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ESSENTIAL DIMENSIONS OF AN INNOVATIVE EDUCATIONAL ENVIRONMENT FOR THE TRAINING OF FUTURE FOREIGN LANGUAGE TEACHERS

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The paper investigates the problem of creating an innovative educational environment for the training of future foreign language teachers in higher education institutions (HEIs). The study focuses on the integration of modern pedagogical approaches and innovative digital technologies into the professional training of future foreign language teachers. Aim of research is to theoretically conceptualize and practically outline the structure and main dimensions of an innovative educational environment for training future foreign language teachers, focusing on the integration of pedagogical conditions with advanced technological tools, including artificial intelligence (AI), adaptive technologies (AT), and virtual and augmented reality (VR/AR). The methods used to achieve the research goal were theoretical, namely analysis, synthesis, and generalization.

The article defines an innovative educational environment for the training of future foreign language teachers as a system of HEIs that integrates technological-digital, practice-oriented, network-based, ethical-axiological, and reflective conditions for the professional and personal development of a modern foreign language teacher. The possibilities of innovative technologies for student-philologists personalized learning, automated assessment, and intelligent feedback are outlined. The development of students' responsibility for AI use is underlined. The potential of VR, AR and geospatial technologies for creating immersive and authentic foreign language learning experiences is substantiated. The importance of data-driven pedagogy, gamification, co-creation of educational content, concept of Action Research, digital ethics, academic integrity, international virtual exchange, student self-governance, and e-portfolios is emphasized. The proposed model an innovative educational environment for training future foreign language teachers consists of six interconnected dimensions. The main digital tools and platforms that can support the implementation of each dimension are identified.

The study demonstrates that an innovative educational environment for future foreign language teachers should be considered a dynamic didactic system rather than merely a set of innovative

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digital technologies. The integration of the six dimensions creates conditions for personalized and collaborative learning, immersive language practice, responsible AI use, international interaction, professional reflection, and career development. The proposed model contributes to the formation of a professionally autonomous, digitally literate, reflective, and adaptable foreign language teacher. The prospects of further research are seen in the empirical testing of the proposed model and the development of criteria for assessing its effectiveness.

Key words: *innovative educational environment, future foreign language teacher, higher education, general secondary education, artificial intelligence, adaptive technologies, virtual reality, augmented reality, digital learning, gamification, professional autonomy, portfolio.*

СУТНІСНІ ВИМІРИ ІННОВАЦІЙНОГО ОСВІТНЬОГО СЕРЕДОВИЩА ПІДГОТОВКИ МАЙБУТНІХ УЧИТЕЛІВ ІНОЗЕМНИХ МОВ

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У статті досліджується проблема створення інноваційного освітнього середовища підготовки майбутніх учителів іноземних мов у закладах вищої освіти. Дослідження зосереджено на інтеграції сучасних педагогічних підходів та інноваційних цифрових технологій у професійну підготовку майбутніх учителів-філологів. Метою дослідження є теоретична концептуалізація та практичне окреслення структури й основних вимірів інноваційного освітнього середовища підготовки майбутніх учителів іноземних мов, зосереджуючись на інтеграції педагогічних умов із передовими технологічними інструментами, зокрема штучним інтелектом (ШІ), адаптивними технологіями, віртуальною та доповненою реальністю тощо. Для досягнення мети дослідження використано теоретичні методи, а саме аналіз, синтез та узагальнення.

