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## **THE USE OF DIGITAL TECHNOLOGIES IN THE SYSTEM OF BLENDED LEARNING IN FOREIGN LANGUAGE EDUCATION**

### *Abstract*

The article explores how digital technologies function within blended models of foreign language education. It analyzes how technological tools influence students' motivation, autonomy, and communication skills by synthesizing empirical and conceptual works published between 2018 and 2025. The findings demonstrate that when digital tools such as learning management systems, mobile applications, and immersive environments are integrated into a coherent instructional framework, they foster learner engagement, self-regulation, and active participation. However, their success depends on teachers' digital competence, systematic formative assessment, and institutional infrastructure. Persistent barriers include unequal access to technology and limited training opportunities. Overall, the study concludes that well-structured blended approaches can create flexible, learner-centered, and pedagogically effective environments for language acquisition.

**Keywords:** *blended learning; digital technology; foreign language teaching; learner engagement; autonomy; mobile-assisted learning; virtual learning environments; self-regulated learning*

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## **ШЕТ ТІЛІН ОҚЫТУДА АРАЛАС ОҚЫТУ ЖҮЙЕСІНДЕ ЦИФРЛЫҚ ТЕХНОЛОГИЯЛАРДЫ ҚОЛДАНУ**

### *Аңдатпа*

Мақалада шет тілін оқытудағы аралас оқыту үлгілерінде цифрлық технологиялардың қызмет ету ерекшеліктері қарастырылады. 2018–2025 жылдар аралығында жарияланған эмпирикалық және тұжырымдамалық зерттеулерді талдау негізінде технологиялық құралдардың білім алушылардың мотивациясына, автономиясына және коммуникативтік дағдыларына әсері зерттеледі. Зерттеу нәтижелері оқу үдерісіне оқытуды басқару жүйелері, мобильді қосымшалар және иммерсивті білім беру орталары сияқты цифрлық құралдар біртұтас әдістемелік жүйе аясында енгізілген жағдайда, білім алушылардың оқу үдерісіне белсенді қатысуына, өзін-өзі реттеу дағдыларының дамуына және оқу белсенділігінің артуына ықпал ететінін көрсетеді. Алайда олардың тиімділігі мұғалімдердің цифрлық құзыреттілігіне, қалыптастырушы бағалаудың жүйелі түрде жүргізілуіне және институционалдық инфрақұрылымға тәуелді. Негізгі мәселелер ретінде технологияларға қолжетімділіктің теңсіздігі мен кәсіби даярлық мүмкіндіктерінің шектеулілігі атап өтіледі. Жалпы алғанда, дұрыс құрылымдалған аралас оқыту модельдері шет тілін меңгеру үшін

икемді, білім алушыға бағытталған және педагогикалық тұрғыдан тиімді білім беру ортасын қалыптастыра алады деген қорытынды жасалады.

**Кілт сөздер:** аралас оқыту; цифрлық технологиялар; шет тілін оқыту; білім алушылардың белсенділігі; автономия; мобильді оқыту; виртуалды оқу орталары; өзін-өзі реттеп оқу.

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## ИСПОЛЬЗОВАНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ В СИСТЕМЕ СМЕШАННОГО ОБУЧЕНИЯ В ИНОЯЗЫЧНОМ ОБРАЗОВАНИИ

### Аннотация

В статье рассматривается функционирование цифровых технологий в системе смешанного обучения иностранным языкам. Анализируется влияние технологических инструментов на мотивацию обучающихся, их автономию и коммуникативные навыки на основе синтеза эмпирических и концептуальных исследований, опубликованных в период с 2018 по 2025 годы. Результаты показывают, что при интеграции таких цифровых средств, как системы управления обучением, мобильные приложения и иммерсивные образовательные среды, в целостную методическую модель они способствуют повышению вовлеченности обучающихся, развитию саморегуляции и активного участия в учебном процессе. Однако успешность их применения зависит от уровня цифровой компетентности преподавателей, систематического формативного оценивания и институциональной инфраструктуры. К сохраняющимся проблемам относятся неравный доступ к технологиям и ограниченные возможности профессиональной подготовки. В целом в исследовании делается вывод, что грамотно организованные модели смешанного обучения способны создать гибкую, ориентированную на обучающегося и педагогически эффективную среду для овладения иностранным языком.

