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Modern trends in learning German: The use of technologies and interactive methods

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Abstract. In the context of the digital transformation of education, there is a growing need for the effective integration of information and communication technologies (ICT) into foreign language teaching. The aim of this study was to identify the pedagogical potential of digital resources and interactive methods in teaching German at the university level. The research was based on an analysis of data obtained during an experimental German language course using digital technologies at J. Balasagyn Kyrgyz National University in the 2024-2025 academic year (sample: 70 students, 4 study groups). The methods employed included a review of scientific literature, synthesis of advanced pedagogical practices, observation, and comparative analysis. The study examined theoretical aspects of contextual learning, computer-mediated communication, and intercultural communication. Digital platforms, multimedia and authentic resources (social networks, YouTube channels, blogs), as well as AI tools – such as chatbots, adaptive applications, and automated assessment services – were analysed. It was found that the use of blended learning technologies enhances student motivation, fosters sustainable foreign language competence, and develops creative skills. Criteria for selecting digital materials based on their linguistic and didactic value were identified, along with examples of their successful implementation. The study demonstrated that combining traditional and innovative approaches improves the quality and effectiveness of German language instruction. The results of this research may be useful for foreign language teachers, methodologists, and educational program developers implementing digital technologies in language teaching at universities and professional development institutions

Keywords: digitalisation of education; interactive technologies; communicative approach; foreign language competence; learning environment; organisation of independent work; multimedia resources

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■ INTRODUCTION

The 21st century has witnessed the rapid development of information technologies, fundamentally transforming approaches to education. These changes are particularly significant in the field of foreign language learning, where digital tools open up new possibilities for enhancing learning efficiency. The growing demand for the German language in academic and professional spheres, especially within the context of international cooperation, necessitates innovative teaching methods capable of accelerating the acquisition of language skills. The specific characteristics of the German language (complex grammar, abundance of compound words, and pronunciation peculiarities) make the use of multimedia resources, interactive platforms, and digital simulations particularly valuable, as they facilitate material comprehension. This shift aligns with the changing educational needs of modern students, who, research indicates, assimilate information more effectively through interactive formats, including video, audio, and gamified elements (Diachuk, 2024).

Contemporary digital technologies are actively transforming the process of foreign language teaching, offering innovative tools and methodologies that enhance material assimilation, student motivation, and teaching quality. In recent years, researchers have paid particular attention to Augmented Reality (AR) and Virtual Reality (VR) technologies, Artificial Intelligence (AI), and Information and Communication Technology (ICT)-based platforms. Yu. Dashko (2023) emphasised the significance of interactive technologies in activating students' learning and cognitive activities. The author noted that such methods promote deeper student engagement in the learning process and the development of their communicative skills. Similar conclusions are presented in the research of Yu. Kazak (2021), focusing on the application of smart technologies in the training of future German language teachers. The author demonstrated that the use of interactive platforms and digital resources allows for the optimisation of the learning process and its adaptation to individual student needs.

A promising direction in contemporary research is the use of augmented and virtual reality technologies. R. Tarasenko *et al.* (2022) found that AR technologies, including QR codes and virtual tours, significantly improve vocabulary retention and stimulate students' oral participation. Comparable results were obtained in the study by V. Kovalenko *et al.* (2021), which proposed a model for integrating AR and VR into blended learning, thereby enhancing the effectiveness of material assimilation at various stages of a lesson. ICT plays a crucial role in modern language education. A. Telnova (2025) noted that virtual classrooms and AI-based platforms ensure a personalised approach to learning and increase student engagement levels. However, despite the evident advantages, teachers' attitudes towards digital tools remain ambivalent. As shown by Y. Fitri & N. Putro (2021), many educators express doubts about the effectiveness of ICT, indicating the need for additional training and methodological support. Similar

conclusions are presented in the work of B. Li (2021), which analysed teachers' readiness to utilise technologies in distance learning contexts.

