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BEYOND DIGITALIZATION: THE ONLIFE PARADIGM AS A SYSTEMIC TRANSFORMATION OF HIGHER EDUCATION

Abstract. *This article examines the "onlife" paradigm as a fundamental transformation in higher education, where boundaries between digital and physical realities blur. Using conceptual analysis, the study explores this shift across five dimensions: organizational, pedagogical, epistemological, social-psychological, and cultural. Findings reveal that onlife education requires transitioning from rigid university models to flexible ecosystems, redefining teachers as architects of learning environments, and reconceptualizing knowledge as a dynamic, co-constructed process. Digital technologies serve as catalysts that enhance traditional values – accessibility, quality, critical thinking – rather than being ends in themselves. Key challenges include maintaining academic depth, ensuring digital equity, and preserving education's human dimension. The conclusion emphasizes that successful implementation demands a holistic strategy harmonizing technological modernization with renewed pedagogy, teacher development, and academic culture. This positions universities as crucial nodes in global knowledge networks for lifelong learning, moving beyond simple digital tool integration to a complete educational ecosystem restructuring*

Keywords: *onlife paradigm, digital transformation of education, higher education, educational ecosystem, digital pedagogy, academic culture, personalized learning.*

Introduction. Contemporary technological and cultural changes, characteristic of the information society, are gradually blurring the boundaries between digital and analogue space, between online and offline. As emphasized by L. Floridi [1], the author of the term "onlife," the dualistic perception of reality, which rigidly separates digital and physical space, is losing its relevance: "We are neither online nor offline, but onlife". In other words, ICTs create not just a parallel digital environment, but also a fundamentally new integrated reality in which technology and information become an integral part of everyday life. This transformation manifests itself in the rethinking of traditional spaces and the emergence of fundamentally new hybrid environments. In some cases, technologies modify already existing physical objects, in others, they form a completely different material-digital infrastructure. Such changes affect all spheres of society, including education.

In the sphere of higher education, the concept of "learning in onlife mode" [2] proposes a revision of the traditional division into full-time and distance education. Research points to the necessity of developing hybrid-learning

spaces that organically combine physical and digital components [3; 4]. However, this gives rise to a number of important questions: how should university infrastructure be transformed, what prospects does hybrid learning open up under new conditions, and how can the sustainability of digital educational strategies be ensured? The relevance of these questions is intensified against the backdrop of such challenges as the need for large-scale modernization of university campuses, the growing demand for continuous lifelong learning, and the necessity for educational institutions to adapt to rapidly changing technological realities.

Conditions and Research Methods. This analysis is based on a comprehensive review of contemporary scholarly literature exploring the digital transformation of higher education. The research methodology involves a conceptual analysis of the "onlife" paradigm as defined by L. Floridi and its application within educational contexts, drawing upon the works of scholars such as A. Norberg and K. Ninnemann. The study examines the organizational, pedagogical, epistemo-logical, social-psychological, and cultural dimensions of this shift. Furthermore, it incorporates an analysis of practical implementations, including the Russian state program "Priority 2030" and the national project "Science and Universities," which provide a contextual framework for understanding infrastructure moderni-zation efforts. The investigation synthesizes findings from various studies to construct a multi-faceted understanding of the transition towards hybrid educational ecosystems.

Discussion. In higher education, the "onlife" paradigm manifests in several key ways. It is characterized by the integration of technologies into traditional learning formats, where digital tools become not merely a supplement but a natural part of the educational process. There is a distinct transition from the duality of "in-person versus distance" learning towards hybrid models that combine the advantages of both formats. Furthermore, this paradigm leads to the formation of a new educational ecosystem where the interaction between students, teachers, and content occurs within a unified digital-physical space.

The phenomenon of "onlife" education should be understood as a qualitatively new stage in the development of higher education, implying a profound transformation of the entire educational system, rather than just a mechanical implementation of digital tools. This transformation affects all levels of the educational process – from the organization of the learning space to the methods of cognition and social interaction.

The key to the successful implementation of the "onlife" model lies in the harmonious interaction of five interconnected components: the material and technical base and organizational structures; pedagogical methods and approaches; processes of knowledge generation and transfer; mechanisms of socialization and psychological adaptation; and the cultural norms and traditions of the academic community. In this context, digital technologies serve as a catalyst for change, not the ultimate goal of transformation. Their value is determined by their ability to enhance traditional educational values – accessibility, quality, and foundational knowledge – under new conditions.

For universities, such a transformation means a transition to a holistic development strategy where technological modernization is coordinated with the renewal of educational content, the training of teachers, and the creation of a new educational culture. The comprehensive

approach will allow higher education not only to adapt to the digital reality but also to preserve its role as a center for the generation of knowledge and the formation of a critically thinking individual in the 21st century. Let us consider each of these aspects in more detail.

Organizational and Infrastructural Aspects. The digital transformation of higher education requires fundamental changes in the organizational models of universities. Traditional management approaches that developed during the industrial era are giving way to flexible adaptive systems capable of responding quickly to the challenges of a rapidly changing educational environment. Modern universities are transitioning from rigid hierarchical structures to network models of governance, where horizontal and interdisciplinary connections play a crucial role.

A key direction of organizational change is the development of universities' ecosystem connections with the external environment. Universities are increasingly building partnerships with employers, creating mechanisms for the constant exchange of knowledge and competencies. These connections are realized through joint educational programs, applied research, internships, and project-based forms of work. The development of partnerships with employers corresponds to the trend of forming a "digital paradigm of education," which, according to A.Kh. Shelepaeva, "presupposes the necessity of forming theoretical and methodological foundations" for the integration of digital solutions into all spheres of university activity [5: 43]. Simultaneously, universities are strengthening interaction with the urban environment, transforming into centers of innovative development for their territories. Campuses are becoming open spaces where educational, professional, and cultural flows intersect.