**Ключевые слова:** смешанное обучение; цифровые технологии; обучение иностранному языку; вовлеченность обучающихся; автономия; мобильное обучение; виртуальные образовательные среды; саморегулируемое обучение

### Introduction

The swift advancement of digital tools has dramatically reshaped the landscape of modern education, transforming established teaching practices and redefining how instructors and learners interact. Within this shifting context, blended learning has emerged as one of the most resilient and versatile educational formats. By merging in-person instruction with digitally mediated learning, this approach enables educators to design learning experiences that are more flexible, inclusive, and personalized [1, 125].

Foreign language teaching has been particularly affected by this shift. Because successful language acquisition depends on ongoing communication, interactive exchange, and engagement across multiple modalities, the use of digital instruments has expanded both the scope and the depth of instructional practice. Online environments, mobile applications, and collaborative digital spaces now allow continuous interaction with authentic language materials and offer learners opportunities for real-time practice, reflection, and feedback.

Through these tools, learners maintain consistent exposure to the target language, access personalized materials, receive instant feedback, and follow adaptive learning trajectories. Yet integrating technology into blended language instruction poses specific challenges. Studies repeatedly underline that the educational value of technology relies not only on infrastructure but

also on instructional design, teacher competence, and learner motivation [3, 16]. To achieve effective results, educators need a solid grasp of the theoretical and methodological principles of blended pedagogy. Ultimately, the impact of digital innovation depends on how well these tools are aligned with communicative objectives and the broader goals of language education [4, 232].

The global health crisis of the past few years has accelerated the transition to hybrid, technology-driven education, requiring both instructors and learners to adapt to virtual environments. While this shift revealed the potential of online platforms and diversified available resources, it also exposed persistent inequalities – unstable access to digital tools, insufficient user competence, and limited pedagogical readiness [5, 1074]. These developments encouraged educators and researchers to revisit existing frameworks and reimagine blended learning as a sustainable balance between innovation and human interaction.

Despite a growing body of literature on digital pedagogy and online learning, the field still lacks a unified theoretical synthesis that systematizes contemporary findings and highlights research gaps. The objective of the present paper is to conduct an analytical review of scholarly works exploring the use of digital technologies in blended foreign language instruction. The study aims to:

1. Explore how the concept of blended learning has evolved as a pedagogical model in foreign language education.
2. Examine the theoretical foundations and teaching strategies most frequently applied in blended settings;
3. Identify recurring limitations and unresolved challenges in technology-enhanced language instruction;
4. Highlight conceptual gaps and outline directions for further investigation.

The study follows a descriptive-analytical literature review methodology, focusing on academic publications, peer-reviewed articles, and conceptual papers on digital and blended language education. The selected sources represent both theoretical discussions and empirical findings that collectively contribute to understanding how technology supports or constrains the blended model. The analysis emphasizes the intersection between pedagogy and technology rather than technical descriptions alone [6, 1610].

The article's structure follows the conventional scientific model. The Methodology section describes the selection of literature and analytical procedures. The Results section summarizes the key findings extracted from the reviewed sources. The Discussion interprets these findings and addresses the pedagogical implications of digital integration. The Conclusion outlines the main theoretical insights and suggests directions for future research.

### **Methodology**

The present research utilizes a descriptive-analytical review to consolidate findings from studies addressing the role of digital technologies in blended foreign language learning. The methodological goal is to identify central theoretical perspectives, summarize key empirical outcomes, and evaluate the extent to which digital innovations influence learners' motivation, autonomy, and communicative competence.

The analyzed literature comprises peer-reviewed journals, scholarly books, and institutional reports published between 2018 and 2025. Preference was given to sources focusing directly on technology-supported or hybrid models of language instruction. At the same time, general works on educational digitalization were included only when they provided relevant conceptual or pedagogical insights. Altogether, 37 sources were selected for detailed analysis. Each study was assessed for its research quality, clarity of theoretical background, methodological design, type of technology applied, and documented learning outcomes. Particular attention was given to studies that connected technological tools with specific pedagogical aims and learner-centered practices.

To identify relevant materials, multiple academic databases were searched, including ERIC, Scopus, SpringerLink, ScienceDirect, and ResearchGate. The search employed a combination of Boolean operators and key terms, including “blended learning,” “digital tools in language instruction,” “mobile-assisted language learning,” “virtual and augmented reality in education,”

“learning management systems,” and “technology-enhanced pedagogy.” After screening abstracts and eliminating duplicates, roughly 60 publications were identified, of which 37 met the inclusion criteria.