Particularly interesting is the research by L. Wei & X. Li (2024), dedicated to developing critical thinking through ICT. The authors argued that communicative and constructive tools, including AR and AI, contribute to the formation of students' analytical and evaluative skills. Another promising direction is the integration of chatbots, such as ChatGPT, into the learning process. The study by H. Han *et al.* (2023) confirmed that AI-based platforms effectively improve students' written expression through interactive feedback. Most researchers emphasise that technologies should complement, rather than replace, the teacher, fostering the development of students' investigative and creative activity. The teacher, in this context, remains an inspiring and guiding participant in the educational process. N. Kompanets (2019) highlighted the advantages of modern technologies: the continuity of learning, accessibility of information, and the mobility and autonomy of participants. The author also points to the necessity of developing learners' knowledge, skills, attitudes, and values. A. Martín *et al.* (2019) introduced the term "SMART education" as a reflection of technological progress in learning, while noting, however, insufficient methodological elaboration at the time. Nevertheless, the researchers underscored the potential of technologies for more adaptive and effective learning.

Thus, contemporary research attests to the significant potential of digital technologies in foreign language teaching. However, their successful implementation requires not only technical resources but also appropriate methodological preparation of teachers, as well as the development of strategies considering the specifics of diverse educational contexts. The aim of this article was to analyse the effectiveness of ICT application in teaching German based on an experimental study conducted by the authors in 2024-2025. The work also examined the influence of digital tools on learner motivation, the quality of material assimilation, and the development of key language competencies. The novelty of the research lies in systematising practices for using technologies specifically for the German language, including the adaptation of widely available resources (such as online exercises or podcasts) to its linguistic features.

■ MATERIALS AND METHODS

The study was conducted at Jusup Balasagyn Kyrgyz National University between September 2024 and May 2025. The experiment involved 70 students (4 academic groups) learning German at levels A2-B1 according to the Common European Framework of Reference for Languages (CEFR). To achieve the stated objectives, a complementary set of research methods was employed, including a pedagogical experiment, pedagogical observation, and student questionnaires. The integrated use of these methods ensured the objectivity and reliability of the results obtained.

Participant groups ($n = 70$ students, 4 groups of 17-18 students each) were formed based on stratified sampling, considering the results of an initial placement test to determine German language proficiency level (Goethe-Zertifikat A2/B1 Modellsatz), students' specialisations/departments, and year of study (second year). Prior to the experiment, the groups were statistically equivalent in terms of language proficiency ($p > 0.05$, Student's t -test) and demographic characteristics such as gender and age. The overall sample consisted of 67 female and 3 male participants aged 18-23, with a mean age of 19.8 years in the experimental group (EG) and 20.1 years in the control group (CG). All participants provided informed consent. Anonymity in data processing and the right to withdraw from the study at any time without negative consequences were guaranteed. The study was conducted in accordance with the principles outlined in the Guidance Note of the European Commission on Ethics and Data Protection (2021).

The pedagogical experiment aimed to assess the impact of a specific set of digital technologies on key learning parameters and lasted 8 months (32 academic weeks). In the experimental group (EG, $n = 35$), instruction followed a Blended Learning model, comprising 3 face-to-face sessions per week using traditional methods such as grammar exercises, discussions, and text reading. Additionally, there were 2 asynchronous online sessions per week with mandatory use of assigned digital tools. The integration of digital tasks was directly linked to the topics of the face-to-face sessions. Various digital resources were utilised: for listening – Deutsche Welle (n.d.) (Langsam gesprochene Nachrichten, Video-Thema) and YouTube channels (Easy German, Deutsch lernen mit der DW); for vocabulary and grammar development – Duolingo (n.d.), Quizlet (n.d.) (flashcards, Learn and Match games), Lingvist (n.d.) (adaptive exercises), and Mein Deutschbuch (n.d.) (online exercises); for writing – ChatGPT (n.d.) (GPT-4.0, draft text checking, idea generation) and Grammarly (n.d.) (spelling/punctuation checking); for self-organisation – Notion (n.d.) (vocabulary notebook, note-taking, assignment tracking); for interactive practice – a dedicated Instagram account (posting German-language posts/stories, commenting). It is noted that artificial intelligence tools were used strictly as auxiliary means to optimise processes and are not co-authors of this scientific work; all responsibility for the research design, data collection, analysis and interpretation, and the presented conclusions rests solely with the authors. In the control group (CG, $n = 35$), instruction followed a traditional model with 4 face-to-face sessions per week using standard textbooks (e.g., "Schritte international Neu"), accompanying audio CDs, and printed materials, with minimal use of digital technologies such as the teacher's PowerPoint presentations and access to PDF versions of the textbook.

