Как да превърнем ИКТ в образователен ресурс по български език и литература: между традицията и дигиталната трансформация

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Turning ICT into an Educational Resource in Bulgarian Language and Literature Teaching: Between Tradition and Digital Transformation

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Abstract:

This paper explores how information and communication technologies (ICT) can be transformed into effective educational resources in Bulgarian language and literature teaching, positioned between pedagogical tradition and digital transformation. The study analyzes the integration of digital platforms, interactive tools, and artificial intelligence in both synchronous and asynchronous learning environments. It examines the didactic potential of multimedia content, digital language resources, and gamified applications for enhancing student engagement, reading comprehension, and text production skills. Particular attention is paid to the role of AI-assisted tools in supporting personalized learning, formative assessment, and the development of writing competences, alongside challenges related to ethical use, reliability, and the specific limitations of Bulgarian as a lower-resourced language. The paper also outlines key constraints, including uneven access to technological infrastructure and the need for sustained teacher training. It argues that the effective use of ICT requires a pedagogically grounded approach that integrates digital tools without displacing core interpretative and analytical practices central to humanities education.

Keywords: Information and Communication Technologies, Digital Transformation, Bulgarian Language and Literature, Artificial Intelligence, Educational Resources.

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INTRODUCTION

The development of new information and communication technologies (ICT) and the trend toward globalization are among the key factors driving the paradigm shift in modern education. In the era of digital transformation, education is no longer confined to the physical walls of the classroom or reliant solely on printed textbooks. Instead, the integration of ICT creates borderless, continuous learning environments, expanding the possibilities for pedagogical interaction regardless of time, location, or the number of participants. Currently, a large portion of educational institutions is equipped with computers, tablets, projectors, and interactive whiteboards. As a result, technology serves as a vital ally to the humanities; it offers powerful new tools to rethink and elevate pedagogical practices rather than replacing them.

Furthermore, the development of digital competencies is partially interwoven into various subjects across Bulgarian secondary schools, highlighting the need for identifying effective practices within formal education [1]. The primary objective of this study is to explore the opportunities and current trends regarding the utilization of ICT in high school Bulgarian language and literature education. The research focuses on three key areas: the integration of digital platforms and artificial intelligence (AI), their impact on student engagement and reading comprehension, and the specific challenges of addressing ethical concerns and the realities of the Bulgarian language.

Methodologically, the study employs a qualitative analytical approach based on a critical review of contemporary scientific literature, comparative analysis of national

educational policies, and interpretation of recent statistical data concerning digital literacy, educational inequalities, and technology adoption in Bulgaria.

ESTABLISHING THE DIGITAL INFRASTRUCTURE AND RESOURCES

The Digital Infrastructure Shift

The integration of ICT into the Bulgarian educational system was significantly accelerated by the COVID-19 pandemic, which forced a rapid transition to distance learning. This critical period necessitated the widespread adoption of enterprise software solutions to maintain educational continuity. Supported financially by the Ministry of Education and Science, schools implemented comprehensive platforms such as Google Workspace for Education and Microsoft 365. These platforms provided the foundational architecture for both synchronous and asynchronous communication, virtual whiteboards, and digital material sharing. Concurrently, administrative and logistical processes were digitized through the implementation of electronic school management systems, notably Shkolo and Admin+, which are now standard across most institutions.

Specialized Digital Resources and Platforms

Beyond general infrastructure, Bulgarian language and literature education relies heavily on specialized digital resources that facilitate interactive learning and self-study. To better understand the landscape of these digital tools and their didactic potential, it is necessary to categorize them based on their pedagogical function, the specific competencies they develop, and their interaction modalities, as outlined in Table 1.

Table 1. *Didactic categorization of digital resources in Bulgarian Language and Literature education.*

Resource Category	Platform Examples	Targeted Competency	Interaction Modality
National Digital Repositories	Digital Backpack, National Electronic Library	Independent research, centralized resource accessibility	Asynchronous content consumption
Gamified Self-Study Platforms	Ucha.se, Knigovishte, Ocenka-BEL	Reading comprehension, literary analysis, text production	Interactive gamification, multimedia learning
Digital Linguistic References	BERON, Interactive Dialect Map	Orthography, phonetics, regional lexicology	Self-directed inquiry, auditory analysis
Formative Assessment Systems	Kahoot!, Quizizz, SmarTest	Knowledge retention, real-time evaluation	Synchronous and asynchronous testing

As demonstrated in Table 1, national repositories provide open access to a vast array of teacher-created materials, serving as the baseline for digital study [2]. Moving up the scale of interactivity, platforms like Ucha.se and Knigovishte transform traditional reading assignments into engaging activities that target foundational comprehension and boost student motivation [3].

Digital linguistic references also play a pivotal role in modernizing language acquisition. The recent launch of BERON provides students with authoritative audio pronunciation guides and grammar rules [4]. Additionally, tools like the Interactive Dialect Map offer auditory archives of regional speech, enriching the contextual understanding of linguistic diversity. Finally, to evaluate student progress efficiently, educators increasingly employ interactive assessment systems. These systems enable automated grading and provide immediate feedback in a low-pressure environment, which is crucial for formative self-assessment [5].

