

тия и специализированные курсы для повышения их цифровой грамотности и готовности к работе в условиях цифровой трансформации. Эксперты в своих интервью отмечают, что цифровизация образовательного процесса оказывает значительное влияние на подготовку будущих педагогов-психологов и утверждают, что студенты и действующие психологи нуждаются в развитии навыков работы с цифровыми инструментами, анализа данных и создания цифрового контента. Определены основные проблемы и рекомендации. В этих условиях разработана методика развития компетенций у будущих педагогов-психологов с учетом цифровизации образовательного процесса как ведущего фактора. Эффективность методики подтверждается результатами эксперимента, поскольку в экспериментальной группе наблюдалось значительное улучшение всех изучаемых параметров, определяющих уровень профессиональных компетенций будущих педагогов-психологов посредством развития цифровых знаний и навыков.

**Ключевые слова:** цифровизация, цифровизация образовательного процесса, цифровая компетентность, профессиональная компетентность, будущие педагоги-психологи, высшее образование.

**Introduction.** The modern challenges that have confronted Kazakhstan's education system for decades call for more effective training of future educational psychologists, particularly in the context of rapidly advancing digitalization.

Such specialists should have a high level of professional competence in order to implement the educational process in such conditions more successfully.

Digitalization of education encompasses not only the integration of new digital technologies but also the transformation of the learning process for future teachers. Digital transformation is aimed at changing approaches to technologies and teaching methods, the learning process and the relationship between all participants in the educational process. At the same time, the professional competence of future educational psychologists, in a digital environment, requires them to be proficient in digital tools and to be able to use them in pedagogical practice. At the same time, the readiness of future educators to constantly adapt to changes in the educational environment, which will continue to occur due to the further development of digitalization, is considered an important indicator.

The study's topic arises from the necessity to adapt the system of higher education for the training of future educational psychologist to the new conditions determined by the era of digitalization. All modern students of pedagogical universities, including those studying at specialty of pedagogical psychologists, should be prepared to work in schools and other educational institutions operating under conditions of digitalization and be able to apply modern information technologies during their work with schoolchildren. This need, as previous studies indicate, is due to the fact that in practice many educational psychologist, including young educational psychologist, experience many problems in the use of digital tools and not all of them know how to integrate them into the teaching process. Such situations indicate that there are many gaps in their professional training that require special attention.

In general, the problem of the study is the insufficient level of development of methods and mechanisms to ensure and develop the professional competence of future educational psychologist in the conditions of digitalization of the educational process. In Kazakhstan, despite the recognition in the State Program "Digital Kazakhstan", the importance of the development of digital education [1, p. 5], there is still insufficient development of technologies and methods to train future professionals who could apply all possible digital resources in their classes more effectively. Thus, the lack of a comprehensive approach in higher pedagogical education of future teacher educators to create and develop the required competencies in the field of digital technologies, can lead to the fact that the lag of teachers from the requirements of modern digital society, will reduce the effectiveness of the entire education process in the country.

The relevance of the topic of the present study is determined by a number of factors. Firstly, the rapid progress of digital technologies makes it necessary for future educational psychologist to gain professional knowledge and skills in the field of digital education. Therefore, students majoring "Psychology" should be able to effectively integrate modern technologies into the educational process, as modern schoolchildren know how to use digital devices quite actively. Thirdly, digitalization in the field of education opens new opportunities to organize individual learning, which is most relevant for future educational psychologist who are retraining from other pedagogical specialties. In light of this, the study seeks to create and apply effective strategies for preparing future educational psychologist to excel in psychological and pedagogical work within the context of digitalization.

The aim of **the study** is to pinpoint issues and propose solutions for enhancing professional competence in the training of future educational psychologist to work effectively within the digitalized educational environment in Kazakhstan.

In order to achieve this goal, the following **objectives are addressed**:

- Examination of current theoretical perspectives on the digitalization of education and the development of professional competencies in future educational psychologist;
- Recognize the challenges and essential professional competencies needed for future educational psychologists to thrive in a digital environment;

- To create methodological guidelines for integrating digital technologies into the educational process for educational psychologist;
- To carry out an experimental evaluation of a program aimed at developing digital competencies in future educational psychologist, considering the digitalization of the educational process, and assess its effectiveness.