У статті інноваційне освітнє середовище підготовки майбутніх учителів іноземних мов визначено як систему закладу вищої освіти, що інтегрує технолого-цифрові, практико-орієнтовані, мережеві, етико-аксіологічні та рефлексивні умови для професійного й особистісного розвитку сучасного вчителя іноземних мов. Окреслено можливості інноваційних технологій для персоналізованого навчання та автоматизованого оцінювання студентів-філологів, забезпечення інтелектуального зворотного зв'язку. Підкреслено розвиток відповідального застосування штучного інтелекту. Обґрунтовано потенціал віртуальної та доповненої реальностей, а також геопросторових технологій, для створення імерсивного й автентичного іншомовного навчального досвіду. Наголошено на важливості педагогіки, заснованої на даних, гейміфікації, спільного створення освітнього контенту, концепції Action Research, цифрової етики, академічної доброчесності, міжнародного віртуального обміну, студентського самоврядування та електронних портфоліо. Запропонована модель інноваційного освітнього середовища підготовки майбутніх учителів іноземних мов складається із шести взаємопов'язаних вимірів. Визначено основні цифрові інструменти й платформи, які можуть забезпечувати реалізацію кожного з вимірів окресленої моделі.

Проведене теоретичне дослідження демонструє, що інноваційне освітнє середовище підготовки майбутніх учителів іноземних мов слід розглядати як цілісну дидактичну екосистему, а не лише як сукупність інноваційних цифрових технологій. Інтеграція шести вимірів створює умови для персоналізованого та колаборативного навчання, імерсивної мовної практики, відповідального використання ШІ, міжнародної взаємодії, професійної рефлексії та кар'єрного розвитку. Запропонована модель сприяє формуванню професійно автономного, цифрово грамотного, рефлексивного та адаптивного вчителя іноземних мов. Перспективи подальших досліджень вбачаємо в емпіричній перевірці запропонованої моделі та розробленні критеріїв оцінювання її ефективності.

Ключові слова: *інноваційне освітнє середовище, майбутній учитель іноземних мов, вища освіта, загальна середня освіта, штучний інтелект, адаптивні технології, віртуальна реальність, доповнена реальність, цифрове навчання, гейміфікація, професійна автономія, портфоліо.*

Introduction of the issue. Fast-paced global technological shifts, combined with Ukraine's integration into the European educational space, require an immediate modernization of its higher education system. Training future teachers means stepping away from traditional instructional setups toward modern dynamic, tech-infused learning spaces. International strategies explicitly call for building strong digital education systems, boosting institutional capacity, and adopting flexible, learner-centered paths. National frameworks in Ukraine similarly view higher education as a key driver of social change. The national educational strategy outlines this directly: "the mission of higher education is to ensure sustainable innovative development through the training of highly qualified specialists, the creation and dissemination of knowledge, and the formation of the intellectual, social, and spiritual capital of society ready for future challenges" [6]. Global benchmarks echo this imperative. The Rome Ministerial Communiqué stresses that meaningful reform relies on "new and better aligned learning, teaching and assessment methods and practices, closely linked to research" [13]. It urges universities to diversify what they offer so students can build critical thinking and flexible learning paths. Meeting these demands requires a thorough conceptual grounding of the Ukrainian university teaching structure.

Modern pedagogical research defines an innovative learning environment as "a complex of spiritual and material conditions of an educational institution's functioning within a pedagogically expedient and organized space of life activity that influences the personal and professional development of the individual" [7: 136]. Far from being just a physical classroom or a virtual portal, it functions as an evolving continuum of spatial, social, cultural, and technological elements that gives every future specialist space for professional self-actualization. Putting this framework to work in foreign language teacher education requires a modern technological layer, namely adaptive online platforms, AI, and immersive tools like VR and AR. While the university environment sets the pedagogical and ethical baseline, adaptive and immersive tools supply the actual mechanics that refine language acquisition.

Hence, addressing how to build an innovative educational environment for training future foreign language teachers is vital, given that foreign languages remain a primary medium for international dialogue. These factors directly ground the relevance of this research.