The collected literature was analyzed through a conceptual and comparative synthesis approach. This analytical process involved identifying shared themes, pedagogical frameworks, and research directions across various studies. The selected works were organized into three main categories:

- Types of technologies applied: mobile-assisted systems (MALL), flipped learning supported by LMS platforms, and immersive or virtual learning environments;
- Pedagogical roles and learner outcomes: collaboration and interactive engagement, self-management and independence, sustained motivation, and the advancement of communicative ability;
- Benefits and constraints: overall effectiveness, contextual limitations, institutional capacity, educator preparedness, and ongoing professional growth requirements.

Such categorization enabled a more systematic synthesis, highlighting both the technological aspects and their educational implications. In particular, the analysis focused on the relationship between digital tools, instructional design, and the learning experience, revealing how digital tools can foster – or, in some cases, hinder – self-regulation, engagement, and communication-oriented learning.

The limitations of this methodology stem from the language and time frame of the reviewed sources. Only materials written in English were included, and the review covered works published between 2018 and 2025. Additionally, the analysis relied mainly on open-access or institutionally available databases, potentially excluding proprietary research. Nevertheless, the selected corpus offers a well-grounded basis for analyzing ongoing developments in the implementation of digital tools in hybrid foreign language teaching.

## **Results**

The integration of digital resources into blended language teaching has become a hallmark of twenty-first-century pedagogy. The reviewed literature confirms that technological tools no longer serve as optional add-ons but function as mediators that shape interaction, learner independence, and multimodal engagement. Their application can generally be classified into three key spheres: mobile-based learning, LMS-enhanced or flipped instruction, and digitally immersive settings.

A substantial body of research highlights the effectiveness of mobile-assisted learning applications, particularly in enhancing vocabulary acquisition and encouraging autonomous practice. Experimental studies show that students who used mobile platforms for vocabulary learning and repetition achieved higher results than those who relied on printed materials [7, 179]. Reviews further confirm that gamified tools, such as badges and leaderboards, transform vocabulary learning into an engaging and dynamic activity, increasing motivation and participation [8, 54]. Mobile-supported instruction extends learning beyond the classroom, encouraging students to interact with real-life language content, obtain immediate responses, and monitor their performance over time. These practices are rooted in the constructivist view of learning as an active process of building knowledge facilitated by both technological and social collaboration.

A second prominent direction of integration centers on flipped classroom practices and LMS-based instructional frameworks. Within blended language courses, platforms like Moodle or Google Classroom act as core spaces for organization and digital collaboration. They provide access to instructional materials, allow asynchronous participation, and support structured formative assessments that encourage personalization and self-regulated learning [10, 142]. When lessons and video lectures are completed outside of class, face-to-face sessions become spaces for dialogue, cooperative problem-solving, and mutual evaluation. This method expands opportunities for communication and reduces emotional obstacles to active involvement [11, 25].

Empirical comparisons between traditional and blended instruction consistently demonstrate higher student achievement and satisfaction in flipped environments [12]. In such contexts,

teachers serve not as information providers but as architects and mentors of interactive digital learning environments, while students assume greater responsibility for progress. This change marks a broader pedagogical shift toward learner-centered approaches to language pedagogy.

A third, rapidly developing field of integration involves immersive technologies such as VR and AR, which aim to replicate genuine communicative contexts. Meta-analyses show that VR-based learning delivers significant gains in linguistic and affective outcomes [13, 3147]. Learners engaged in simulated, context-rich virtual situations exhibit improved pronunciation accuracy, listening skills, and communicative assurance in comparison with conventional classroom learners [14, 31]. Virtual and augmented platforms cultivate a strong sense of presence and immersion that goes beyond what text-based tools can provide. Despite technical and financial constraints, such environments demonstrate the growing potential of multisensory and experiential learning.

Across studies, several common tendencies emerge. The success of digital integration relies on careful pedagogical design—technology yields meaningful results only when embedded within coherent educational models rather than applied as isolated tools. Learner autonomy and digital literacy are critical mediators of performance and satisfaction. Moreover, teacher readiness and institutional backing remain essential conditions for long-term success; without these supports, even advanced technologies risk being adopted only at a surface level.