Main research methods: methods of theoretical analysis, survey, modeling, pedagogical experiment, statistical data processing and analytical analysis.

The results of the study have both theoretical and practical significance, as they expand the existing knowledge and contribute to the improvement of the system of training of future educational psychologist in Kazakhstan.

**Methods and materials.** The research methodology is based on a comprehensive approach.

At the first stage, a literature analysis based on the study of scientific literature (articles, monographs, dissertations and other sources), normative documents and best practices in the field of digital pedagogical education in the field of educational psychology was conducted.

In the second stage, the key issues and professional competencies essential for future educational psychologist to thrive in the context of modern digitalization are examined. A questionnaire survey among students is conducted, 110 people are interviewed in total. The survey includes four blocks of questions (level of mastery; difficulties; competencies; expectations and suggestions). The assessment is carried out on a five-point scale (from one point to five. Thus, the current level of digital competence is evaluated on a scale from 1 (extremely low) to 5 points (very high), along with confidence in using digital technologies for learning activities (ranging from completely disagree to completely agree). The difficulties in mastering digital technologies are assessed through various factors: insufficient time allocated to digitalization (1 points), challenges in learning new programs and applications (2 points), lack of practical examples for applying digital technologies (3 points), and other difficulties (4 points), among others. The survey aims to identify issues and understand the key areas that should be incorporated into curricula to effectively prepare future educational psychologist for success in the face of digitalization challenges.

Interviews were conducted with experts, selected based on the following criteria: experience in education, direct involvement with future educational psychologist, knowledge of digitalization and its application in the educational process, and practical experience in implementing digital technologies within education. The experts included educators teaching courses on information technologies, digital education, or pedagogical innovations, practicing educational psychologists, and school administrators (three to four individuals per group). The inclusion of these experts aims to enhance the quality of the study by providing a broad range of reliable and valuable data, which can be used to develop strategies and recommendations to improve the professional competence of future educational psychologist in the context of digitalization.

A competence development method for future educational psychologist, considering the digitalization of the educational process as a key factor, was designed using modeling techniques. A pedagogical experiment was carried out to assess the effectiveness of the program aimed at developing digital competencies. During the research the knowledge and skill levels of the experimental group and the control group were compared at both the beginning and end of the experiment.

At the preparatory stage, groups were formed: experimental (EG) and control (CG). The sample size: EG: 30 people; CG: 30 people. Provided that in the EG the program of competence development in future educational psychologist will be implemented, taking into account the digitalization of the educational process, and in the CG continues training is carried out according to the traditional program. At the first stage diagnostics of the initial level of competence formation is carried out: preliminary testing of the initial level of knowledge and skills in both groups is carried out. The testing includes questions: on knowledge in the field of digital education, information security and the use of digital tools; on the skills acquired during practical tasks on working with educational platforms, on the creation of digital content, and on data analysis. At the main, formative stage, the EG implements individual activities outlined in the methodology: training seminars on digital tools; practical exercises on the creation of special digital content; project activities using artificial intelligence. At the same time, the control group continues training according to the standard program without implementation of the new methodology. At the final stage the final diagnostics of knowledge and skills level assessment in both groups is conducted. Testing is similar to the initial stage and includes similar questions and tasks

The results were then analyzed, using statistical methods, in order to compare the pre-test and post-test results and draw conclusions.

Such an integrated approach allows us to more objectively assess the effectiveness of the developed methodology and make the necessary adjustments to further improve the process of training future educational psychologist

**Results and discussion.** Results of the literature analysis. The analysis of existing theoretical approaches to digitalization of education has shown that digitalization of education is a process of integration of digital methods and technologies into the education system, provided that it has a significant impact on changes in the forms, content, and methods of education. According to the author, with digitalization in edu-

cation, there is an organization of educational content using more advanced technological capabilities, and allows the creation of educational materials in combination with virtual reality, with the use of gamification, which become important in education in terms of its effectiveness [2, p. 3].

F.F. Mikhailova, considering the role of digitalization in the modern educational process, points out both positive and negative sides. Many of them depend on the main theoretical approaches, each of which offers its own vision regarding the introduction of certain digital tools in the learning process and educational space as a whole [3, p. 10].

Further we suggest to consider the most significant approaches to digitalization of education.