Current state of the issue. Various aspects of the innovative educational environment formation have been addressed in the works of scholars such as A. Bodnar [5], K. Horash [5], M. Opachko [13], S. Petrenko [12], H. Rozlutska [14], O. Shapran [16], Yu. Shapran [16], N. Tkachuk [17]. Many research works have been devoted to specific features of innovative educational activity, including innovative technologies, the pedagogical, methodological and new aspects of the modern teacher training in the practice of HEIs (O. Dubaseniuk [3], D. Begeka [1], N. Biruk [2], P.K. Hepp, J.G. García and M.A. Prats Fernández [4], V. Krykun [10], N. Onyshchenko [7-11], N. Serdiuk [8-10; 15]). At the same time, the problems of creating an innovative educational environment for teacher training remain unresolved.

An innovative learning environment in HEIs is an "educational space that leverages modern technologies, methods, and approaches to train future specialists capable of identifying and solving complex, specialized tasks and practical challenges of an innovative and creative nature" [7]. It should rely on using contemporary tools and platforms throughout the learning process while creating conditions for self-realization, the development of analytical skills, complex problem-solving, and decisive action. Furthermore, this environment should enable HEIs to quickly respond to societal changes, adapt academic programs to modern standards, and engage future teachers in scientific research and creative inquiry. Ultimately, an innovative university environment

ensures the preparation of highly qualified professionals who meet the demands of today's labor market and possess the capacity for lifelong professional growth and continuous innovation. Minding the fact that modernizing the process of teaching foreign languages needs constant creating of new conditions for it every year, there are numerous innovative technologies, methods, tools, and resources that can be used in the training of future foreign language teachers in Ukrainian HEIs.

Despite studies of individual aspects of this problem, the issue of creating an IEE-TFFLT remains open.

Aim of research is to theoretical conceptualize and practically outline the structure of an innovative educational environment for training future foreign language teachers, focusing on the synthesis of university-level pedagogical conditions with cutting-edge technological tools, including adaptive AI systems and immersive VR/AR platforms.

The methods used to achieve the research goal were theoretical, namely analysis, synthesis and generalization.

Results and discussion. Under the *innovative educational environment for the training of future foreign language teachers (IEE-TFFLT)*, we understand a system of a higher education institution that integrates technological and digital (AI, AT, and simulation systems), practice- and network-based, as well as ethical and axiological conditions for developing academic culture and the multidirectional professional and personal development of a modern foreign language teacher who is independent teachers capable of critical self-analysis and confident tech integration.

The integration of AI and AT into the IEE-TFFLT in HEIs has considerable potential for improving the quality of the educational process. However, their full-scale implementation requires overcoming certain challenges, which demands time, resources, and appropriate training. Among the main challenges, particular attention should be paid to the need for adequate technological infrastructure (educational institutions should have access to computers, the Internet, and other digital resources, as well as VR and AR equipment, etc.); the need to train teachers responsible for the educational process within the IEE-TFFLT (they should possess the relevant skills to work with new technologies and adaptive online environments in order to implement a personalized approach to learning); issues of learner privacy and data protection (since AI collects and analyzes personal data to personalize learning, which entails certain risks of data breaches); as well as issues of academic culture and the ethics of AI use.

At present, several online platforms already use AT and AI for personalized learning, including English grammar learning. Some of these platforms incorporate AI and adaptive technologies, for example: Duolingo (an adaptive online course that adjusts the difficulty of exercises depending on learners' performance and actively uses AI for error correction); Babbel (a platform that offers adaptive grammar and vocabulary lessons tailored to individual learner needs); Grammarly (although this platform is not a traditional educational resource, it actively uses AI to check grammar and provides recommendations that help learners correct errors); Busuu (uses adaptive technologies for grammar learning, including exercises involving morphological structures); Memrise (uses an adaptive approach to vocabulary and grammar learning and offers interactive exercises, including those focused on grammatical structures); and EnglishClass101 (includes adaptive exercises in grammar and vocabulary, as well as interactive dialogues that can help learners apply grammatical structures in real-life contexts). However, all these and similar platforms have their own strengths and weaknesses. This calls for examining the issue further and explore ways of developing a more effective learning environment that would integrate the best functionality of these platforms and go beyond it.