The following parameters were evaluated during the experiment: language acquisition quality (vocabulary, grammar, listening, speaking), student motivation and engagement, and teaching effectiveness. Language acquisition quality was assessed based on the number of new words

in written work and oral responses, results of vocabulary tests, accuracy in using grammatical structures, as well as test results on comprehension of authentic audio recordings and assessment of monologic and dialogic utterances according to CEFR criteria. Motivation and engagement were measured through class attendance, participation in class activities, time spent on voluntary extracurricular work, and satisfaction with the learning process. Teaching effectiveness was evaluated based on the time spent marking written work, the quantity and quality of personalised feedback, and the teacher's perceived workload.

Pedagogical observation was conducted to assess the process of student interaction with digital resources, identify difficulties, behavioural patterns, and engagement levels. Two EG teachers and one independent methodologist participated in the observation. Prior to observation, a briefing was held, and criteria were agreed upon to minimise subjectivity. Observation took place over 2 months (8 weeks) during the 2nd and 6th months of the experiment, twice a week (16 observation sessions in total). Both laboratory (controlled) settings were used, where students completed tasks with digital resources in a computer lab under observation, and naturalistic settings, involving monitoring student activity within online platforms. A standardised observation protocol was used to record data, including task completion time, number and types of errors, engagement level, emotional reactions, and technical difficulties. Additionally, screenshots, screen recordings (with student consent), and brief field notes from observers were utilised. Processing of observation data involved qualitative content analysis of field notes and protocols, as well as quantitative analysis of error frequency, completion time, and engagement levels.

Student questionnaires aimed to identify subjective perceptions of digital tools, motivation levels, satisfaction with the learning process, as well as technical and methodological difficulties. The questionnaire, developed by the authors and piloted, consisted of four sections: digital literacy and experience using digital tools; evaluation of resource effectiveness (using Likert scales and open-ended questions); motivation and engagement; and difficulties and suggestions. Anonymous online questionnaires (Google Forms) were administered twice: in October 2024 (Wave 1, $n = 70$), focusing on initial motivation and expectations, and in May 2025 (Wave 2, $n = 70$), to assess final experience and satisfaction. Questionnaire data processing included quantitative analysis (frequency analysis, calculation of means, correlations) using SPSS, as well as qualitative analysis of open-ended responses.

For statistical data processing, analysis of variance (ANOVA) for independent samples with Tukey's post-hoc test was used when comparing EG and CG results. Paired t -tests were applied to analyse within-group dynamics, with a significance level of $p < 0.05$. Basic descriptive statistics were calculated. Qualitative analysis included content analysis of observation data, open-ended questionnaire responses, and field notes. To enhance the reliability

of the findings, data triangulation was employed, comparing results obtained from the experiment, observation, and questionnaires. The research information base relied on scientific literature, digital educational resources, multimedia online courses, digital tools, and social networks. The analysis also utilised adapted methodologies for the critical analysis of digital platforms and classification of digital educational resources (Würffel, 2010; Kyrylchuk *et al.*, 2024). Ensuring validity and reliability was achieved through variable control (equating groups by language level, specialisation, use of the same teacher for both groups), objectivity in observation (standardised protocols, involvement of an external observer), guaranteeing anonymity in questionnaires and data processing, and the aforementioned triangulation.