1. In his paper, "Constructivism and the Digitalization of Education," the author explores the role of new educational technologies in teaching and learning from a constructivist perspective. He argues that while digital technologies present valuable new opportunities for teachers, they should be integrated into a well-defined pedagogy rather than treated as isolated objectives. The scholar emphasizes that the adoption of digital technologies must align with constructivist principles of learning. In practice, many digital tools have significant potential to support teachers who embrace a constructivist approach, helping them enhance their classroom practices [4, p. 520].

Constructivism in higher education is based on the idea of using interactive educational platforms, simulators and virtual laboratories that will help students to conduct research and experiments independently, but with the help of new technologies. In the training of educational psychologist constructivism emphasizes the individual approach to learning, which is important to study with the development of personalized learning strategies.

2. behaviorism, or behavioral approach, is based on the fact that learning, according to some authors, takes place only in view of reinforcement of desired behavior. Digital technologies, as noted by a group of authors E. Instefjord and E. Munthe in their study of the digitalization of universities from the students' point of view, make it easy to track students' progress and provide instant feedback, which contributes to the formation of proper learning skills [5, p. 41]. To encourage students to reach their professional goals, gamification can be implemented through online platforms. Additionally, it is important to note perspectives suggesting that digital technologies in education not only motivate teachers but also enrich learning materials and assist in evaluating educational objectives [6, p. 127]. Furthermore, digital processes streamline support services, with some technologies fostering collaboration between teachers and administrators, making teaching outcomes and student progress more transparent and accessible. Moreover, digital technologies can integrate universities' teaching and administrative functions. As universities face growing competition, they must seek more efficient processes [7, p. 46].

This approach should also be taken into account in the training of educational psychologist, as psychologists usually work on developing positive behavioral patterns in students. From a behavioral perspective digitalization helps students better understand motivation mechanisms and apply digital tools.

3. The cognitive approach, which focuses on the fundamental processes of learning such as perception, memory, and thinking, is considered most crucial for future educational psychologist. According to I. Reisoglu in his paper on digital technologies in 21st-century education, the digital environment offers unique opportunities for students to utilize multimedia resources and interactive learning techniques to visualize complex concepts. This, in turn, greatly enhances their understanding of both educational content and practical material [8, p. 733].

It is essential to recognize that understanding cognitive processes is crucial for educational psychologist, because it is they that enable them to identify and correct students' difficulties in learning. At the same time, it is digital tools designed to accelerate the visual presentation of information in the learning process that improve performance.

4. The approach of blended learning is actively researched by Kazakhstani authors. Thus, A.S. Junisbaeva, S.B. Begalieva, L.A. Fedorchenko in their research on a unified blended learning environment, with Kazakhstani context, point out that in Kazakhstan there is an annual growing interest in more flexible forms of learning. Many of them are reflected in legislative and regulatory documents in the field of higher education [9, p. 223]. Similar opinion is also held by scientists: S. Askarkyzy and A. Zhunusbekova investigating the features of distance learning implementation in Kazakhstani universities [10, p. 54]; Z. Nurbekova and B. Nurbekov revealing in conditions of active digitalization the prospects of distance learning in Kazakhstan's universities [11, p. 223]; Z.G. Mukhtar and S.M. Bakhisheva developing for universities a methodological concept of integration of technological systems for managing blended learning [12, p. 110]; E.S. Isaeva analyzing modern LMS platforms for distance learning in higher education [13, p. 1048].

The analysis of these works showed that blended learning should be recognized as effective if it combines traditional teaching methods with the use of online resources. Their effectiveness lies in the fact that they help to improve students' online access to learning material, while at the same time participating in face-to-face classes. For the training of educational psychologist, this approach is also important, as it provides them with flexibility in the educational process, allowing them to then adapt to the different needs of their students, as an important professional competence of a educational psychologist, when developing individual educational trajectories, taking into account the peculiarities of each student. A similar opinion is

held by foreign and domestic researchers [14; p. 7], in the Educause Horizon reports for 2021-2022, which describes the key trends and new technologies and practices shaping the process of teaching and learning, and proposes a number of scenarios and implications for this future [15, p. 398]. It is based on the perspectives and experiences of a global group of leaders from across higher education. As well as I. Helleve exploring student empowerment through blended learning [16, p. 330].