The overall evidence indicates that integrating digital resources into blended language instruction produces multiple interconnected pedagogical outcomes: greater learner motivation and engagement, enhanced independence and self-regulation, and noticeable improvements in communication skills. Contextual examples, including those from Kazakhstan, further demonstrate how these outcomes manifest locally, showing that thoughtful adaptation is a decisive factor determining the overall success of blended learning programs.

Empirical findings confirm that integrating digital tools has a notable positive effect on learner motivation. Interactive, multimodal resources—videos, games, and simulations—evoke stronger emotional engagement and sustain students' attention for more extended periods [15, 179]. Research on flipped learning in EFL contexts suggests that digitally supported formats are perceived as more dynamic and enjoyable, generating greater satisfaction and participation [16, 8]. Likewise, mobile applications designed for vocabulary practice enhance learners' sense of progress through instant feedback, flexible scheduling, and the possibility to monitor achievement independently [17, 21].

These outcomes correspond with the self-determination theory, which identifies autonomy, competence, and relatedness as essential motivational components. Digital environments that enable learners to choose their own activities, set their own pace, and monitor their development encourage sustained interest and clearer goal orientation [18, 19].

A significant pedagogical advantage of digital integration lies in strengthening learner autonomy and self-regulatory capacity. Studies show that online platforms, mobile apps, and LMS interfaces nurture responsibility, time management, and metacognitive control [19, 10]. For example, flipped models require students to prepare independently before class and apply acquired knowledge during collaborative classroom tasks, building both confidence and accountability [16, 9].

A 2025 systematic review concluded that flipped instruction promotes autonomy when teachers successfully balance flexibility with structure and maintain guidance without diminishing independence [20, 22]. Similarly, mobile learning contexts enhance self-regulation as learners often engage with adaptive systems that personalize content [17, 13]. Scholars also note that effective self-regulation strategies – goal setting, self-reflection, and progress evaluation – mediate the link between technology usage and academic success. Learners with stronger self-monitoring skills benefit more from blended formats, while those with limited digital proficiency are more prone to cognitive overload.

Another key outcome involves the development of communicative competence. Technology-enhanced learning provides realistic, interactive environments that simulate authentic communication. VR and AR systems, along with synchronous online communication tools, enable

students to participate in real-world linguistic exchanges. Quantitative evidence shows that VR-supported courses substantially improve speaking fluency, listening comprehension, and pronunciation accuracy relative to conventional instruction [21, 3147].

Blended learning formats usually allocate in-person sessions for speaking and collaborative tasks while digital tools strengthen receptive and productive skills. Mobile learning particularly aids vocabulary and pronunciation development, whereas LMS platforms and video-based activities refine writing and interaction. Despite pedagogical progress, results may vary depending on contextual and human factors, such as teacher expertise and access to technology.

Frequent issues include cognitive overload, distraction, and inconsistent connectivity, underscoring the importance of balanced integration that maintains human interaction as the foundation of language development. Within blended instruction, various technological solutions, ranging from gamified vocabulary training to adaptive feedback tools, serve distinct purposes depending on learning objectives.

Among the most widely used resources are mobile vocabulary applications. For instance, a study comparing the BaiCizhan mobile app with paper-based word lists found higher immediate recall of meaning and form in the mobile group. However, long-term retention showed minor differences [17, 39]. This implies that while digital tools accelerate acquisition, sustained learning depends on consistent practice and integration with course design.

A meta-analysis of mobile vocabulary studies demonstrated that well-designed apps significantly enhance retention and learner attitudes, especially when incorporating spaced repetition or game-based features [22, 41]. However, research also notes that many MALL applications focus primarily on receptive vocabulary rather than productive use or complex communication skills [23, 7303].

Digital reading platforms with interactive glosses and contextual hyperlinks also contribute to vocabulary growth, particularly among intermediate learners [24, 4535]. Gamified tools such as Kahoot! or Quizizz increase motivation by combining competition, feedback, and emotional engagement, supporting low-stress formative assessment [25, 336].

Recent innovations include metaverse-based and augmented reality learning. Experiments with secondary-level learners indicate that metaverse environments promote stronger retention and a greater sense of social presence than conventional instruction [26, 58]. Similarly, AR projects such as VocabulARy enhance vocabulary learning through visual annotation, leading to superior immediate and delayed recall [27]. These results emphasize the transformative potential of immersive, interactive technologies in fostering authentic communication and motivation.

