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**КЫРГЫЗ РЕСПУБЛИКАСЫНДАГЫ БИЛИМ БЕРҮҮНҮ САНАРИПТЕШТИРҮҮ:
ПРОБЛЕМАЛАР ЖАНА КЕЛЕЧЕКТЕР**

**ЦИФРОВИЗАЦИЯ ОБРАЗОВАНИЯ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ
В КЫРГЫЗСКОЙ РЕСПУБЛИКЕ**

**DIGITALISATION OF EDUCATION: PROBLEMS AND PROSPECTS
IN THE KYRGYZ REPUBLIC**

Кыскача мүнөздөмө: Макалада Кыргыз Республикасында билим берүү системасын санариптештирүүнүн көйгөйлөрү жана келечеги каралат. Кыргызстан, Россия жана Сингапурдагы санариптик билим берүү процессинин салыштырмалуу анализи жүргүзүлөт. Негизги көйгөйлөр жана өнүгүү жолдору сунушталат.

Аннотация: В статье рассматриваются проблемы и перспективы цифровизации системы образования в Кыргызской Республике. Обсуждается мировой опыт цифрового образования, а также проводится сравнительный анализ цифровизации образования в Кыргызстане, России и Сингапуре. Выделяются основные вызовы и предлагаются рекомендации для дальнейшего развития цифрового обучения.

Abstract: The article examines the problems and prospects of digitalization in the education system of the Kyrgyz Republic. It discusses global experience and provides a comparative analysis of digital education in Kyrgyzstan, Russia, and Singapore. The main challenges are highlighted, along with recommendations for future development.

Негизги сөздөр: санариптештирүү; билим берүү; технологиялар; Кыргызстан; Россия; Сингапур; дүйнөлүк тажрыйба.

Ключевые слова: цифровизация; образование; технологии; Кыргызстан; Россия; Сингапур; дистанционное обучение; мировой опыт.

Keywords: digitalization; education; technology; Kyrgyzstan; Russia; Singapore; distance learning; global experience.

Introduction.

At the beginning of this article I would like to outline my position on the situation in education. At the present stage of development of sciences, including human and social sciences, production technologies, culture (intellectual, technological, social, spiritual, informational) and education itself, there is a need for transition to a practice-oriented type of lifelong learning based on the fundamental content of sciences and inexhaustible possibilities of a human being as a subject of general and professional development, including through the use of huge opportunities of

digital learning tools. A human being is an integral unity of spirit (basic social and personal values and principles), soul (all mental processes) and body, which realises the goals and fulfils the programmes set by the previous two 'instances'. The psyche, in turn, is the unity of biological and social, consciousness and unconsciousness, intellectual and emotional, rational and irrational. Digital learning takes from this very poorly known incredible wealth only its intellectual component, which indirectly influences some other components of this unity. Digitalisation shapes individual learning environments, which

can include Internet platforms that allow the learner to individually manage learning content and personally create a kind of virtual desk. Digitalisation in education makes it possible to enrich real-life learning situations with digital data. For example, students can develop the skills of determining the place of origin or content of any thing, document, just by photographing its QR code. The formats of learning by means of digital games, which are beginning to be used in professional education, have a positive significance for the formation of significant qualities of the personality of a modern professional. Game simulations allow to reproduce real life situations at the training sessions according to the profile of training. Of course, digital technologies introduced in the educational process allow to develop skills of effective information search and processing, new forms of 'remote' communication, visualisation of things and processes being studied or researched. The realities of the modern educational process are such that the main feature of education is its globality due to the integration processes taking place in the world and the interaction of states in different areas of society. Thus, education is gradually moving from national priorities of developed countries to global priorities. The introduction of technology in various spheres of society is always accompanied by changes, as the new and the old (traditional) collide. Thus, innovation should be seen as a process of 'creative destruction' and creation at the same time. In this regard, technological advances and developments inevitably entail various kinds of conflicts and problems. In recent years, the digitalisation of education has become a key objective for many countries around the world. The use of digital technologies allows to increase access to educational resources, make the learning process more interactive and adaptive [1]. In the Kyrgyz Republic, the process of digitalisation has started relatively recently, but certain successes have already been achieved, such as the introduction of online platforms and distance learning [2]. However, for a full-fledged transition to digital education, it is necessary to take into account the world experience and adapt it to national peculiarities.