The analysis of the peculiarities of the development of professional competence of future educational psychologist in the conditions of digitalization allowed to reveal the structure and content of students' digital competence in this category of specialists (G.K. Sholpankulova and M. Ermekova [17, p. 23], E. Garzón-Artacho and T. Sola-Martínez [18, p. 4] and others. Digital competence with taking into account the professional priorities of future educational psychologist is based on the following indicators: responsibility (includes decision-making); success (achieved through learning and performance); safety (based on working with information without any risks) and ability to work with information [19, p. 50]. The last indicator consists of a set of elements that make up, ensuring the overall productivity of the whole space: flexibility of this skill, perceptual defense; ability to shift attention; analytical; ability to distinguish false information from reliable information. On this basis, the basis of digital competence is the ability to work with information as basic

The authors also identify four main professional components that can be applied to the future educational psychologist regarding digital competence:

- 1) motivational and personal;
- 2) cognitive;
- 3) action-oriented;
- 4) reflexive-evaluative.

At the same time, it is important to highlight that the key professional and personal traits of a future educational psychologist continue to be determination, goal-orientedness, self-discipline, restraint, emotional stability, initiative, empathy, and others. These traits are reflected in the nature of their professional work, which is driven by the ongoing pursuit of new approaches and technologies. In the context of digitalization, this pursuit expands in scope, aiming to enhance the effectiveness of students' competence activities through the use of digital competencies.

The results of the student survey are presented in Table 1.

*Table 1. – Findings from the survey on the challenges and key professional competencies required for future educational psychologist in the context of digitalization*

No	Category	Answer options	%
1	Level of digital literacy	1 extremely low	10%
		2 low	25%
		3 middle	30%
		4 high	18%
		5 very high	17%
2	Frequency of use of digital technologies	1 very rarely	12%
		2 sometimes.	28%
		3 often	35%
		4 almost always	18%
		5 always	7%
3	Satisfaction with teacher support	1 extremely dissatisfied	20%
		2 dissatisfied	30%
		3 neutral	28%
		4 satisfied	15%
		5 completely satisfied	12%
4	Difficulties in the adoption of digital technologies	1 lack of hours	40%
		2 difficulty of mastering	35%
		3 lack of examples	25%
		4 satisfied	15%
		5 completely satisfied	12%
5	Critical competencies in digitalization	1 basic digital tools	45%
		2 educational platforms	30%
		3 content creation	12%
		4 data analysis	10%
6	Expected skills	1 Big Data	25%
		2 AI in education	30%
		3 VR/AR.	28%
		4 mobile applications	25%

Continuation of Table 1

7	Readiness for digital transformation	1 extremely low	17%
		2 low	28%
		3 Middle	30%
		4 high	20%
		5 very high	10%
8	Proposed changes in the curriculum	1 increase in hours	50%
		2 more practice	30%
		3 content courses	10%
		4 participation in projects	10%
9	Need for additional courses	1 programming basics	12%
		2 AI in education	18%
		3 data security	20%
		4 psychological support	35%

The findings allow us to draw the following conclusions.

The majority of respondents (55%) rate their level of digital literacy as average or below (1-3). Only 17% consider their level to be very high, which indicates significant differences in the levels of students' training and determines the need to improve the level of digital skills of the majority of survey participants.

The frequency of digital technology use is characterized in this way: 35% of participants use digital technologies frequently, but 40% of respondents use them less frequently (very rarely or sometimes). Such indicators may indicate the need to introduce more active learning and practical application of technologies in the learning process.

A high percentage of respondents (half or 50%) express dissatisfaction with faculty support. Only 27% express satisfaction. Such indicators point to the need for better interaction between students and lecturers, as well as better support for digital skills.

The most significant difficulty for 40% of respondents is the lack of hours allocated to study, while 35% indicate difficulty in mastering. This emphasizes the need to revise curricula and increase the time allocated to practical training.

A large number of students (45%) consider basic knowledge and skills as key competencies for digitalization and working with educational platforms (30%). Digital content creation (12%) and data analysis (10%) remain less popular skills. This suggests that the focus should be on training in basic skills for working with digital tools.

The most in-demand skills among students are AI (artificial intelligence) in education (30%) and VR/AR (28%), as well as working with big data (25%). These data reflect students' interest in the latest technologies and their potential in the educational sphere.

This indicates their growing interest in new technologies and the need to integrate them into the educational process.