THE ROLE OF ARTIFICIAL INTELLIGENCE IN EDUCATION

Pedagogical Potential and Benefits

Artificial intelligence possesses substantial potential to transform humanities education by processing information rapidly and facilitating highly personalized learning experiences. Recent research from 2025 highlights how AI optimizes the educational process through automated formative assessment, adaptive learning pathways, and the integration of intelligent virtual assistants that provide continuous support [6]. For educators, AI serves as an efficient assistant that streamlines lesson planning, significantly reduces administrative workloads, and aids in the differentiation of instruction to meet individual student needs.

For students, generative AI tools offer immediate pedagogical support. A 2025 empirical study conducted among students at Sofia University reveals that learners predominantly use generative AI to explain complex concepts, brainstorm ideas, and refine phrasing, utilizing the technology as an active study aid rather than a passive replacement for their own work [7]. In the specific context of literature and writing, AI provides valuable scaffolding by assisting students in structuring arguments, outlining texts and simulating low-pressure exam scenarios, allowing learners to practice without the anxiety of formal human evaluation.

Ethical Considerations and Language-Specific Limitations

Despite its operational advantages, the integration of AI in Bulgarian language education presents unique technological and ethical challenges. Primarily, Large Language Models are trained on significantly smaller datasets in Bulgarian compared to higher-resourced languages. This data discrepancy frequently results in “hallucinations” – the generation of mathematically plausible but factually incorrect statements – and unnatural phrasing that deviates from standard Bulgarian linguistic norms.

Furthermore, the implementation of AI raises critical concerns regarding academic integrity. It is imperative that AI is not utilized to generate complete essays or assignments. Current research indicates that students themselves show a critical awareness of risks related to information accuracy and ethical use, underscoring the need for structured AI literacy frameworks and readiness metrics [8]. Aligning with the official guidelines published by the Bulgarian Ministry of Education and Science, AI must function exclusively as a supportive educational assistant and never as a replacement for human effort, direct pedagogical interaction, and critical thinking [9].

CHALLENGES IN DIGITAL INTEGRATION

Infrastructure and Educator Fatigue

The successful integration of ICT into the educational process is highly dependent on robust technical infrastructure and continuous technical support. According to 2025 data from the National Statistical Institute, while 92.8% of Bulgarian households now have internet access, a significant digital skills gap remains, as only 38.3% of individuals possess basic or above basic digital competencies [10]. This structural disparity highlights a pressing need for ongoing, targeted methodological training to ensure educators and students alike remain technologically proficient.

In addition to infrastructural deficits, language and literature teachers frequently experience tool fatigue. The sheer volume and variety of available educational platforms require educators to constantly evaluate and select the most appropriate digital tools to

align with the curriculum, specific lesson objectives, and student interests, significantly increasing their preparatory workload [11]. This fatigue is exacerbated by demographic challenges within the teaching workforce; recent data shows that 31.4% of schoolteachers in Bulgaria are at least 55 years old. Additionally, attracting and retaining quality teachers remains a particular challenge for small schools outside urban centers [12], placing an even greater burden on existing educational staff.

The Paradox of Reading Comprehension and Technological Skepticism

A critical concern in the digital transformation of humanities education is the apparent paradox between increased technological adoption and declining literacy outcomes. Despite the broader application of ICT and digital resources, recent data indicates a deterioration in foundational reading skills. The 2025 Education and Training Monitor for Bulgaria highlights that 52.9% of 15-year-old students demonstrated poor reading comprehension results in the latest PISA evaluation. Furthermore, socio-economic factors heavily influence these outcomes, with only 2.5% of students from disadvantaged backgrounds achieving good results in at least one tested domain [12]. These findings indicate that technological engagement alone is insufficient to improve functional literacy unless digital practices are systematically integrated with strong pedagogical strategies, interpretative reading methodologies and critical thinking exercises.

Finally, the rapid introduction of AI has generated considerable skepticism within the educational community. Although generative AI usage grew to 22.5% of the Bulgarian population in 2025 [10], concerns regarding the reliability of AI-generated content and its impact on independent student thinking persist. Overcoming this hesitancy requires institutional support and the implementation of validated tools to measure and improve AI readiness among both students and teaching staff [8].

CONCLUSION

The integration of ICT in Bulgarian language and literature education should be understood not as a replacement of traditional pedagogical paradigms, but as their methodological expansion within the realities of the digital age. When digital tools and practical, technology-driven concepts are thoughtfully incorporated into the curriculum, student motivation and engagement increase significantly. Furthermore, the introduction of ICT-based innovations in the education system refines the learning process and increases its overall efficiency and effectiveness. With the strategic application of digital educational technologies, students absorb and retain material better while simultaneously developing crucial practical, analytical, and presentation skills [13].

As the demands of future professions increasingly require a solid scientific foundation and deep critical thinking, it is vital that humanities education adapts to these modern realities. The effective application of ICT bridges the gap between established pedagogical tradition and ongoing digital transformation, ultimately equipping the new generation with the essential modern competencies required for their academic and professional futures.

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