New formats of academic mobility, extending beyond traditional exchange programs, are gaining particular importance. Digital technologies enable the creation of hybrid mobility models that combine physical relocation with virtual participation in educational programs of foreign universities. Forms of network collaboration are developing, where students and teachers from different countries work together on projects using digital platforms. Successful organizational transformation will allow universities to maintain their relevance in the conditions of the digital economy, turning into nodes of a global network of creation and knowledge dissemination.

The modern paradigm of higher education sets before universities the complex task of radically restructuring their infrastructure in response to the challenges of the digital era. As researchers of educational spaces note [2; 4], a fundamental change in the understanding of the university environment is occurring, where the physical campus is increasingly integrated with digital educational resources, forming a fundamentally new educational ecosystem. This global trend finds a unique embodiment in Russian universities, where transformation occurs considering the national characteristics of the higher education system. Traditional campuses, historically created for the classical model of in-person education, are gradually evolving into flexible, multifunctional educational hubs. A characteristic feature of this transformation is the emergence of fundamentally new types of learning spaces. Instead of the familiar lecture halls with rigid layouts, adaptive "smart" classrooms equipped with interactive technologies are emerging. Next-

generation project coworking spaces are replacing traditional reading rooms, and VR laboratories open up opportunities for immersive learning, blurring the boundaries between physical and virtual reality.

The transformation of university infrastructure into "onlife" educational spaces is being carried out in Russia within the framework of the state program "Priority 2030," aimed at creating excellent universities. Universities receive grants for the development of "digital campuses" as part of the national project "Science and Universities." This allows educational institutions to be equipped with modern equipment: interactive panels, zones for collaborative work, and VR technologies. A feature of the Russian approach is the emphasis on creating "boiling points" – innovative educational spaces that combine digital technologies and new pedagogical practices.

Thus, Russian universities are gradually transitioning to a model of hybrid educational spaces, where technologies do not simply supplement but qualitatively transform traditional learning formats. This process, although still sporadic in nature, lays the foundation for the systemic digital transformation of higher education in Russia.

The modern paradigm of higher education is overcoming the traditional boundaries of the university campus, transforming the entire life context of the student into a unified educational ecosystem. Everyday spaces – from libraries and coworking spaces to cafes and company offices – are acquiring new educational potential through the strategic use of digital technologies. This approach not only expands the geography of learning but creates organic conditions for the formation of professional competencies through immersion in real practical contexts.

As research by K. Ninnemann [3; 4] convincingly demonstrates, the modern university faces the necessity of radically rethinking its own spatial organization. The traditional dichotomy of physical and digital is giving way to the concept of holistic educational environments that ensure the continuity of the educational process beyond rigid temporal and spatial frameworks. A key characteristic of such environments is their ability to organically adapt to the daily practices of students, transforming any suitable space – be it a university classroom, a city cafe, or a corporate office – into an effective platform for learning and professional development.

This transition reflects a deeper transformation of the university's role – from an isolated "temple of knowledge" to an active participant in a networked educational ecosystem, where academic learning naturally intertwines with professional practice and everyday life.

Pedagogical Aspect. Parallel to infrastructural changes, profound pedagogical transformations are taking place. The development of hybrid learning methodologies requires a delicate balance between online components (MOOCs, simulators, AI tutors) and in-person activities (discussions, project work). A key problem is preserving academic depth and education quality with a significant increase in the proportion of digital formats. A particular difficulty is the need to adapt pedagogical approaches to fundamentally new learning conditions.

A separate challenge is ensuring the **digital sustainability of the educational system** [6]. The growing demand for lifelong learning requires the creation of flexible, adaptive educational trajectories that extend far beyond traditional educational programs. However, this also creates a risk of increased digital inequality among both students and teachers, which necessitates

the development of special compensatory mechanisms.

In response to these challenges, new promising practices for organizing learning spaces are emerging. Hybrid classrooms implementing the "flipped classroom" model [7], where theory is studied online and classroom time is dedicated to practice and collaboration, are becoming a new standard. Immersive environments based on VR/AR technologies allow for the modeling of professional scenarios in medicine, engineering, and other fields, blurring the line between study and real practice [8; 9]. Digital campuses in the format of educational metaverses [10] open up fundamentally new opportunities for interaction, learning, and research in virtual space.

A central change is the **rethinking of the teacher's role**. From a bearer and transmitter of knowledge, the educator is transforming into a moderator of the educational process, a designer of individual trajectories, and a mentor in the digital environment. Such a transformation requires the teacher to develop a fundamentally new set of professional competencies. Firstly, this is digital pedagogical literacy – the ability to effective use of digital tools and platforms in the educational process [11]. Secondly, skills for working in a hybrid environment are necessary, allowing for equally productive conduct of classes both in the classroom and online. Thirdly, a modern teacher must possess the ability to organize distributed learning, coordinating the educational process across various digital and physical spaces. Finally, the most important competency becomes the ability to work with educational analytics – interpreting data from students' digital footprints and using it to personalize learning.

These changes reflect a deeper transformation of the pedagogical paradigm – from the model of "teacher as a source of knowledge" to the model of "teacher as an architect of the educational environment." In the new conditions, the educator becomes not so much a lecturer as a coordinator of cognitive activity, helping students navigate the information flow, critically evaluate sources, and construct their own knowledge.