Readiness for digital transformation is shown by 45% of respondents as low or extremely low (1-2). Only 10% of students rate their readiness for digital transformation as very high. The average readiness is 30%. Such data indicates a significant variation in the level of readiness, and also emphasizes the need for active work to prepare participants for changes in the educational environment.

The most popular suggestion is to increase the hours devoted to digital technologies (50%). Including more practical training is suggested by 30%. Less popular are courses on content creation and participation in projects (10%). This data confirms the need for more in-depth study of this area.

The most demanded additional courses are: psychological support (35%) and data security (20%), which may indicate a high interest in them based on the fact that they are important for future educational psychologist

#### Results of interviews with experts.

Prior to presenting the interview findings, it is essential to outline the methodology employed for expert selection and the interview process itself. The expert selection was conducted through a multi-stage procedure. At the initial stage, potential participants were identified based on predetermined criteria: professional experience in education exceeding five years, direct involvement in training future educational psychologist, demonstrated expertise in digitalization and its educational applications, and practical experience implementing digital technologies within educational settings. At the subsequent stage, invitations were extended to candidates who satisfied all specified criteria, with their consent to participate obtained. The final sample comprised three expert groups: educators delivering courses on information technologies, digital education, or pedagogical innovations (Group 1, n=4); practicing educational psychologists with experience in digital tool implementation (Group 2, n=3); and educational administrators responsible for digitalization strategy at institutional level (Group 3, n=4).

The interview process was organized according to a semi-structured format, allowing for flexibility while maintaining consistency across all respondent groups. Each interview lasted approximately 45-60 minutes and was conducted both face-to-face and via video conferencing platforms, depending on participant availability. All interviews were audio-recorded with consent and subsequently transcribed for analytical purposes. The interview guide encompassed several thematic blocks: current state assessment of digital competence development for future educational psychologist of Psychology; identification of key competencies essential for professional activity in digitalized environments; analysis of challenges encountered in digital technology integration; and recommendations for curriculum enhancement and professional development programs. Data analysis was performed using thematic coding, whereby responses were systematically categorized and recurring patterns identified across expert groups. To ensure reliability, the coding procedure was independently verified by two researchers, with discrepancies resolved through discussion.

Group 1: Teachers of information technology and digital education courses. When assessing the current training of students: 80% of experts indicated that students have basic digital literacy, but lack in-depth knowledge and skills to work with advanced digital tools. 20% indicated that the practical component of the training needs to be improved. Core competencies: 60% of experts believe that future educational psychologist should have skills in working with educational platforms and analyzing data. 40% emphasized the importance of being able to create digital content. Student difficulties: 70% of experts indicated difficulties in learning new programs and applications. 30% noted a lack of time and resources to integrate digital technology into the curriculum. Recommendations for curriculum changes: 90% of experts recommended increasing the number of hours devoted to hands-on activities. 10% suggested introducing courses on digital content creation.

Group 2: Practicing educational psychologist. Digital tools employed: 75% of professionals utilize educational platforms like Moodle and Google Classroom, while 25% use other specialized software for psychological diagnostics. Difficulties in implementing digital technologies: 85% of experts faced lack of time to master new technologies. 15% noted the lack of support from the administration. Impact of digitalization on work: 65% of experts reported that digital technologies make it easier to work with students and parents. 35% noted the need for considerable effort to adapt. Lack of skills and knowledge: 55% of experts feel there is a lack of knowledge in data security. 45% need skills to work with large amounts of information. Recommendations for professional development: 95% of experts recommended organizing regular trainings and master classes. 5% suggested internships and sharing experience with colleagues.

Group 3: School leaders. Impact of digitalization on school management: 80% of experts noted improvement of educational process management and administration due to digitalization. 20% pointed out the need for constant updating of infrastructure and retraining of staff. Requirements for educational psychologist: 70% of experts require educational psychologist to be proficient in digital diagnostic tools. 30% emphasized the importance of being able to effectively use information systems to interact with students and parents. Difficulties in implementing digital technologies: 75% of experts faced financial constraints and resistance of part of the teaching staff to innovations. 25% noted problems with the selection of appropriate digital tools. Support for teachers: 60% of experts organized internal trainings to support teachers. 40% involved external experts to conduct master classes. Recommendations for change: 90% of experts recommended modernizing the material and technical base of schools. 10% suggested developing unified standards and protocols for the use of digital technologies.