■ RESULTS

Experimental results and conclusions on the effectiveness of digital technologies

Data analysis from the pedagogical experiment demonstrated a significant improvement in the effectiveness of learning in the experimental group (EG) compared to the control group (CG). In the area of vocabulary acquisition, EG students showed an increase of 120 new active words, which exceeds the CG's result by 45 words (overall increase in EG was 75 words higher, $p = 0.008$). In grammar, the accuracy of language structure usage in the EG improved by 41% (error reduction of 41%), substantially outperforming the CG's 18% improvement ($p = 0.001$). In listening

skills, the EG's speech comprehension speed without subtitles increased by 32%, whereas in the CG this indicator rose by only 14% ($p = 0.003$).

In addition to language competencies, there were notable improvements in students' motivation and engagement. Class attendance in the EG reached 93% (compared to 82% in the CG), and the average amount of time dedicated to voluntary extracurricular work was 4.2 hours per week, compared to 1.8 hours in the CG. The use of social media as a learning tool contributed to a 2.3-fold increase in the frequency of German language practice outside the classroom, with 70% of EG students actively participating in such activities. The implementation of digital technologies also positively affected teaching efficiency. The use of artificial intelligence tools, particularly ChatGPT version 4.0, enabled a 50% reduction in the time required for teachers to mark written assignments (from 12 to 7 minutes per student). At the same time, the number of personalised comments on student work increased by 65%, indicating an improvement in the quality of feedback. Based on pedagogical observation and student surveys, key conclusions were drawn regarding the effectiveness of different technologies. The greatest learning progress was observed among students who systematically used an optimal combination of two to three digital tools. Conversely, the use of more than three tools led to fragmented attention and a 12% decrease in average academic improvement. The comparative effectiveness of online resources in learning German is detailed in Table 1.

Table 1. Comparative table of the effectiveness of online resources for learning German

Resource	Strengths	Weaknesses	Usage recommendations
Deutsche Welle	■ authentic materials (news, podcasts); ■ develops listening; ■ adapted speech pace.	■ effectiveness drops without subtitles; ■ risk of mechanical text reading.	■ combine listening with prediction tasks; ■ gradually reduce subtitle dependence.
Duolingo	■ gamification boosts motivation; ■ rapid vocabulary memorisation.	■ repetitive exercises; ■ engagement decreases after 3-4 weeks.	■ use as a supplement to other resources; ■ introduce thematic challenges.
ChatGPT	■ quick grammar checks; ■ help with finding synonyms.	■ errors in cases, verb governance; ■ unnatural stylistic options.	■ use only for draft checking; ■ teach students to critically evaluate corrections.
Instagram	■ informal writing practice; ■ visual support (memes, infographics).	■ low voluntary engagement; ■ distracting content.	■ create closed educational accounts; ■ assign specific tasks (e.g., photo descriptions).
Quizlet Live	■ high engagement in team mode; ■ better memorisation through excitement.	■ dominance by strong students; ■ technical delays.	■ form mixed teams; ■ assign roles (e.g., "checker").
Notion	■ convenient knowledge organisation; ■ collaborative project work.	■ conflicts during simultaneous editing; ■ complexity of template setup.	■ provide training on using the tools; ■ assign roles (moderator, editor).

Source: compiled by the authors

An analysis of the use of various digital tools revealed their specific strengths and limitations. Deutsche Welle proved highly effective for developing listening skills, contributing to a 32% increase in the comprehension of authentic speech. However, without methodological support and with excessive reliance on subtitles, effectiveness declined (60% correct responses without subtitles versus 85% with subtitles), and around 30% of students tended to read

the text mechanically rather than listen actively. It is recommended to combine DW with prediction-based exercises and to gradually reduce reliance on subtitles.