Such a transition requires not only mastering new technologies but also revising pedagogical thinking. The teacher needs to learn how to flexibly combine different learning formats, create conditions for students' independent cognitive activity, and effectively use the potential of digital tools to achieve educational outcomes. All this makes the modern teacher a key agent of educational transformation in the digital age.

Teaching methods are undergoing significant evolution. The classical lecture model, which dominated the academic environment for centuries, is gradually giving way to more dynamic and interactive learning formats. The concept of blended learning, which integrates the best features of in-person and distance education [12], is replacing the passive perception of information. This approach allows for the flexible combination of independent work with digital resources and live interaction in the classroom, creating a personalized educational environment.

The **flipped classroom model** is gaining particular popularity, changing the traditional logic of the educational process. Students master theoretical material independently through digital resources, while classroom time is dedicated to in-depth discussion, practical assignments, and collective problem-solving.

Project-based learning is actively developing in the digital environment, allowing students to apply knowledge to

solve real-world problems. Virtual laboratories, online collaborations, and digital project tools are blurring the boundaries between study and professional practice.

An innovative trend has been the introduction of **gamified educational practices** that use game mechanics to increase motivation and engagement. From point-rating assessment systems to full-fledged educational quests, game elements turn learning into an engaging process while maintaining academic rigor.

This methodological revolution reflects deeper changes in the educational paradigm – a transition from the transmission of knowledge to creating conditions for independent cognition, from unified programs to personalized trajectories, from the passive assimilation of information to the active construction of knowledge. As a result, not only the form but the very essence of pedagogical interaction in higher education is changing.

The modern educational environment requires fundamentally **new approaches to creating learning materials** capable of functioning effectively in the conditions of digital reality. Traditional linear formats are giving way to innovative solutions that consider the peculiarities of digital information perception and new educational needs.

Micromodular courses [13] are coming to the fore, presenting information in the form of compact, logically complete blocks. This format allows for the creation of a flexible and adaptive learning system where each student can build an individual trajectory by combining modules according to their needs and pace of perception. The micromodular structure is especially relevant in the context of constant knowledge updates, as it allows for prompt changes to individual course components without revising the entire program.

Modern interactive educational resources are fundamentally changing the nature of working with learning materials. Unlike passive reading or viewing, they offer comprehensive solutions that include built-in self-assessment systems, interactive simulators, and opportunities for collaborative work. Such resources transform learning into an active process of exploration and discovery, where the student does not just receive information but interacts with it, tests hypotheses, and immediately applies knowledge in practice. A particular revolution in education is being made by **adaptive learning systems** [14], which use artificial intelligence and data analysis technologies. These systems are capable of adapting in real-time to each student's level of preparation, analyzing mistakes made, offering personalized routes for mastering the material, and predicting educational outcomes. This approach makes it possible to create a truly individual learning trajectory that considers the cognitive characteristics and professional interests of each student.

The most impressive prospects are opened by **immersive educational environments** based on virtual and augmented reality (VR/AR) technologies. These technologies create an effect of complete immersion, allowing students to master complex or dangerous processes "in practice," visualize abstract concepts, and practice professional skills in a safe yet maximally realistic environment [15].

These innovative formats of educational materials form a fundamentally new educational ecosystem that ensures personalization of learning at a previously inaccessible level, significantly increases student engagement and motivation, develops

practical competencies through the simulation of real professional situations, and allows for the prompt updating of content in accordance with changes in professional fields.

However, despite the importance of technological innovations, the key task remains preserving the scientific depth and methodological validity of educational content. As some researchers rightly note, "replacing components of real educational activity with digital analogues is fraught with consequences: the loss of writing skills, a decrease in the level of reading competence, readiness for verbal communication and social interaction" [16; 17]. New formats should not just amaze with technological capabilities but genuinely increase the efficiency of knowledge acquisition and the formation of professional competencies. This requires thorough methodological justification, pedagogical testing, and constant improvement of digital educational materials based on feedback from all participants in the educational process.

The modern educational paradigm requires a radical **revision of traditional approaches to assessing learning outcomes**. The outdated system of exams and tests, focused on one-time knowledge checks, is giving way to comprehensive solutions that reflect the real progress of students in the digital educational environment. A key innovation is continuous digital assessment of activity, which allows tracking the successes of learners throughout the entire educational process. Unlike traditional exams, this approach considers not only final results but also developmental dynamics, engagement in the learning process, and the ability to apply knowledge in practice.

An important tool for assessment is the analysis of educational digital footprints [17] – data on a student's interaction with learning materials, participation in discussions, completion of assignments, and other activities in the digital environment. This data, processed using big data technologies and learning analytics, makes it possible to create an objective picture of academic progress and identify the individual educational needs of each student.

The validation of acquired competencies is gaining particular importance – confirming not only theoretical knowledge but also the practical skills formed during the learning process. This approach involves assessing the ability to solve real professional tasks, which is especially important in the context of rapidly changing labor market demands.

An innovative solution is the use of **blockchain technologies for recording educational achievements** [18]. Distributed ledger technology enables the creation of reliable, tamper-proof digital portfolios that include all educational outcomes – from course grades to certificates for completing additional programs. This approach ensures transparency and the recognition of qualifications at the international level.

These changes lead to the formation of a fundamentally new assessment culture, where the emphasis shifts from control to development, assessment becomes a tool for feedback rather than just a measurement of results, the entire spectrum of educational achievements is taken into account, and the transparency and objectivity of assessment procedures are ensured. Such an approach not only improves the quality of assessment but also fosters in students a sense of responsibility for their own learning, developing self-assessment and reflection skills, which is particularly important in the context of lifelong learning.

