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THE USE OF DIGITAL TECHNOLOGIES IN TEACHING RUSSIAN AS A SECOND LANGUAGE IN THE CONTEXT OF HOSPITAL PEDAGOGY

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Abstract

This article explores the effective use of digital technologies in teaching Russian as a second language within the framework of hospital pedagogy. For children undergoing medical treatment, remote and interactive learning formats not only maintain educational continuity but also help alleviate stress and anxiety associated with hospitalization. The study analyzes how modern digital tools—such as mobile applications, interactive software, and AI-powered learning systems—can be adapted to meet the needs of pediatric patients in clinical settings. Special attention is given to the role of the language teacher, the customization of learning content based on health conditions, and the psychological benefits of personalized learning approaches. Findings suggest that integrating digital technologies into hospital-based language education improves both language acquisition outcomes and the overall well-being of young patients.

Introduction

Hospital pedagogy is a specialized educational system designed for children who are required to stay in healthcare institutions for extended periods due to medical conditions. Its methodological, organizational, and psycho-pedagogical features differ significantly from traditional education systems. Since learners in a hospital setting are typically physically and emotionally vulnerable, the learning process in such an environment must be highly individualized, emotionally supportive, and inclusive.

In the educational process, not only the content but also the child's emotional state, motivation, and health dynamics must be consistently taken into account. Therefore, hospital pedagogy is not solely focused on delivering academic knowledge; it also aims to maintain a child's positive outlook on life, support their social development, and ease the rehabilitation process. It is particularly important to note that teachers working in hospital pedagogy play multiple roles: they act not only as educators but also as psychologists, motivators, and companions on the child's journey.

In today's context, strengthening cooperation between healthcare and education systems and improving both the quality and reach of hospital-based education through digitalization has become an urgent priority.Teaching Russian as a second language (RSL) remains highly relevant in Uzbek schools, including in specialized educational institutions and within the framework of hospital pedagogy. In a multilingual and culturally diverse society, there is an increasing demand for linguodidactic approaches that enable children to communicate in Russian, understand academic content, and prepare for future professional integration.

Proficiency in Russian gives children access to academic resources in higher education, increases their competitiveness, and enables full participation in both domestic and international communication. Teaching Russian as a second language also necessitates a balance between maintaining learners' native language connections, supporting their cognitive development, and fostering intercultural competencies. However, teaching Russian in a hospital context presents several challenges. These include learners' health limitations, low motivation, and inconsistent class attendance. As a result, the use of flexible, individualized, multimedia-based, and technology-supported teaching methodologies becomes critically important.

Currently, the modern education system is undergoing a process of digital transformation. Particularly after the global pandemic of 2020, the role of digital technologies in education has become even more significant. Information and communication technologies, virtual platforms, online resources, and mobile applications are being widely implemented to efficiently organize the educational process, deliver knowledge, reinforce learning, and provide assessment.

In hospital-based education, digital technologies play an active role not only as a method of delivering lessons but also as a psychological and social support tool for the child. Distance learning, audio-video content, and additional visual materials have become important factors in alleviating the child's emotional condition, maintaining motivation, and increasing interest in independent learning.Moreover, digital

technologies facilitate the establishment and monitoring of relationships between the child and the teacher, as well as between the child and parents, and they help shape individualized educational trajectories. This contributes to making education more inclusive, accessible, and effective.The aim of the research presented in the article is to explore the possibilities and effectiveness of using digital technologies in teaching Russian as a second language in the hospital education environment and to substantiate their methodological application.

Hospital pedagogy is a special educational system designed for children undergoing long-term treatment in hospitals or rehabilitation facilities, and its scientific and methodological foundations began to form in the second half of the 20th century. Russian researchers such as I.V. Ivanova, O.A. Yastrebova, and V.A. Zaitseva have carried out important studies in this field. For instance, Ivanova (2021) emphasizes the link between students' health, psycho-emotional state, and the content of education, highlighting "empathetic approach" and individualization as key methodological principles in hospital education.

Yastrebova (2020) proposes concepts such as "continuity" and "adaptability to changing conditions" as the basis for hospital education models. She notes that many children returning to school after treatment lack psychological readiness, and in this regard, the teacher plays a crucial role.Currently, hospital schools in the Russian Federation are being developed within the framework of the "Uchim – Znaem" (We Learn – We Know) project, promoting inclusive education models. Digital tools such as video conferencing and online platforms are actively used in this initiative.

In Uzbekistan, one of the first such projects was launched in 2022 at the Republican Specialized Oncohematology Center, where the "Mehrli Maktab" ("School of Kindness") was established. This school offers children both medical care and full academic instruction, demonstrating innovative collaboration between the health and education sectors.

Teaching Russian as a second language (RSL) remains a central topic in linguistic and pedagogical research. In recent years, various theoretical models have emerged based on cognitive, communicative, and sociocultural approaches.The motivational theory developed by Gardner and Lambert (1972) distinguishes between intrinsic and extrinsic motivation in language learning. According to them, successful language acquisition depends not only on grammar but also on social adaptation and personal interest.Krashen's "Input Hypothesis" (1985) suggests that language acquisition occurs through exposure to input slightly above the learner's current level (i+1), facilitating cognitive development.