### **Discussion**

The rapid adoption of digital technologies in foreign language education has required not merely technical adaptation but a fundamental shift in pedagogical paradigms. Integrating digital resources into blended environments has reshaped the relationship between teacher and learner, transforming classrooms into interactive ecosystems that combine human communication with technological mediation. The reviewed research consistently emphasizes that the success of blended learning depends on a combination of pedagogical coherence, teacher preparedness, learner autonomy, and institutional support rather than on the technologies themselves.

A central dimension of this transformation is the redefinition of the teacher's role. In blended language education, instructors are no longer positioned primarily as transmitters of knowledge but as designers, facilitators, and mediators of learning experiences. The ability to curate, adapt, and integrate digital tools effectively has become a core component of pedagogical competence. This reorientation requires teachers to cultivate digital literacy, awareness of instructional design, and reflective practice. As noted in the study *Digital Literacy Practices in Language Pedagogy* [28, 1326], the development of digital competence unfolds gradually—from basic awareness and acceptance to active adaptation and eventually full integration into CALL and MALL frameworks. Teachers move through cyclical processes of experimentation, evaluation, and refinement, suggesting that digital pedagogy is inherently dynamic and iterative.

Instructors' digital literacy is closely connected to formative assessment literacy, which has emerged as a cornerstone of effective blended teaching. The capacity to assess learning continuously, rather than exclusively through summative evaluation, allows teachers to tailor instruction in real time. The study *Understanding EFL Teachers' Formative Assessment Literacy* demonstrates that teachers' expertise, institutional backing, and experience directly affect their ability to provide relevant and constructive feedback [29, 25]. Similarly, research such as *Formative Assessment in a Blended Learning Model* confirms that ongoing digital feedback delivered through LMS platforms—most notably Moodle—enhances student engagement, writing quality, and academic achievement [30, 171]. In this sense, formative assessment functions as a bridge between the online and face-to-face components of blended instruction, linking continuous feedback, reflection, and motivation.

At the same time, pedagogical alignment emerges as a decisive determinant of blended learning effectiveness. When digital and physical components are deliberately integrated, rather than duplicated, they reinforce each other's strengths. According to *A Systematic Review on the Effects of Blended Learning in EFL Higher Education Contexts* [32, 1867], the most successful blended courses are those in which online tasks, materials, and evaluation complement in-person sessions, forming a coherent instructional logic that enhances engagement and language competence. This coordination transforms digital tools from supplementary materials into integrated pedagogical instruments that expand opportunities for practice, collaboration, and creativity.

Institutional support, however, remains an indispensable prerequisite. Without access to professional development and technological infrastructure, digital integration risks becoming superficial—an aesthetic addition rather than a genuine innovation. Studies underline that schools and universities must provide training programs, mentoring, and adequate infrastructure to empower teachers as active innovators rather than passive users. When institutional frameworks promote experimentation and collaboration, instructors are more likely to engage in continuous professional growth and reflective digital practice.

Furthermore, the learner's role in blended contexts has changed dramatically. Learners are no longer passive recipients of instruction but active participants in constructing knowledge through interaction with peers, instructors, and technological systems. Theories such as constructivism, connectivism, and self-determination theory help explain how blended learning fosters self-directed engagement and motivation. From a constructivist perspective, learning occurs through active meaning-making, supported by digital tools that provide authentic, contextualized input. Connectivist theory extends this by suggesting that digital platforms function as nodes in a larger network of learning, enabling students to access and contribute to knowledge communities.

Self-regulated learning (SRL) frameworks also shed light on why blended environments enhance learner performance. Students who plan, monitor, and evaluate their own learning, mainly when supported by teacher scaffolding, develop stronger cognitive and metacognitive skills. Research by Xu and Gao [33, 5] demonstrates that learners applying SRL strategies in blended settings exhibit higher satisfaction, improved receptive skills, and more autonomous behavior. Similarly, the inclusion of structured peer interaction and mobile-based feedback systems such as WeChat or Google Classroom threads significantly boosts motivation, oral fluency, and sustained engagement [35, 10]. These findings reinforce the idea that effective blended learning requires a balance between teacher guidance and learner agency.

Motivation, as numerous studies confirm, functions as both a precondition and an outcome of successful blended instruction [36, 6839]. Digital learning environments promote intrinsic motivation when they satisfy learners' needs for autonomy, competence, and relatedness, as outlined by self-determination theory. The availability of adaptive content, gamified interaction, and opportunities for immediate feedback fosters a sense of control and achievement. However, these same features can produce cognitive overload if students lack digital literacy or self-regulation skills. Consequently, motivational gains depend on how well the pedagogical design supports the learner's capacity to navigate technological complexity.