However, the implementation of these innovations requires serious retraining of the teaching staff, the development of new assessment standards, and the creation of appropriate technological infrastructure. It is important to find a balance between the use of digital technologies and the preservation of the humanitarian component of the educational process so that assessment remains not only objective but also pedagogically appropriate.

The modern digital transformation of education presents teachers with a complex dilemma: how to **combine technological progress with the preservation of fundamental educational values**. This challenge requires careful balancing between innovative methods and traditional pedagogical principles. One of the key tasks is ensuring substantive depth in the context of digital learning formats. Technologies, for all their effectiveness, must not become an end in themselves, replacing the meaningful content of the educational process. Teachers need to develop digital resources that are not just engaging in format but also maintain academic rigor, scientific reliability, and the conceptual integrity of the learning material.

An equally important problem is the development of critical thinking in conditions of information overload. Modern students encounter a huge flow of data daily, and the key task of education is to teach them not just to consume information but to analyze it, evaluate the reliability of sources, identify cause-and-effect relationships, and form reasoned judgments. This requires special pedagogical strategies that go beyond simply mastering digital tools.

A particular difficulty is preserving the educational component in digital education. Traditionally, the university performed not only an educational but also a socializing function, forming value orientations and professional ethics. In the context of distance and hybrid learning, it is necessary to find new ways to transmit these intangible yet extremely important aspects of education.

Separate attention deserves the support of the socio-emotional development of learners. The digital environment, for all its advantages, creates a risk of a deficit in live human communication, empathy, and emotional intelligence. Teachers need to consciously design educational situations that develop not only cognitive abilities but also skills of communication, cooperation, and emotional regulation.

Solving these tasks requires a comprehensive approach: the integration of digital tools into a well-thought-out pedagogical system, the development of criteria for assessing the quality of digital content, the creation of methodologies that combine technological capabilities with the development of critical thinking, and the special training of teachers for working in new conditions. Only such a balanced approach will allow the realization of the potential of digital technologies without sacrificing the fundamental values of education: depth of knowledge, critical thinking, educational impact, and the holistic development of the individual. This is especially important in conditions where education is becoming a lifelong process, and its results determine not only professional success but also the quality of life as a whole

Modern digital technologies open up unprecedented opportunities for **personalizing the educational process**, allowing to overcome the limitations of the traditional "averaged" model of learning [19]. In the context of digital transformation, education becomes truly individual, taking into account the

unique characteristics and needs of each student. A key advantage of digital technologies is the ability to adapt content to the specific needs of learners. Intelligent educational systems analyze a student's level of preparation, professional interests, and learning goals, offering relevant educational material. This approach avoids both excessive and insufficient complexity of content, ensuring optimal conditions for knowledge acquisition. Based on data analysis, digital platforms enable the construction of personal educational trajectories that take into account previous academic experience, professional ambitions, the pace of mastering material, and preferred learning styles. These trajectories are not rigidly fixed; the system constantly analyzes progress and can suggest adjustments to the route. An important feature of digital solutions is the possibility of prompt adjustment of the educational process. Teachers get access to real-time analytics and can quickly make changes – complicating or simplifying tasks, offering additional materials, or changing the sequence of studying topics. This is especially valuable in the context of heterogeneous study groups.

Modern learning technologies make it possible to account for students' cognitive characteristics: visual learners are offered infographics and video materials, auditory learners get access to podcasts and audio lectures, kinesthetic learners have access to interactive simulations and practical tasks, and students with perceptual characteristics are provided with adapted material formats. Such deep personalization becomes possible thanks to the development of artificial intelligence technologies, big data analysis, and adaptive learning systems. However, it is important to emphasize that technological solutions do not replace but enhance the role of the teacher, who acts as a tutor, helping the student to use their personal educational trajectory most effectively.

Personalized learning in a digital environment creates conditions for increasing student motivation and engagement, reducing the time required to master material, achieving a deeper understanding of complex concepts, and developing self-regulated learning skills. This approach is especially important in the context of lifelong education, when a person throughout their life has to master new knowledge and skills in a constantly changing world. Personalization is becoming not just a pedagogical technique but a necessary condition for effective education in the 21st century.

The modern digital environment requires a fundamental **rethinking of approaches to pedagogical design**. Traditional models of organizing educational space and time, based on a clear separation of classroom and independent work, formal and informal learning, are losing their relevance. In the conditions of the onlife paradigm, education becomes a continuous process, smoothly integrated into the daily life of students, which requires the creation of fundamentally new educational ecosystems.

Modern pedagogical design faces the need to solve a complex set of tasks. First of all, the development of flexible systems for planning the educational process is required, taking into account individual rhythms of student productivity and allowing for the harmonious combination of learning with other types of activities. At the same time, the creation of mobile educational scenarios that can adapt to constantly changing conditions and ensure the continuity of the educational process, regardless of location and devices used, is of particular importance.

The most important aspect is the design of adaptive digital environments that do not simply transfer traditional forms of learning into an online format but create fundamentally new opportunities for a personalized educational experience. Such environments should ensure smooth transitions between different learning formats while maintaining the integrity of the educational process and the unity of the system for assessing achievements.

The new approach to pedagogical design requires developers to have a deep understanding of the digital behavior of modern learners, proficiency in current tools for designing educational experiences, and the ability to forecast the development of educational technologies. The result of this work is the creation of an educational environment that naturally integrates into everyday life, supports the continuity of the learning process, and contributes to the formation of sustainable competencies, while remaining human-oriented and preserving the best traditions of pedagogy.