Overall, the interview results highlight the need to enhance the digital literacy competencies of both future educational psychologist and current practitioners. All experts agreed that the successful integration of digital technologies into education demands practical training, ongoing professional development, and infrastructure modernization.

The methodology for the development of professional competencies in future educational psychologist was developed, its indicators are reflected in Table 2.

*Table 2. – Program of competence development in future educational psychologist, taking into account digitalization of the educational process as a leading*

Direction	Event	Table of Contents	Result
1. Psychological and pedagogical diagnostics using digital tools.	The course “Fundamentals of psychodiagnostics using digital tools”.	Training in the use of psychological diagnostic programs (MindMeister, Psychometrica), online testers (Quizlet, Kahoot!), and the use of video conferencing (Zoom, Skype) to conduct diagnostics.	Competencies to conduct diagnostics using digital tools and analyze results.
2. Creation of digital content for psychological education and prevention.	Master class “Creating digital content for psychoeducation”.	Training in presentation software (PowerPoint, Prezi), video editors (Adobe Premiere Pro, iMovie), graphics editors (Canva, Adobe Photoshop) and website builders (Wix, WordPress).	Skills in developing and adapting digital learning materials.

Continuation of Table 2

3. Management of educational platforms and distance learning systems	A special course on "Managing Educational Educational Platforms".	Training in customization and administration of educational platforms (Moodle, Google Classroom)	Competencies to effectively manage educational platforms and distance learning systems.
4. Data analysis and the use of artificial intelligence in educational psychology.	Workshop on Data Analysis and Artificial Intelligence in Educational Psychology.	Training in analytics software (Excel, Tableau), machine learning fundamentals (Python, R) and specialized tools for data analysis.	Gain skills to analyze data and apply artificial intelligence algorithms to predict behavior and develop prevention programs.
5. Application of augmented and virtual reality (AR/VR) in psychological support.	Laboratory "Augmented and virtual reality in psychological practice".	Learning to develop and use VR applications for relaxation, cognitive-behavioral exercises, and AR tools to visualize and simulate various scenarios.	Ability to develop and utilize AR/VR technologies for psychological diagnosis, prevention and rehabilitation.
6. Data security and privacy in the digital environment.	Training "Information security and privacy in the educational environment".	Teaching information security principles, use of encrypted communication channels, compliance with GDPR and other data protection standards, and educating students and parents on the basics of cybersecurity.	Ability and skills to protect personal data of students and parents.
7. Collaboration and networking with colleagues.	Webinar "Collaboration and networking in educational psychology".	Learning to participate in online communities, forums and social networks for educators, co-designing and implementing educational projects.	Competencies to collaborate effectively with colleagues and share experiences.
8. Psychological support in digital space.	Workshop "Providing Psychological support in an online environment".	Training in conducting online consultations, group sessions and support chats, and the use of specialized software for psychological diagnosis and correction.	Skills to provide psychological help and support in an online environment.
9. Effective use of digital tools for assessment and monitoring.	Workshop "Digital Tools for Evaluation and Monitoring".	Training in the use of electronic diaries, progress monitoring systems and specialized software for analyzing the emotional state of students.	Skills and abilities to apply digital tools to assess student performance and monitor psychological well-being.

All the proposed activities show that an integrated approach to the development of key professional competencies in future educational psychologist has been used, allowing them to effectively use digital technologies in their activities. Expected results from the implementation of such methodology: increase in the level of knowledge and skills; student satisfaction expressed in positive student feedback; practical applicability based on the possibility of applying the acquired competencies in the real professional activity of an educational psychologist.

The results of testing the level of digital knowledge and skills of students in both groups, at the beginning and end of the experiment are shown in Table 3.

Table 3. – Findings from the comparative analysis of digital knowledge and skill levels among students from both groups, at the beginning and end of the experiment, in percentages

Parameters	EG start	EG end	changes	CG start	CG end	changes
Knowledge of digital	50	85	+35	53	63	+10
Information security	47	87	+30	47	53	+6
Use of digital tools	50	87	+37	47	53	+6
Working with educational digital diagnostic platforms	43	77	+34	47	57	+10
Digital content creation	50	77	+27	50	50	0
Analyzing digital educational data	40	73	+33	43	43	0

The obtained data show that at the beginning of testing results showed approximately the same, average level of knowledge and skills, the existing deviations are insignificant and are within the statistical error when conducting similar studies.