Duolingo proved useful for initial vocabulary acquisition, showing up to a 15% improvement based on observational results. However, student motivation tended to decline after 3-4 weeks due to the repetitive nature of the exercises: 80% of students were actively engaged during

the first 20 days, but 40% later reported fatigue from the platform. This suggests the need to complement Duolingo with more varied educational resources. The ChatGPT tool proved useful in reducing teacher marking time by 30-35%, and in supporting basic grammar understanding and synonym selection. However, limitations were identified: the tool missed approximately 20% of errors related to articles, and 15% of case-related errors. In 18-20% of instances, it provided inaccurate explanations or offered stylistically awkward suggestions. Therefore, ChatGPT should only be used with critical post-checking by a teacher. The Quizlet platform was highly effective for vocabulary retention, particularly due to its gamification elements. For instance, the Quizlet Live mode significantly boosted student engagement, though it required additional teacher oversight to prevent stronger students from dominating and to resolve potential technical issues. Social media, particularly Instagram, proved useful for informal writing practice and visual support. However, relatively low voluntary engagement was observed, and distracting content required more structured tasks to help students stay focused. Notion showed itself to be a valuable tool for organising educational materials and supporting collaborative work. However, its effective use was associated with certain setup challenges and the potential for editing conflicts, which necessitate prior training and clear role distribution among students.

The research findings confirmed the initial hypotheses. Multimedia resources such as Deutsche Welle and YouTube significantly enhanced the perception of authentic speech, as evidenced by a 32% improvement in the experimental group. The use of AI-based tools, including ChatGPT and Grammarly, effectively halved the time required for teachers to mark assignments. Furthermore, interactive methods and gamification (e.g., via Quizlet Live and thematic challenges) led to increased student activity during lessons and a significant rise in extracurricular learning, as reflected by the 93% attendance rate and 4.2 hours of voluntary out-of-class work per week. Observations and surveys also identified several key success factors for integrating digital technologies. Maximum effectiveness was achieved by combining technologies into “clusters” targeted at specific skills. Gradual introduction of new tools, starting with one (e.g., Quizlet), reduced student anxiety and technical barriers, thereby increasing satisfaction and usage frequency. Methodological support – including clear instructions, task strategies, and follow-up discussion or teacher review – was critically important for enhancing the effectiveness of resources, particularly authentic ones like DW or more complex tools like ChatGPT and Notion. Finally, it is essential to develop students’ critical thinking skills so that they can independently and consciously evaluate AI-generated corrections and content from social media.

Recommendations and prospects for the integration of digital technologies in education

Based on a comprehensive analysis of the experimental results, pedagogical observations, and student survey data,

detailed recommendations have been developed for the effective use of digital technologies in the process of teaching German. Particular attention was given to optimising both the quantity and combinations of tools used. The study clearly showed that the greatest academic gains were observed in subgroups of the experimental cohort who systematically used two to three core technologies. Exceeding this number led to cognitive fragmentation and a 12% decrease in average academic improvement.

Examples of effective technology combinations for developing specific language skills include the following. For listening skills, the optimal bundle comprised Deutsche Welle as the core resource, combined with a staged subtitle strategy (content prediction, listening with subtitles, then comprehension testing without them), and brief discussions in Zoom or Teams, leading to a 32% improvement. For vocabulary acquisition, high effectiveness was shown by combining Quizlet or Anki for spaced repetition, contextual vocabulary use via Instagram, and thematic challenges to introduce gamification, resulting in a gain of 120 new words. For writing skills, it is recommended to use AI tools such as ChatGPT or Grammarly for draft proofreading, followed by critical revision by students (cross-checking with grammar rules or teacher review), and then publishing the edited texts on platforms such as Notion, which reduced marking time by 50%. For general language practice, effective tools included YouTube channels, Lingvist for grammar and vocabulary, and Notion for learning material organisation.