Among main trends in educational technologies N. Onyschenko and N. Serdiuk identified the following:

information and communication technologies, AI, VR and AR, Big Data, learning analytics, network technologies, television and video technologies, project-based learning, gamification, microlearning, STEAM education, and others [9]. Scientists also identified the key reasons of usefullness of integrating these technologies into teacher training in HEIs: 1) the use of innovative teaching technologies greatly enriches the educational process and motivates learners to study, 2) helps teachers to adapt future educators to technological change and digital challenges, 3) promotes critical thinking and problem-solving, fostering an environment where students actively engage with the material, 4) fosters interdisciplinary skills, helping students understand how different fields intersect and enhancing their ability to think across disciplines, 5) allows teachers to make the personalization of learning possible, 6) fosters a culture of lifelong learning, equipping students with the skills needed to adapt to new challenges throughout their careers [9].

Therefore, we tried to identify a matrix of IEE-TFFLT. It consists of six major dimensions that integrate advanced technological concepts and innovative solutions for ensuring the comprehensive development of the future foreign language teachers' professionalism during their studies at an institution of higher education, namely:

1. Technological-digital and immersive-simulation dimension (Smart Space, AI, and VR/AR/Geo-Technologies), that serves as the fundamental basis for developing a modern IEE-TFFLT, shaping the professional toolkit of future teachers.

A personalized AI architecture plays a central role here. Guided by university faculty, AI carries out initial diagnostic assessments of students' language proficiency and dynamically tailors their learning tracks. Automating knowledge mapping across morphology, syntax, vocabulary, and punctuation helps students understand how adaptive algorithms operate in practice. Experiencing these tools firsthand prepares future teachers to apply differentiated instruction in their own classrooms, moving the focus away from traditional testing toward targeted individual feedback and support.

Practical tools for this setup include Century Tech, Knewton, Duolingo for Schools, Quill.org, Moodle LMS adaptive modules (Quiz/Feedback), and Grammarly Business / Premium.

AI Fluency and Prompt Engineering. The transformation of digital literacy into the qualitatively new phenomenon of AI Fluency is becoming a critical prerequisite for the professional development of foreign language education specialists. Developing prompt engineering skills allows HEIs students, supported by teacher-facilitators, to design interactive role-playing dialogues with AI chatbots. There exercises reproduce realistic situations of everyday and professional-pedagogical communication in a foreign language. Future foreign language teachers learn to self-construct customized didactic prompts for modeling speech scenarios, correcting systematic grammatical and stylistic errors, and supporting authentic communication. This hands-on experience exposes both the strengths and linguistic limits of generative networks, ensuring the methodologically grounded and ethically responsible integration of AI into the educational process of the modern secondary schools.

The relevant resources include ChatGPT (OpenAI GPT-4o / Custom GPTs), Claude (Anthropic), Google Gemini, Poe, SchoolAI, Character.ai.

Immersive and geospatial content significantly expands the boundaries of traditional classroom communication by providing virtual immersion in an authentic language environment when exploring topics related to linguistic and cultural studies. The use of VR and AR technologies to organize virtual tours of leading museums, galleries, and landmarks in English-speaking countries and Ukraine makes it possible to organically integrate sociocultural material into the process of mastering complex grammatical and

lexical structures [15]. Integrating tasks with mapping tools like Google Earth and/or Google Maps increases students' cognitive motivation, transforming language learning into an exploration of a living sociocultural space. As a result, future teachers acquire the methodology for creating visually rich and contextually grounded didactic materials for students of the New Ukrainian School classrooms.

The relevant tools include the following programs and resources as Google Earth, Google Maps (Street View), Google Arts & Culture, ThingLink, ClassVR, Sketchfab, BBC VR, and virtual tours.