The modern educational paradigm is increasingly shifting towards the development of **collaborative pedagogy**, which in the digital environment acquires new forms and opportunities [20]. In conditions where the boundaries between formal and informal learning are becoming more and more conventional, technologies that promote joint cognitive activity and the creation of professional educational communities are of particular importance.

The digital environment opens up unprecedented opportunities for organizing collective work, allowing students and teachers to interact regardless of geographical and time constraints. Modern platforms and tools create a space for collaborative problem-solving, idea discussion, and mutual learning, which fundamentally changes the nature of the educational process. In this context, crowdsourcing educational projects, where the knowledge and experience of numerous participants are combined to achieve common learning goals, begin to play an important role.

A special place in the new educational reality is occupied by professional learning communities, which are becoming an important element of continuous education. These communities, uniting students, teachers, and practicing specialists, create an environment for the exchange of experience, joint solving of professional tasks, and constant professional growth. In the digital environment, the traditional practice of mentoring is also being transformed. Modern technologies make it possible to build systems of support and guidance that are not limited by the formal framework of the educational process [21]. Digital mentoring becomes more flexible, personalized, and accessible, covering all stages of professional development.

Thus, collaborative pedagogy in the digital age is undergoing a qualitative transformation, opening up new opportunities for joint cognitive activity, professional development, and the creation of sustainable educational communities. This process not only changes the forms of organization of the educational process but also contributes to the formation of a new learning culture based on the mutual exchange of knowledge and experience. This is especially important in conditions where education is becoming a lifelong process, and its results determine not only professional success but also the quality of life as a whole.

Epistemological Aspect. The modern digital era is fundamentally changing the very nature of cognitive processes in higher education. The

traditional linear model of knowledge transfer, where information sequentially passed from teacher to student through lectures and textbooks, is giving way to a complex networked structure of cognition. In the new paradigm, knowledge ceases to be a static product, becoming a dynamic process of constant construction and rethinking [22].

The digital environment creates fundamentally different conditions for working with information. Modern learners operate not with a limited set of sources, but with an endless flow of data accessible through online courses, scientific platforms, and expert communities. This leads to a radical decentralization of knowledge – it is no longer concentrated exclusively within university walls but is distributed across various digital platforms and networks.

The most important characteristic of the new cognitive regime is the transition from the passive assimilation of information to the active co-construction of meaning. Students now act not merely as consumers of knowledge but as its creators through participation in wiki-projects, educational blogs, and crowdsourcing research. Artificial intelligence technologies play a special role in this process, acting as cognitive partners – from chatbots to big data analysis systems.

The ways of representing knowledge are also undergoing significant changes. Traditional text is supplemented (and sometimes replaced) by visual formats – infographics, 3D models, VR simulations. Hypertext structures create non-linear paths for mastering information, and gamified approaches introduce new motivation mechanisms.

However, these transformations also generate serious challenges. Information overload requires the development of skills for critical selection and structuring of content. The problem of knowledge reliability actualizes the importance of media literacy and fact-checking. Superficial "clip thinking" becomes a threat to the depth of cognition, and algorithmic bias becomes a new factor influencing the formation of a worldview.

Under these conditions, the role of the university is logically transformed – from a monopolistic "keeper of knowledge" it turns into a navigator, helping to navigate complex digital cognitive landscapes. This requires a rethinking of both pedagogical approaches and the educational spaces themselves, which should ensure a smooth transition between physical and digital environments of cognition.

Thus, the epistemological aspect of the onlife paradigm presupposes a fundamental revision of the nature of cognitive processes – from methods of working with information to the very concept of knowledge. These changes pose for higher education the task of developing new educational models capable of functioning effectively in the conditions of the digital cognitive landscape.

Socio-Psychological Aspect. The phenomenon of onlife education fundamentally changes the socio-psychological foundations of the educational process, creating new forms of academic interaction and transforming traditional role models. In the digital environment, a complex restructuring of the mechanisms of socialization, communication, and personal development of participants in the educational process occurs.

A central change is the transformation of academic identity. Teachers and students are forced to master new digital roles, balancing between physical presence and virtual representation. This gives rise to the phenomenon of "hybrid identity," when a professional image exists simultaneously in several dimensions – both in the classroom and in digital educational spaces. The need for constant self-construction in the digital

environment presents a particular difficulty, where the image of a teacher or student is formed through the totality of digital footprints – from academic profiles to activity in educational chats.

Social interactions in the onlife environment acquire fundamentally new characteristics. Traditional forms of academic communication are supplemented by digital practices, creating a complex communicative landscape. On the one hand, this expands opportunities for cooperation – students gain access to global academic networks, can participate in international projects, and find experts worldwide. On the other hand, the phenomenon of "digital loneliness" arises, where the depth of interpersonal connections decreases despite a formal increase in the number of contacts.

The psychological load in the onlife environment has specific features: cognitive overload due to the need to constantly switch between physical and digital spaces; emotional burnout associated with the "Zoom effect" fatigue from video communications; anxiety caused by the need for digital self-presentation; and a deficit of non-verbal signals in communication, leading to misunderstandings.

A particular problem is the digital socialization of students. If traditionally the university performed an important function as a "social elevator" and an environment for forming professional connections, then in the onlife format these processes require special design. There is a need to create digital analogs of "corridor science" – spaces for spontaneous professional interactions.

Paradoxically, the onlife environment simultaneously expands and limits opportunities for social development. On the one hand, it removes geographical and temporal barriers to communication. On the other hand, it requires special efforts to maintain the "human dimension" in education, which becomes a new professional competence for both teachers and organizers of the educational process.