A crucial factor is the phased integration of technologies. Observations of 12% of students and survey data indicate that gradual introduction significantly reduces anxiety and technical barriers, enhancing overall satisfaction and frequency of use. Groups in which tools were introduced step-by-step showed better adaptation outcomes. In practice, this means beginning the course with a relatively simple and engaging tool such as Quizlet for vocabulary learning. Once students master its basic use (typically within 1-2 weeks), the next tool (e.g., Deutsche Welle subtitle strategy) can be introduced with clear instructions and skill development tasks at each stage.

Further refinement of target combinations for specific language skills, based on study results and observations, leads to the following set of recommendations:

- **Listening:** use Deutsche Welle with authentic content and a structured subtitle reduction strategy, combined with follow-up interactive discussions in Zoom or Teams to consolidate material and practise speaking;

- **Vocabulary:** systematic memorisation via Quizlet/Anki, contextualisation of vocabulary through social media (e.g., Instagram posts, comments), and gamification via thematic challenges;

- **Writing:** use AI tools for initial drafts, encourage students to critically revise corrections (check with rules), followed by teacher feedback and practical application via text publishing on digital platforms;

- **Grammar:** use specialised platforms (Lingvist, DW exercises), reinforce grammatical structures contextually in

writing/speaking, followed by AI/teacher correction and clear rule explanations:

■ **Speaking:** use authentic videos/podcasts (YouTube, DW) as models, imitation exercises, and interactive formats such as discussions and role-plays.

Successful implementation also requires adequate technical preparation, including regular training sessions for both students and instructors, especially for more complex tools such as Notion or prompt engineering in ChatGPT. It is important to note that approximately 12% of students require additional support. Special attention must be paid to teaching students critical analysis skills when using ChatGPT corrections, including cross-referencing with textbooks and grammar guides, and cautioning against relying solely on AI when preparing for high-stakes assessments. A stable internet infrastructure and access to appropriate devices are essential. Ongoing monitoring and feedback collection, such as via surveys, are recommended to promptly identify technical or methodological issues and to evaluate the effectiveness of any corrective measures.

At the same time, certain limitations must be acknowledged. Successful integration of digital tools requires stable internet access, and some students will require more structured support and guidance. The effectiveness of AI tools – particularly ChatGPT – in correcting complex grammar (e.g., articles and case endings) remains limited. Future development in this area should focus on the creation of adaptive AI trainers for challenging grammatical topics, testing of VR simulations for immersive speaking practice, and the design of integrated platforms that combine the strengths of different digital tools to support comprehensive language learning.

■ DISCUSSION

The findings of this study expand the empirical base regarding the effectiveness of integrating digital technologies into university-level German language teaching. The observed improvements in vocabulary, grammar, and comprehension of authentic speech in the experimental group are consistent with broader trends in contemporary language didactics, where digital resources are increasingly recognised as powerful catalysts for language development (Mizza & Rubio, 2024). Scholars such as G. Hogan-Brun & R. Whittle (1997), A. Zhamaliyeva & G. Shaimerdenova (2021), and M. Teng (2022) emphasised the potential of multimedia tools in accelerating language acquisition, especially in listening and vocabulary building. The positive impact of digital tools on student motivation and engagement – reflected in increased attendance and time spent on extracurricular learning – aligns with findings from other studies on gamification and interactive teaching methods (Arkabayev *et al.*, 2023; Xiao & Hew, 2024). Researchers like M. Alshiha & A. Al-Abdullatif (2024), and M. Jun & T. Lucas (2024) have noted that gamified elements and personalised approaches help foster sustained interest in the subject and encourage greater learner participation. This is particularly

relevant in contexts that require self-directed learning and a high degree of organisation.