As an example, the N. Serdiuk's complex of VR-tours for learning English as a foreign language at HEIs and GSEIs should be named. It consists of two parts according to the way of their creation, namely: Part 1 (teacher's and students' creation) – The use of VR-tours based on online platforms (such as Google Earth or similar Google Earth Plus/Pro/Engine, Mapillary, Tour Builder, Historypin, Tour Creator), in particular, VR-tours visiting geographical locations to consolidate lexical-grammatical material, VR-tours of the overview and description of monuments and sights, VR-tours to Mars and the Moon, VR-tours by the teacher's instuctions and commands, VR-tours along a route planned before by the applicant or a group, VR-tours as a trip along an improvised route; Part 2 – Using already existing online VR-tours for studying English grammar and lexis: VR-tour «Ukrainian open-air museums» (to 7 authentic museums of Ukrainian culture and life, Ukraine), VR-tours to Art Museums and to Natural History Museums (USA, UK) [15].

Ensuring cross-platform compatibility and the functioning of a HyFlex environment serves as a technological framework that ensures continuous, accessible educational interaction. The synchronization of mobile apps, web versions of adaptive platforms, and popular learning management systems (LMS) environments (for example, as Moodle LMS of Hryhorii Skovoroda University in Pereiaslav, Google Classroom, and Microsoft Teams) forms a single united digital space within Smart Classrooms. Experience of working in such a multi-component environment under the moderation of a higher education instructor develops future foreign language teachers' methodological flexibility, their ability to effectively combine face-to-face and remote teaching formats, while managing digital whiteboards, text editors, and graphic tools. As a result, this dimension strengthens teacher competitiveness, technological autonomy, and adaptability.

Practical tools include LMS Moodle, Google Classroom, Microsoft Teams, Zoom, interactive whiteboards (Miro, Padlet), and Canva for Education.

2. Analytical-didactic and psychological-motivational dimension (data-driven pedagogy & gamification) marks a transition from intuitive teaching to evidence-based, data-informed instruction. It fosters the analytical culture and methodological reflection of future foreign language teachers.

The systematic *development of a personal language and grammar profile* for HEIs students enables university teachers to automatically monitor the dynamics of foreign language acquisition, identify persistent typical errors. Intelligent data-analysis predicts the success of mastering complex linguistic structures and develops optimized schedules for spaced repetition of lexical and grammatical material. This practical training introduces future foreign language teachers to Data-Driven Pedagogy, teaching them to assess learner educational needs in their professional practice objectively.

The relevant tools, could be used, are Anki, Quizlet, Memrise, Moodle Analytics Engine, and MS Power BI / Google Looker Studio (for learning data visualization).

A qualitatively new element of this dimension is the *implementation of real-time intelligent feedback systems*. Unlike traditional assessment that simply flags right or wrong answers; intelligent feedback systems explain the cognitive logic behind grammar rules and pinpoint the root causes of errors. Automated exercise recommendations help students

consciously address specific gaps in their knowledge. Interaction with such analytical tools develops future teachers' understanding of the importance of formative assessment. Morever it demonstrates how to offer clear, explanatory support to learners.

This can be implemented with the help of LanguageTool, DeepL Write, Wordtune, Grammarly, and specialized error-analysis modules via ChatGPT or Claude.

The psychological and pedagogical potential of the environment is significantly enhanced through *gamified and motivational support* for the educational process. It can transform the acquisition of language norms into a dynamic and engaging activity. Engaging students in thematic linguistic marathons, grammar quests, individual challenges, and professional competitions supports the systematic nature of self-study work, while point-based ranking systems encourage academic competition and self-improvement. Mastering these strategies enables future foreign language teachers to aply gamified methods effectively in general secondary school education (GSEI) in order to increase the motivation of pupils. As a result, the combination of analytical and motivational components creates a supportive, highly effective didactic environment, focused on the personal growth of each learner.