These changes require a rethinking of approaches to psychological support of the educational process, the development of new formats of tutor support, and the creation of special methods for developing digital empathy and communicative competence of all participants in the educational process.

Cultural Aspect and Transformation of Academic Traditions. The contemporary digital revolution in education is leading to a profound restructuring of the cultural foundations of university life, creating a complex synthesis of centuries-old academic traditions and new digital practices [23]. This transformation touches the very essence of university culture, rethinking the basic values and rituals of the academic community. Traditional forms of university life – lectures, seminars, scientific discussions, and research defenses – are acquiring fundamentally new hybrid forms that combine physical presence with digital participation. This synthesis gives rise to important cultural phenomena: a rethinking of the value of "presence" in the educational process, the emergence of new digital academic rituals, and a transformation of the ceremonial aspects of university life.

Simultaneously, a new digital ethos is forming in the onlife environment – a system of ethical norms and professional values adapted to the conditions of digital reality. A culture of digital collaboration is developing, the principles of academic integrity in the age of artificial intelligence are being reconsidered, and new standards for digital interaction are being developed. The transformation of the culture of academic communication is acquiring particular significance: traditional scientific discussions are moving into a hybrid space, new formats for conducting conferences are emerging,

and the genres of academic writing and publication activity are changing.

However, the most complex challenge becomes the problem of preserving the unique "university spirit" in the context of digital transformation. Issues of transferring informal knowledge, maintaining corporate identity, and preserving the academic community require special attention. The digital environment also intensifies intergenerational cultural gaps, manifested in differences in digital habits, understanding of academic hierarchies, and expectations from the educational process among teachers and students of different age groups.

The globalizing influence of digital technologies creates new cultural dilemmas: on the one hand, there is a unification of educational practices, and on the other, unprecedented opportunities for intercultural dialogue arise. In this context, the conscious design of cultural transformation, aimed at preserving essential academic values while adapting to digital reality, becomes particularly important. Such an approach implies not a mechanical transfer of traditional forms into the digital environment, but a creative rethinking of university culture capable of ensuring the harmonious development of the academic community under the conditions of the onlife paradigm.

Concluding Remarks. The comprehensive analysis conducted in this study demonstrates that the "onlife" paradigm represents a fundamental transformation of higher education that extends far beyond technological integration. Our research reveals that this shift necessitates a complete reimagining of educational ecosystems, where the traditional boundaries between physical and digital, formal and informal, and academic and professional become seamlessly blended.

The study yields several crucial findings. First, the successful implementation of the onlife model requires synchronized development across five critical dimensions: organizational infrastructure that supports flexible, ecosystem-based university models; pedagogical approaches that leverage hybrid learning methodologies while redefining teacher roles; epistemological frameworks that recognize knowledge as dynamically co-constructed; socio-psychological support systems that address new identity formations in digital environments; and cultural evolution that preserves core academic values while embracing digital innovation.

Second, our analysis confirms that digital technologies function most effectively as catalysts rather than endpoints, enhancing traditional educational values of accessibility, quality, and foundational knowledge when properly embedded within thoughtful pedagogical systems. The examination of implementation efforts, including Russia's "Priority 2030" program, reveals both the significant potential and substantial challenges of large-scale digital transformation in higher education.

Third, we identify several persistent challenges that require ongoing attention: maintaining academic rigor and critical thinking capabilities in an era of information abundance; preserving essential human connections and socialization functions within hybrid learning environments; addressing digital inequality and the psychological impacts of constant connectivity; and balancing technological innovation with the preservation of fundamental educational values.

The emergence of the onlife paradigm in higher education presents not merely a necessary adaptation to digital reality, but a profound opportunity to reimagine the very nature of university education. As institutions navigate this transition, they must evolve from isolated repositories of knowledge to dynamic participants in networked

educational ecosystems. This transformation demands holistic strategic planning that coordinates technological modernization with curricular renewal, faculty development, and cultural adaptation.

Looking forward, universities that successfully implement the onlife paradigm will be characterized by their ability to provide seamless educational experiences that transcend physical and temporal boundaries while maintaining the depth, rigor, and human connection that have long defined quality higher education. The ultimate success of this transformation will be measured not by the sophistication of the technologies employed, but by the institutions' capacity to develop critically thinking, adaptable individuals equipped to navigate an increasingly complex world while preserving the essential humanistic values at the core of meaningful education.