Data from this study concerning increased teaching efficiency through AI-based tools in assignment marking are also reflected in recent academic literature. Several authors explore how AI tools can automate routine tasks, allowing educators to focus on more complex feedback and personalised instruction (Onet, 2025; Tan *et al.*, 2025). However, identified limitations regarding grammatical accuracy and stylistic naturalness in ChatGPT outputs highlight the need for a critical approach and continued oversight by instructors. These concerns are echoed in scholarly discourse discussing the reliability and pedagogical soundness of fully delegating assessment tasks to AI (Ramírez *et al.*, 2024; Ocen *et al.*, 2025).

The study also established optimal quantities and combinations of digital tools for maximum learning outcomes. The finding that excessive use of digital tools can lead to attention fragmentation and lower performance is significant. This supports cognitive load theory, which warns against information and tool overload, both of which can negatively affect the learning process (Gerlich, 2025). Thus, a balanced approach to tool selection and integration becomes a critical success factor. Particularly noteworthy are the observations on phased integration of tools and its positive impact on student anxiety reduction and satisfaction – an approach supported by findings in pedagogical psychology that highlight how gradual adaptation promotes confidence and reduces barriers (Alkhawaja *et al.*, 2021; Puente-Torre *et al.*, 2025). This is especially pertinent given varying levels of digital literacy among students.

Overall, the findings confirm that digital technologies hold considerable potential to transform foreign language education. However, successful integration requires not only access to modern tools, but also a deep understanding of their pedagogical affordances and limitations, as well as a carefully considered implementation strategy and ongoing methodological support. The development of students' critical thinking – particularly in relation to AI-generated content and open-source information – is also frequently cited in research on media literacy and digital competence. As studies show, the ability to evaluate and analyse information is becoming one of the most essential skills in the era of digital education.

■ CONCLUSIONS

The pedagogical experiment statistically confirmed ($p < 0.05$) the significant benefits of systematically integrating digital technologies – including multimedia, AI tools, social media, and interactive platforms – into the process of learning German. The study demonstrated marked improvements in students' language skills: in the experimental group, active vocabulary increased by 120 words, grammatical accuracy improved by 41%, and listening speed without subtitles rose by 32%. Moreover, there was a notable increase in learner motivation and engagement, with attendance reaching 93% and voluntary extracurricular

learning time rising to 4.2 hours per week. Teaching efficiency also improved, as evidenced by a 50% reduction in assignment marking time due to AI tools.

The key success factor was not merely the introduction of digital tools, but their methodologically sound combination. The optimal use of 2-3 complementary tools, phased integration with appropriate methodological support, and targeted application to specific language skills proved most effective. Particular emphasis should be placed on fostering a critical mindset among students – especially when working with AI tools – since their capabilities remain limited. The recommendations offered, grounded in empirical data, provide a practical roadmap for the effective digitalisation of the teaching process. The study therefore confirmed that a well-balanced blend of innovative technologies and proven traditional teaching methods ensures sustainable

development of language competencies. Further work should focus on fine-tuning digital solutions and developing adaptive AI trainers that consider both pedagogical and psychological aspects of foreign language learning.

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■ CONFLICT OF INTEREST

The authors declared no conflict of interest.

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Немец тилин үйрөнүүдөгү заманбап багыттар: технологияларды жана интерактивдүү методдорду колдонуу