This dimension can be implemented through such tools as Kahoot!, Quizizz, Wordwall, Genially, Classcraft, Baamboozle, LearningApps and others.

3. Practice-methodological dimension and co-design (co-creation & action research) ensures the transformation of the higher education student from a passive consumer of educational information into an active architect of digital didactic content.

Within methodological and linguistic disciplines of the educational and professional program (in particular, foreign language teaching methodology, practical grammar, and theoretical grammar), students act as *co-developers* of interactive exercises, functional sentence-analysis simulators, linguistic quizzes, and digital glossaries. Such their activity should be under the mentorship of instructors. The use of authentic multimedia resources, including educational podcasts, animated stories, and audio recordings by native speakers, helps future foreign language teachers to design rich visual and auditory learning environments his hands-on work builds methodological creativity, pedagogical design expertise, and practical skills in content creation.

Recommended tools include H5P, Edpuzzle, Spotify for Podcasters / Anchor, Audacity, Canva, and Liveworksheets.

An important element of this dimension is *continuous students' practice in GSEIs combined with self-reflection on their own teaching experience* (Action Research). It lets students test their self-developed digital tasks in real classrooms and adjust teaching plans based on pupil feedback. Supported by university methodists, this process contributes to the future foreign language teachers' professional autonomy development and methodological maturity.

Recommended tools include Google Workspace for Education, Notion, Loom (for video reflection and lesson recording), and Google Forms / Mentimeter (for feedback collection) and others.

On the ground of the analysis the experience of economically developed countries (Great Britain, the USA, Germany, Japan, France, Denmark, Austria, the Netherlands) and countries with a transition economy (Greece, Ireland, Portugal, Poland, Hungary), N. Onyschenko and N. Serdiuk proposed methodological recommendations for Ukrainian HEIs, which take into account global trends and provide for the improvement of the principles, forms and methods of interaction of HEIs and GSEIs (including such links as "intern – parents of students – directorate of GSEI", "practice manager – subject teacher – class teacher"), ensuring quality monitoring of pedagogical practice, promoting the improvement of scientific and pedagogical staff professional competence and professional skills as practice methodologists and managers, updating pedagogical practice programs of HEI and extension of the terms of their conduct, improvement of educational programs of

HEI by increasing credits for studying educational components of pedagogical direction and introducing educational components aimed at forming a culture of innovative activity, ensuring an effective combination of innovative curricular and extracurricular activities of future teachers [8].

4. Ethical-axiological and cultural dimension (digital ethics and authenticity) determines the value orientations underlying the functioning of the innovative environment and develops the professional and ethical culture of future foreign language teachers.

A central place in this process is occupied by the affirmation of *academic integrity* in the context of the widespread use of generative AI and maschine translators. Students learn to use AI responsibly when writing research papers, practicing academic writing, or translating. They are trained to evaluate AI outputs critically for factual and linguistic accuracy, and to respect copyright. Internalizing these standards ensures future foreign language teachers embody high academic values and bring responsible tech habits into their own classrooms.

Detection and management tools include Unicheck, StrikePlagiarism, Turnitin, Copyleaks, Zotero, and Mendeley.

The *development of network ethics (netiquette)* is becoming a necessary condition for creating a safe, inclusive, and productive educational space. Mastering the rules of digital etiquette during synchronous and asynchronous interaction builds stromg intercultural and professional communication skills. Future foreign language teachers practice the netiquette of formal correspondence, academic discussions online, and conflict prevention in virtual spaces. As a result, systematizing knowledge of network ethics ensures teachers' readiness to maintain a positive online learning climate and foster digital culture within student groups.

The following tools can be used: LMS Moodle forums, corporate Microsoft Teams / Slack chats, and ethical guidelines and checklists in Padlet / Notion format.

5. Socio-institutional and network dimension (partnership, student self-governance and collaborative online international learning**)** ensures the development of horizontal connections and strengthens social interaction among participants in the educational process within the electronic environment.