Russia and Singapore – countries with different approaches to digitalisation of education – were chosen for comparison. Russia emphasises the creation of a unified educational platform and ensuring equal access to digital resources in all regions of the country [3]. Singapore, on the contrary, focuses on personalised learning and

integration of artificial intelligence into educational processes [4]

Comparative analysis of the digitalisation of education

1. Kyrgyz Republic. The main efforts are focused on building infrastructure and training teachers. However, insufficient funding and the digital divide between urban and rural schools remain key challenges [5]. 2. Russia is actively developing national projects in the field of digital education. Much attention is paid to cybersecurity and the creation of digital educational platforms such as My School and Russian Electronic School [6]. 3. Singapore. Singapore is considered a world leader in the digitalisation of education. The use of artificial intelligence and data analysis technologies makes it possible to create individual educational trajectories for each student [7]. The state actively invests in innovation and development of digital skills among schoolchildren. Despite significant successes, the process of digitalisation of education faces a number of complex challenges:

- Digital Inequality – There is a gap in access to digital technologies between urban and rural regions. Schools in remote areas often lack the necessary infrastructure and access to high-speed internet [1].
- Low digital literacy among educators – Many teachers do not have sufficient skills to use digital tools in the educational process, which reduces the effectiveness of learning [2].
- Cyber threats and data protection – The adoption of digital technologies requires increased security measures to protect students' personal data and prevent cyber-attacks [3].
- Financial constraints – With limited budgets, many schools are unable to implement modern technology and update their technology base [4].

Technological innovations can lower the threshold of receptivity and sensitivity to another person and, as a consequence, form the spiritual emptiness of people. Modern learners often do not show signs of socially approved behaviour and do not strive for it. They develop social egoism – the absolutisation of the personal 'I', the desire to stand out, attract attention and make an impression. Science is creating ever new means of satisfying people's needs and making their lives as comfortable as possible. Under such conditions, education becomes more and more disadvantaged and is replaced by scientific and technological progress as a value in itself. At the same time, this progress cannot replace the process of education. Digitalisation provokes the development of such

negative processes in education. Perspectives on the digitalisation of education. Despite the challenges, digitalisation offers many opportunities to improve the quality of education:

- Accessibility of education for all – Online courses and distance platforms allow education even in remote areas [5].

- Individualisation of learning – Digital technologies allow educational programmes to be tailored to the needs of each student, making the process more efficient [6].

- Use of Artificial Intelligence (AI) – AI systems can assist learners in real time, suggest supplementary materials and analyse learning progress [7].

- International co-operation and experience sharing – Kyrgyzstan can benefit from the successful experiences of other countries such as Russia and Singapore to accelerate the adoption of digital technologies [8].

Conclusion

Digitalisation of education is not just a trend, but a necessity dictated by time. The success of this process in the Kyrgyz Republic depends on a comprehensive approach to problem solving and adaptation of global experience to local conditions. Thus, our study has made an attempt to objectively analyse the digitalisation of education, and allowed us to identify a number of problems and prospects for the development of digitalisation in the domestic education system. Among the arguments 'for' the digital revolution we will highlight the cardinal change in the labour market, the emergence of new competencies, improved cooperation, increased responsibility of citizens, their ability to make independent decisions; transformation of educational processes, increased role of the student in information search and problem solving, development of communicative abilities and creative potential; economic efficiency, the absence of time and geographical boundaries, the possibility of individualisation, optimisation of the teacher's work. However, on closer examination, these arguments can be interpreted less unambiguously. The risks of digitalisation for society lie in the dehumanisation of educational, and subsequently all other social relations, the possible deepening of the crisis of people's intellectual culture and their ability to create, the growth of pragmatism and individualism based on the values of personal comfort and selfish consumption. The immediate prospects for the development of digitalisation in the national education system include three defining directions: firstly, equipping educational

institutions with quality software, Secondly, it is the introduction of information (distance) technologies, involving mediated interaction between students and teachers; and thirdly, online learning (e-learning), which allows for the organisation of educational activities and online interaction between students and teachers. Undoubtedly, the development of digitalisation will change the requirements for learners and trainees and stimulate the formation of new organisational educational structures. The deployment of digital educational formats also implies complex changes in the architecture of education and inevitable changes in the usual forms and methods of education. From all this we can conclude that modernisation of domestic higher education is inevitable, it is in step with the times, but it is necessary to take into account the risks of innovation and not to abandon the traditional educational technologies that have proven their effectiveness. Comparative analysis has shown that each of the countries considered has its own unique approach to digitalisation of education. The Kyrgyz Republic is at an early stage of this process, and the experience of Russia and Singapore can be useful in formulating a national development strategy. For the successful implementation of digital technologies in Kyrgyzstan, it is necessary to address the issues of infrastructure, training and financing [7].

If properly implemented, digitalisation of education can increase accessibility and quality of education, prepare students for the challenges of the modern world and reduce the digital divide. Special attention should be paid to teacher training and the development of local digital platforms adapted to the needs of Kyrgyz schools.

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