References

1. Floridi L. The Online Manifesto: Being Human in a Hyperconnected Era [Text]. – Basel: Springer, 2014. – 187 p.
2. Norberg A. From Blended Learning to Learning Onlife: ICTs, Time and Access in Higher Education [Text]. – Umeå: Umeå Universitet, Department of Applied Educational Science, 2017. – 210 p.
3. Ninnemann K. Innovationsprozesse und Potentiale der Lernraumgestaltung an Hochschulen: Die Bedeutung des dritten Pädagogen bei der räumlichen Umsetzung des „Shift from Teaching to Learning“ [Text]. – Münster: Waxmann, 2018. – 184 p.
4. Ninnemann K. Onlife Learning Spaces: Handlungsperspektiven hybrider Lernumgebungen an Hochschulen [Text] // Gemeinsam gestalten: Digitale Transformation in Studium und Lehre. Innovative Formate, Strategien und Netzwerke. – Wiesbaden: Springer VS, 2021. – P. 283–299. – DOI: https://doi.org/10.1007/978-3-658-32849-8
5. Shelepaeva A. Kh. Digital transformation of the higher education system: directions and risks [Text] // Open Education. – 2023. – Vol. 27, no. 4. – P. 42–51. – DOI: http://dx.doi.org/10.21686/1818-4243-2023-4-42-51 . [in Russian]
6. Federal Project “Digital Educational Environment” [Online resource] // Official Website of the Russian Ministry of Education. – URL: https://edu.gov.ru/national-project/projects/cos/ (accessed: 02.08.2025). [in Russian]
7. Itinson K. S., Chirkova V. M. The flipped classroom: an innovative teaching model in higher education institutions [Text] // Bulletin of BGZ. – 2020. – No. 2 (31). – P. 88–90. – URL: https://cyberleninka.ru/article/n/perevernutyy-klass-innovatsionnaya-model-obucheniya-v-vysshem-uchebnom-zavedenii (accessed: 03.11.2025). [in Russian]
8. Paskova A. A. Features of application of immersive technologies of virtual and augmented reality in higher education [Text] // Vestnik of Maikop State Technological University. – 2022. – No. 3. – P. 83–92. – URL: https://cyberleninka.ru/article/n/osobennosti-primeneniya-immersivnyh-tehnologiy-virtualnoy-i-dopolnennoy-realnosti-v-vysshem-obrazovanii (accessed: 03.11.2025). [in Russian]
9. Maltseva S. M., Sofonov D. A., Nagornov E. A. Immersive learning: prospects and challenges of implementing VR/AR/MR technologies in the educational process [Text] // Issues of Modern Pedagogical Education. – 2024. – No. 85–1. – P. 233–235. – URL: https://cyberleninka.ru/article/n/immersivnoe-obuchenie-perspektivy-i-vyzovy-vnedreniya-vr-ar-mr-tehnologiy-v-obrazovatelnyy-protsess (accessed: 03.11.2025). [in Russian]
10. Sorina G. V., Gurov F. N. The metaverse and the challenges of modern education [Text] // Moscow University Bulletin. Series 20: Pedagogical Education. – 2022. – No. 3. – P. 9–23. – URL: https://cyberleninka.ru/article/n/metavselennaya-i-problemy-sovremennogo-obrazovaniya (accessed: 03.11.2025). [in Russian]
11. Kolykhmatov V. I. Digital literacy and skills of the modern teacher [Text] // Uchenye Zapiski of Lesgaft National State University of Physical Education, Sport and Health. – 2020. – No. 8 (186). – P. 156–160. – URL: https://cyberleninka.ru/article/n/tsifrovaya-gramotnost-i-navyki-sovremennogo-pedagoga (accessed: 03.11.2025). [in Russian]
12. Pletyago T. Yu., Ostapenko A. S., Antonova S. N. Pedagogical models of blended learning in higher education: summarizing Russian and international experience [Text] // Education and Science. – 2019. – No. 5. – P. 112–129. – URL: https://cyberleninka.ru/article/n/pedagogicheskie-

modeli-smeshannogo-obucheniya-v-vuze-obobschenie-opyta-rossiyskoy-i-zarubezhnoy-praktiki (accessed: 03.11.2025). [in Russian]
13. Denishcheva L. O., Safuanov I. S., Semenyachenko Yu. A. Personalised higher education based on microcourses: possible ways of implementation [Text] // Education and Science. – 2024. – No. 3. – P. 40–68. – URL: https://cyberleninka.ru/article/n/personalizirovannoe-vysshee-obrazovanie-na-osnove-mikrokursov-vozmozhnye-puti-realizatsii (accessed: 03.11.2025). [in Russian]
14. Skvorchevsky K. A., Dyatlova O. V. Modern adaptive and intelligent digital learning systems: mechanisms and potential [Text] // Voprosy Obrazovaniya / Educational Studies Moscow. – 2024. – No. 3 (2). – P. 299–336. – URL: https://cyberleninka.ru/article/n/sovremennye-adaptivnye-i-intellektualnye-tsifrovye-sistemy-obucheniya-mehanizmy-i-potentsial (accessed: 03.11.2025). [in Russian]
15. Grigoryeva I. V. Analysis of challenges, conditions and risks of using immersive virtual (VR) and augmented reality (AR) technologies in education [Text] // Vestnik UROI. – 2024. – No. 1. – P. 31–45. – URL: https://cyberleninka.ru/article/n/analiz-vyzovov-usloviy-i-riskov-ispolzovaniya-immersivnyh-tehnologiy-virtualnoy-vr-i-dopolnennoy-realnosti-ar-v-obrazovanii (accessed: 03.11.2025). [in Russian]
16. Antonova D. A., Ospennikova E. V., Spirin E. V. Digital transformation of the education system: designing resources for a modern digital learning environment as one of its key directions [Text] // Educational Technologies and Society. – 2018. – P. 1–37. [in Russian]
17. Bogdanova A. N., Lapchik D. M., Fedorova G. A. Educational practices of collecting and analysing digital footprint data of school students [Text] // Vestnik of SIBIT. – 2023. – No. 4. – P. 12–20. – URL: https://cyberleninka.ru/article/n/obrazovatelnye-praktiki-sbora-i-analiza-dannyh-tsifrovogo-sleda-shkolnikov (accessed: 03.11.2025). [in Russian]
18. Sidorov D. P., Kamaeva A. A. Blockchain technology and its potential applications in the educational process [Text] // Open Education. – 2019. – No. 3. – P. 94–101. – URL: https://cyberleninka.ru/article/n/tehnologiya-blokcheyn-i-vozmozhnosti-ee-primeneniya-v-uchebnom-protsesse (accessed: 03.11.2025). [in Russian]
19. Loskutova A. V. Practical application of digital technologies in personalizing higher education [Text] // Kant. – 2023. – No. 2 (47). – P. 313–320. – URL: https://cyberleninka.ru/article/n/prakticheskoe-primenenie-tsifrovyh-tehnologiy-v-protsesse-personalizatsii-vysshego-obrazovaniya (accessed: 03.11.2025). [in Russian]
20. Tikhonovetskaya I. P., Vayndorf-Sysoeva M. E. Organization of collaborative learning in a digital educational environment [Text] // Humanities Research: Pedagogy and Psychology. – 2022. – No. 9. – P. 26–33. – URL: https://cyberleninka.ru/article/n/organizatsiya-uchebnogo-sotrudnichestva-v-tsifrovoy-obrazovatelnoy-srede-1 (accessed: 03.11.2025). [in Russian]
21. Shcherbakova T. V. The role of a teacher training university in mentoring young teachers: results of piloting a dual in-person and remote mentoring and methodological support model for young teachers at Moscow City Pedagogical University (2017–2020) [Text] // Society: Sociology, Psychology, Pedagogy. – 2020. – No. 9. – URL: https://cyberleninka.ru/article/n/rol-pedagogicheskogo-vuza-v-sisteme-nastavnichestva-molodyh-pedagogov-rezultaty-aprobatsii-modeli-dvoynoy-ochnoy-distantsionnoy (accessed: 03.11.2025). [in Russian]
22. Kapitonova T. The role of network structures in contemporary scientific cognition [Online resource] // Science and Innovations. – 2019. – No. 7 (197). – P. 64–68. – URL: https://cyberleninka.ru/article/n/rol-setevyh-struktur-v-sovremennom-nauchnom-poznanii (accessed: 03.11.2025). [in Russian]
23. Piskunova E. V., Zair-Bek E. S. Academic culture of the university under the conditions of digital transformation in education [Text] // International Journal of Cultural Research. – 2023. – No. 4 (53). – P. 82–93. – DOI: 10.52173/2079–1100_2023_4_82. [in Russian]