A persistent challenge involves equity and accessibility. Despite technological progress, many institutions still face limitations in infrastructure, bandwidth, and device availability. Students from disadvantaged contexts may experience fragmented access, undermining participation and performance. Moreover, cultural and linguistic differences can shape how learners perceive technology-mediated instruction. These disparities highlight the need for inclusive policies and adaptive designs that consider diverse learning environments [37, 71].

Another important theme emerging from literature is the relationship between human interaction and digital mediation. While online platforms enhance flexibility, they cannot entirely replace the immediacy of human communication. The most effective blended designs integrate digital activities that complement rather than substitute for face-to-face interaction. As studies show, social presence—the feeling of being connected to peers and instructors—plays a crucial role in sustaining engagement. Tools such as synchronous video meetings, collaborative writing platforms, and virtual breakout rooms help preserve interpersonal communication in digital contexts.

Furthermore, the ongoing digital transformation of education introduces new ethical and pedagogical challenges. Issues of data privacy, surveillance, and the commercialization of educational technology demand critical awareness from educators. Pedagogical innovation must therefore align with principles of transparency, inclusivity, and ethical digital citizenship. Instructors are encouraged to critically evaluate not only the functionality but also the socio-cultural implications of the technologies they employ.

Emerging research points toward the integration of AI-driven adaptive systems and data analytics in language education. These technologies allow for real-time feedback, personalized learning trajectories, and predictive assessment of learner progress. However, their successful application depends on the instructor's ability to interpret and contextualize algorithmic insights pedagogically. Artificial intelligence can augment, but not replace, human judgment and empathy—the core elements of effective teaching.

Looking to the future, blended language education is likely to evolve toward even greater interactivity, personalization, and learner agency. Project-based approaches, combined with SRL and peer collaboration, are expected to define the next generation of blended models. As mobile technologies and immersive platforms become more accessible, teachers will need to continue adapting their roles, transitioning from content deliverers to facilitators of discovery and innovation.

In summary, the literature suggests that the transformative potential of blended foreign language education lies not in the technology itself, but in the intentional and reflective pedagogical design that integrates human and digital dimensions. Sustainable success requires investment in teacher development, institutional infrastructure, and equitable access. By balancing innovation with empathy and methodological rigor, blended learning can deliver not only linguistic proficiency but also the cognitive, social, and emotional skills essential for lifelong learning.

### **Conclusion**

The growing incorporation of digital technologies into blended language education has reshaped instructional practices and learner experiences. This review demonstrates that strategically implemented digital tools strengthen student motivation, autonomy, and communicative ability. Mobile-assisted applications, LMS platforms, and immersive technologies such as VR and AR provide authentic, interactive environments that expand learning beyond the classroom and foster self-directed study.

The effectiveness of blended instruction depends on pedagogical design rather than technology alone. Its full potential emerges when digital resources are coherently aligned with face-to-face components and when instructors possess the digital and formative assessment competencies required for facilitation. Continuous professional training and reliable infrastructure further enhance sustainability and quality.

Learner success is closely connected to self-regulated learning and peer collaboration. Students who consciously plan and evaluate their progress show stronger outcomes and greater satisfaction. Digital feedback systems and adaptive learning platforms not only improve cognitive performance but also nurture emotional engagement and a sense of agency, consistent with the principles of self-determination theory, which emphasize autonomy and competence.

Despite progress, disparities in access and expertise remain. Limited connectivity, insufficiently developed digital materials, and inadequate pedagogical preparation can reduce the effectiveness of blended models. Addressing these gaps requires integrative strategies combining technology, pedagogy, and institutional support to ensure equitable opportunities.

Looking ahead, the future of blended language education lies in the adoption of AI-driven adaptive systems, immersive environments, and project-based designs that unite technological capabilities with sound pedagogical objectives. Longitudinal and comparative studies are essential to assess the durability of learning outcomes and the broader impact of digital transformation on learner identity and communication.

Ultimately, the success of blended education rests on balancing technological innovation with human interaction, ensuring that technology enhances rather than replaces meaningful teaching and learning. When pedagogy, institutional backing, and learner motivation converge, digital tools act not as accessories but as catalysts for creativity, communication, and knowledge construction.

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