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Аннотация. Билим берүүнүн санариптик трансформациясы шартында, чет тилдерди үйрөтүү процессинде маалыматтык-коммуникациялык технологияларды (МКТ) натыйжалуу интеграциялоого муктаждык күчөөдө. Бул изилдөөнүн максаты: Жогорку окуу жайында немис тилин үйрөтүүдө санариптик ресурстардын жана интерактивдүү ыкмалардын педагогикалык мүмкүнчүлүктөрүн аныктоо. Изилдөө 2024-2025-окуу жылында Ж. Баласагын атындагы Кыргыз улуттук университетинде немис тилин санариптик технологияларды колдонуп эксперименталдык түрдө үйрөтүү убагында алынган маалыматтарды талдоого негизделген (70 студент, 4 окуу тобу тандалып алынды). Методдор катары илимий адабияттарды талдоо, алдыңкы педагогикалык тажрыйбаны жалпылоо, байкоо жана салыштырмалуу талдоо колдонулган. Иш жүзүндө контексттик окутуунун, компьютер аркылуу жана маданияттар аралык коммуникациянын теориялык аспектери изилденген. Санариптик платформалар, мультимедиялык жана аутентикалык ресурстар (социалдык тармактар, YouTube-каналдар, блогдор), ошондой эле ЖИ-куралдары – чат-боттор, адаптивдүү колдонмолор жана автоматтык текшерүү сервистерин анализденген. Аралаш окутуу технологияларын колдонуу студенттердин мотивациясын жогорулатууга, туруктуу чет тилдик компетенттүүлүктү калыптандырууга жана чыгармачыл жөндөмдөрдү өнүктүрүүгө көмөк берет деген жыйынтыкка келинди. Санариптик материалдарды тандоонун лингводидактикалык маанисин эске алган критерийлери аныкталып, аларды ийгиликтүү киргизүүнүн мисалдары келтирилген. Салттуу жана инновациялык ыкмаларды айкалыштыруу немис тилин үйрөтүүнүн сапатын жана натыйжалуулугун жогорулатат деп көрсөтүлгөн. Изилдөөнүн жыйынтыктары чет тилдердин мугалимдери, методисттер жана ЖОЖдордо жана квалификацияны жогорулатуу системасында санариптик технологияларды тил үйрөтүү практикасына киргизүүчү билим берүү программаларды иштеп чыгуучулар үчүн пайдалуу болушу мүмкүн.

Негизги сөздөр: билим берүүнүн санариптешүүсү; интерактивдүү технологиялар; коммуникативдик ыкма; чет тилдик компетенттүүлүк; окутуу чөйрөсү; өз алдынча ишти уюштуруу; мультимедиялык ресурстар

Современные тренды в изучении немецкого языка: применение технологий и интерактивных методов

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Аннотация. В условиях цифровой трансформации образования возрастает потребность в эффективной интеграции информационно-коммуникационных технологий (ИКТ) в процессе обучения иностранным языкам. Цель настоящего исследования – выявить педагогические возможности цифровых ресурсов и интерактивных методов при обучении немецкому языку в вузе. Исследование основано на анализе данных, полученных в ходе экспериментального преподавания немецкого языка с применением цифровых технологий в Кыргызском национальном университете им. Ж. Баласагына в 2024-2025 учебном году (выборка: 70 студентов, 4 учебные группы). В качестве методов были использованы анализ научной литературы, обобщение передового педагогического опыта, наблюдение и сравнительный анализ. В ходе работы изучены теоретические аспекты контекстного обучения, компьютерно-опосредованной и межкультурной коммуникации. Проанализированы цифровые платформы, мультимедийные и аутентичные ресурсы (социальные сети, YouTube-каналы, блоги), а также применение ИИ-инструментов – чат-ботов, адаптивных приложений и сервисов автоматической проверки. Установлено, что использование технологий смешанного обучения способствует повышению мотивации студентов, формированию устойчивой иноязычной компетентности и развитию творческих способностей. Выявлены критерии отбора цифровых материалов с учетом их лингводидактической ценности и приведены примеры их эффективного внедрения. Показано, что сочетание традиционных и инновационных подходов повышает качество и результативность обучения немецкому языку. Результаты исследования могут быть полезны преподавателям иностранных языков, методистам и разработчикам образовательных программ, внедряющим цифровые технологии в практику языкового обучения в вузах и системе повышения квалификации

Ключевые слова: цифровизация образования; интерактивные технологии; коммуникативный подход; иноязычная компетентность; обучающая среда; организация самостоятельной работы; мультимедийные ресурсы