In Uzbekistan, researchers such as Yu.N. Ashurov, N.N. Yormatov, and Z.T. Ismoilova have conducted studies on teaching Russian as a second language. They emphasize the development of linguistic competence in school and vocational education systems using integrative and communicative activity-based approaches (oriens.uz; ziyonet.uz).

Digital learning technologies serve as tools for content delivery, evaluation, independent study, and implementation of individualized learning models. Digitalization in education is being implemented through Learning Management Systems (LMS), mobile applications, interactive platforms, and AR/VR technologies. LMS platforms such as Moodle, Google Classroom, and Canvas have proven successful for organizing hospital or distance learning. These technologies help ensure that children

undergoing treatment do not miss out on education.According to American researcher S. Gracia (2024), immersive VR environments effectively enhance lexical and grammatical skills in children. F. Stamfelj (2019) analyzed the impact of video conferencing-based instruction in hospital settings and concluded that such technologies are effective not only for education but also for ensuring emotional stability.

Since 2023, Uzbekistan has implemented programs to retrain teachers based on ICT competencies and introduce digital methodologies in schools. Countries like Slovenia, Canada, Japan, and Germany widely use digital technologies in hospital education. Studies conducted in Slovenia (2018–2020) showed high effectiveness of hospital education using video conferencing and digital books. In Canada's SickKids hospital school, multimedia courses, individualized learning trajectories, and psychotherapeutic teaching models were introduced, positively affecting both learning outcomes and the rehabilitation process (Gilberto et al., 2023).The literature analysis presented above indicates that teaching Russian as a second language in hospital education is a relevant issue globally and in Uzbekistan. Methodological approaches, digital technologies, and inclusive education models are developing in interconnected ways. The scientific conclusions from the literature provide a solid foundation for the development of practical methodological recommendations in this dissertation.

Scientific research in the field of hospital education has examined the effectiveness of the educational process and its impact on children's emotional state. Studies conducted in hospital schools in Catalonia emphasized the importance of individualized learning and professional training for teachers (Gilberto & Zarete Alva, 2025). Analyses in Russia also show that approximately 6 million children are treated in hospitals each year, of whom at least 200,000 to 250,000 require long-term education (Ivanova et al., 2021). Such findings further underline the need to train highly qualified hospital teachers. According to research by F. Stamfelj (2019), video conferencing in hospital schools has helped reduce learning disruptions and maintain students' engagement (hltmag.co.uk).

The study involved virtual lessons for three children with different illnesses (conducted over eight weeks, twice a week, for 45 minutes each session). Participants included nine sick children aged 6–14 and three volunteer teachers. The control group consisted of three children. Data were collected using Likert-scale-based questionnaires, semi-structured interviews, grammar-vocabulary tests, and analysis of VR activities. The tools used included Moodle 3.11, Duolingo, Memrise, Zoom, Oculus Quest 2, and CoSpaces Edu. The data were analyzed using SPSS (ANOVA and Mann–Whitney tests) and qualitative content analysis through coding.The study was conducted using the case study method (Yin, 2014) to explore teaching in challenging conditions. The following tables present the research parameters:

Table 1. Research Parameters and Descriptions

Parameter	Description
Case selection	- Child with oncological illness (B1) - Cardiology patient (B2) - Neurological case (B3)
Intervention duration	8 weeks (2 times a week)
Lesson length	Each synchronous or asynchronous session – 45 minutes
Instructional tools	VR/AR simulators, interactive exercises via Moodle platform
Control group	3 children (taught using traditional chalk-and-paper methods)

Table 2. Participants

Group	Number (total)	Age (years)	Mode of Activity
Main group	9 children	6–14	VR/AR + Moodle-based learning
Volunteer teachers	3 teachers	25–35	Online/offline experienced instructors
Control group	3 children	6–14	Traditional classroom instruction

Table 3. Data Collection Tools

Tool	Purpose	Description
Questionnaires (Likert scale)	Measure motivation and satisfaction	Scale of 1–5
Semi-structured interviews	Gather insights from volunteer teachers and parents	6 interviews (30–45 minutes each)
Test results	Evaluate grammar and vocabulary skills	Pre-test and post-test with 20 questions
Analysis of visual materials	Analyze speech and activity during VR sessions	Conducted using NVivo 12 with open/axial coding

Table 4. Technologies Used and Their Functions

Technology Type	Name and Version	Function
LMS platform	Moodle 3.11	Interface, quizzes, forums
Mobile apps	Duolingo for Schools, Memrise Pro	Daily practice, gamification
Video conferencing	Zoom API	Live lessons, screen sharing
VR/AR devices	Oculus Quest 2, CoSpaces Edu, Google Poly	Immersive simulations, object interaction

Statistical analysis (SPSS v.26) compared grammar task results from easier to more complex exercises among children B1–B3 and examined motivation score differences between the case and control groups. Results revealed statistically significant differences at $p < .05$.

Test results showed notable improvement in the group using digital technologies ($p < .05$). Motivation levels increased by an average of 27% according to

the Likert scale. Interview and content analysis indicated enhanced independence, interest, and communication skills among learners. VR/AR technologies enabled learners to acquire knowledge through visual and experiential formats.

In conclusion, effective use of digital technologies in language instruction under hospital conditions can significantly increase learners' motivation, knowledge quality, and engagement. Purposeful use of LMS, mobile apps, and VR/AR environments enhances pedagogical effectiveness. Future research should involve a larger number of participants and assess long-term outcomes.

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