The final test showed in EG a significant improvement in all parameters (from 27 to 37%), while in CG there are only minor changes (6-10%), for the last two indicators, the value did not change, as shown in Figure 1.

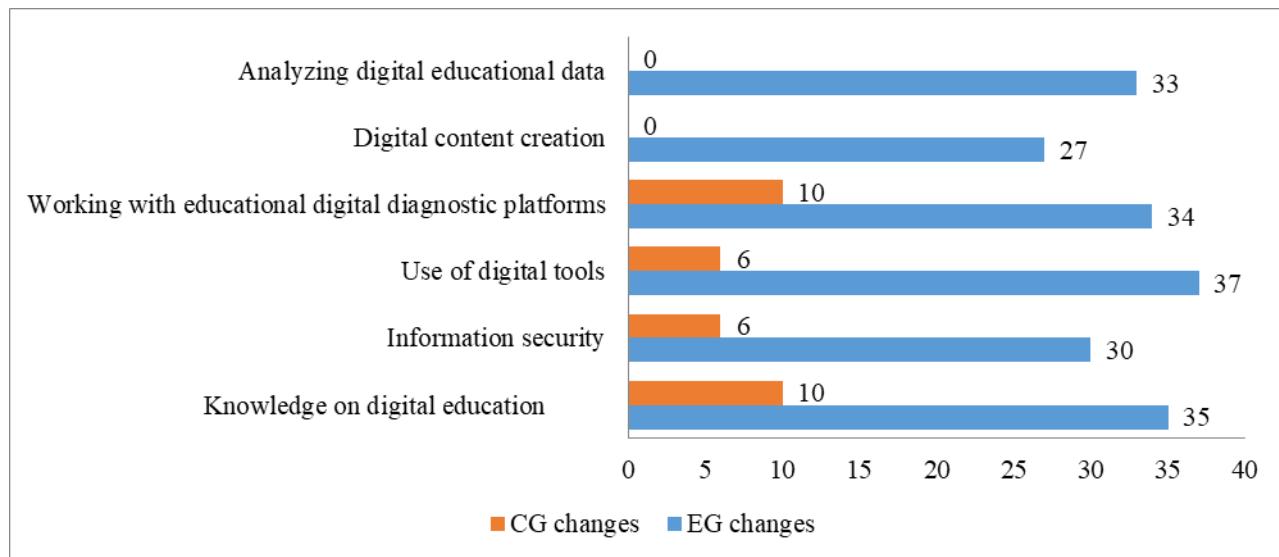


Figure 1 – Results of comparative analysis

The results from the experimental group demonstrate notable improvement across all parameters, confirming the effectiveness of the developed methodology. In contrast, the control group shows lower performance, highlighting the need to implement new methods focused on enhancing digital competencies, which are crucial for developing core professional skills. The present study offers new perspectives and additions to existing research, as it expands the understanding of the role of digitalization in the training of future educational psychologist and offers a specific methodology for the implementation of digital technologies in the educational process, which makes it more applicable in practice. There is empirical evidence that digital competence affects the formation of professional skills for students majoring "Psychology".

Analysis of the data presented in Figure 1 shows significant differences in the dynamics of digital competence formation between the experimental and control groups based on the results of the pedagogical experiment. In the experimental group, where the developed methodology for the development of professional competencies was implemented, taking into account the digitalization of the educational process, a significant increase in indicators was observed for all parameters studied. The most pronounced positive dynamics were recorded in the area of digital tools (an increase of 37%), which demonstrates the effectiveness of a practice-oriented approach to teaching. Significant progress has also been noted in the field of information security (30% increase) and work with educational digital diagnostic platforms (34% increase), which indicates that future educational psychologists are developing critical professional skills for working in the context of the digital transformation of education. The indicators for digital educational data analysis and digital content creation showed an increase of 33% and 27%, respectively, confirming that students have mastered the competencies necessary for developing and adapting teaching materials in digital format. In contrast, the control group, which was trained using a traditional program without the integration of specialized methods, showed minimal changes: a slight increase (6-10%) was recorded only for certain parameters, while there were no changes at all in the indicators of digital content creation and educational data analysis. The presented data confirms the research hypothesis that the targeted introduction of methods for developing digital competencies, including practical classes with modern technological tools, work with educational platforms, and mastering data analysis and artificial intelligence tools, provides a qualitatively higher level of professional training for future educational psychologists to work in the context of the digitalization of the educational space.