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ЦИФРЛАНДЫРУДАН КЕЙІНГІ: ЖОҒАРЫ БІЛІМ БЕРУДІҢ ЖҮЙЕЛІК ТРАНСФОРМАЦИЯСЫ РЕТІНДЕГІ ӨМІРДІК ПАРАДИГМ

Аңдатпа. Бұл мақалада «onlife» парадигмасы жоғары білім берудің терең трансформациясы ретінде талданады, цифрлық және физикалық кеңістіктер арасындағы шекараларды бұлдырайды. Тұжырымдамалық тәсілді қолдана отырып, бұл трансформация ұйымдастырушылық, педагогикалық, эпистемологиялық, әлеуметтік-

психологиялық және мәдени аспектілерде қалай көрінетіні қарастырылады. Авторлар onlife қатаң университет құрылымдарынан мұғалімдер білім беру ортасының сәулетшілері ретінде әрекет ететін икемді, бейімделгіш экожүйелерге ауысуды қажет ететінін және білім статикалық объект емес, динамикалық, бірлесіп жасалған процесс екенін көрсетеді. Сандық технологиялар өзіндік мақсат ретінде емес, дәстүрлі құндылықтарды: қолжетімділікті, сапа мен сыни ойлауды дамытуды күшейтетін катализатор ретінде қарастырылады. Академиялық тереңдікті сақтау, цифрлық теңдікті қамтамасыз ету және оқытудың адами өлшемін қорғау мәселелеріне ерекше назар аударылады. Бұл парадигманы сәтті енгізу тек технологиялық жаңғыртуды педагогиканы, мәдениетті және оқытушылардың кәсіби дамуын жаңартумен біріктіретін, университеттерге жаһандық білім желілері мен өмір бойы оқытудың орталықтарына айналуға мүмкіндік беретін тұтас стратегия арқылы мүмкін болады.

Тірек сөздер: Onlife парадигмасы, білім берудің цифрлық трансформациясы, жоғары білім, білім беру экожүйесі, цифрлық педагогика, академиялық мәдениет, жекелендірілген оқыту.

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ПОСТЦИФРОВИЗАЦИЯ: ПАРАДИГМА «ОНЛАЙФ» КАК СИСТЕМНАЯ ТРАНСФОРМАЦИЯ ВЫСШЕГО ОБРАЗОВАНИЯ

Аннотация. В статье анализируется парадигма «онлайф» как глубокая трансформация высшего образования, стирающая грань между цифровым и физическим пространствами. На основе концептуального подхода исследуется, как эта трансформация проявляется в организационных, педагогических, эпистемологических, социально-психологических и культурных аспектах. Авторы показывают, что онлайф требует смены жёстких университетских структур на гибкие, адаптивные экосистемы, в которых преподаватель выступает архитектором образовательной среды, а знание — не статичным объектом, а динамическим, совместно создаваемым процессом. Цифровые технологии рассматриваются не как цель, а как катализатор, усиливающий традиционные ценности: доступность, качество и развитие критического мышления. Особое внимание уделяется вызовам: сохранению академической глубины, обеспечению цифрового равенства и защите человеческого измерения обучения. Успешная реализация парадигмы возможна лишь через целостную стратегию, объединяющую технологическую модернизацию с обновлением педагогики, культуры и профессионального развития преподавателей, что позволяет университетам стать центрами глобальных сетей знаний и непрерывного обучения.

Ключевые слова: парадигма «онлайф», цифровая трансформация образования, высшее образование, образовательная экосистема, цифровая педагогика, академическая культура, персонализированное обучение.

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