**Conclusion.** The results of the student survey show that there is a significant mismatch between students' expectations and the quality of digitalization training provided. It was found that students need additional hours, practical training and specialized courses to improve their digital literacy and readiness to work in the digital transformation.

The results of the interviews indicate that the digitalization of the educational process has a significant impact on the training of future educational psychologist. Experts unanimously agree that students and current educators need to develop skills in working with digital tools, analyzing data and creating digital

content. The main difficulties are: lack of time and resources to master new technologies; lack of practical component in training and others. To overcome these obstacles, it is recommended to: increase the number of hours devoted to practical training; introduce modular courses and organize regular trainings and internships. School leaders, unlike others, emphasized the importance of modernizing infrastructure and developing unified standards for the use of digital technologies for educational psychologist.

The developed program for the development of competencies in future educational psychologist, taking into account the digitalization of the educational process as a leading factor. It encompasses activities in the following areas: psycho-pedagogical assessment with digital tools, creation of digital content for psychological education and prevention, management of educational platforms and e-learning systems, data analysis and application of artificial intelligence in educational psychology, use of augmented and virtual reality (AR/VR) in psychological support, data security and privacy in the digital realm, collaborative work, and training in digital tool usage. All of them are aimed at the following competencies: to conduct diagnostics using digital tools and analyze the results; to develop and adapt educational materials in digital format; to effectively manage educational platforms and distance learning systems; to analyze data and apply artificial intelligence algorithms to predict behavior and develop prevention programs; to develop and use AR/VR technologies for psychological diagnostics, prevention and rehabilitation; to provide the following competencies

The results of the experiment showed in the experimental group a significant improvement in all the studied parameters, and the students of the control group had insignificant or minimal changes. The obtained data confirm the effectiveness of the developed methodology and indicate that it is possible and necessary to introduce new methodological approaches to improve the level of professional competence of future educational psychologist by developing their digital knowledge and skills.

This study contributes to advancing both the theory and practice of digitalizing the educational process. The measures developed aim to enhance the quality of education and improve the professional skills of future educational psychologist, with a focus on ensuring the successful adaptation of students to the modern digital environment. Additionally, this research can become a valuable resource to further study this topic and prepare practical and methodological materials.

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## INNOVATIVE SYSTEM OF TEACHER TRAINING AS A CONDITION FOR EFFECTIVE SUPPORT FOR GIFTED CHILDREN IN KAZAKHSTAN

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*The relevance of this research lies in the growing importance of effectively supporting gifted children in Kazakhstan. Professional teacher education in this field requires the integration of innovative approaches that meet current needs and global competition, emphasizing the development of unique human capital essential for national progress. This study aims to substantiate the need to create an innovative system for training pedagogical personnel to work with gifted children in Kazakhstan. The research objectives included defining key concepts and principles, analyzing international experience, assessing the effectiveness of teacher training and psychological-pedagogical support for gifted children, and developing an optimal model of an innovative training system with criteria for selecting and evaluating professional competencies. A comprehensive methodology combining theoretical and empirical methods was applied. The research revealed that the current system of teacher training in Kazakhstan cannot ensure the required competencies for working with gifted children, mainly due to insufficient professional training and the lack of specialized innovative programs in higher education. The research findings confirm the need to transit toward an innovative model of teacher education focused on developing specific competencies required for supporting gifted learners. A professional development model was designed, along with criteria for teacher selection and evaluation. This research expands knowledge in gifted education by emphasizing the creation of an effective innovative system for teacher training. Its practical significance lies in the potential use of the results and recommendations by educational authorities and pedagogical universities in developing and implementing new programs.*

**Key words:** gifted children, psychological and pedagogical support, teacher training, innovative system, teachers, students.

## ҚАЗАҚСТАНДА ДАРЫНДЫ БАЛАЛАРДЫ ТИІМДІ ҚОЛДАУДЫҢ ШАРТЫ РЕТИНДЕ ПЕДАГОГ МАМАНДАРЫН ДАЯРЛАУДЫҢ ИННОВАЦИЯЛЫҚ ЖҮЙЕСІ

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