The implementation of *collaborative learning* principles for HEIs students opens up broad opportunities for organizing different types of work (pair, group, and team) on digital learning platforms, whether solving linguistic tasks, designing teaching projects, building shared glossaries etc. These collaborative experiences develop future foreign language teachers' skills for communication, professional cooperation, and team responsibility. Such experience of collaboration in the online environment prepares future foreign language teachers to effectively organize student interaction in the modern GSEI.

The following tools as Google Docs / Slides / Sheets, Miro, Mural, Trello, and Padlet can be suggested for collaborative learning.

The potential of this dimension is significantly expanded through the *synergy of student self-governance and the systematic international integration of the educational process*. Active involvement in the activities of the faculty student council (running language clubs, volunteer educational projects and others) contributes to the development of students' soft skills, leadership qualities, and organizational abilities. At the same time, participation of HEI students in international virtual exchange projects, collaborative online international learning projects, and academic mobility programs promotes the development of intercultural communicative competence and broadens their professional outlook through direct interaction with native speakers. That is an exceptionally timely opportunity within Ukraine's current social and political context. Combining internal student initiative with international networking fosters globally oriented foreign language teachers ready for intercultural dialogue.

This dimension can be implemented through different programs, for example eTwinning and Erasmus+ Virtual Exchange etc. Canva, Discord, and similar resources can be used for media support of student council initiatives, which is also useful.

Scientists N. Onyshchenko, N. Serdiuk and V. Krykun identified innovative forms of the extracurricular work in HEIs, grounding the specifics of pre-service teachers training [10]. Furthermore, the HEIs innovative educational upbringing environment, driven by the synergy of student self-governance and systematic international integration, extends teacher training beyond traditional academic boundaries by immersing future teachers in authentic, value-driven, and collaborative activities.

6. Subject-oriented career and reflective dimension (e-portfolio and professional autonomy) is aimed at developing the professional independence and career competitiveness of future foreign language teachers.

Throughout their studies, future foreign language teachers can systematically develop *a personal e-portfolio.* They accumulate their own lesson plans, digital exercises, online training tools, media assets, non-formal education certificates, mobility credentials, and certificates of participation in international projects and programs. This portfolio serves as tangible proof of future foreign language teachers' practical readiness for pedagogical activity and becomes a strong professional profile for future employment.

Portfolio development involves work on such educational platforms as Coursera, edX, FutureLearn, Udemy, Prometheus, Google Sites, Wix, and LinkedIn.

The *development of professional autonomy and psychological resilience* represents the final outcome of the functioning of the innovative educational environment. A systematic focus on self-directed learning develops future foreign language teachers' capacity for continuous self-improvement, overcoming psychological and linguistic barriers, and critically reflecting on their own teaching experience. Psychological resilience helps teachers adapt to educational reforms, including the challenges and standarts of the New Ukrainian School, and meet the dynamic societal demands. As a result, strong professional agency and the capacity for reflection form an autonomous, confident teacher committed to lifelong learning. Professional autonomy and psychological resilience can be fostered through different tools.

Supporting tools include Forest (for time management), Habitica, Notion (for self-development planning), WordPress / Medium (for reflective blogging), and professional networks such as British Council TeachingEnglish and Edutopia.

Conclusions and research perspectives. Theoretical analysis and conceptual modeling demonstrate that modernizing higher education requires a balanced integration of pedagogical, digital, ethical, social, and reflective elements. An innovative educational environment is far more than a collection of software or digital devices; it operates as an open, dynamic didactic ecosystem that supports professional, personal, and digital growth.

The proposed six-dimensional matrix provides a structured framework for HEIs. Combining these dimensions - *technological-digital, analytical-didactic, practice-methodological, ethical-axiological, socio-institutional, and career-reflective areas* - brings together personalized learning, data-driven pedagogy, immersive content, collaborative work, academic integrity, international collaboration, and career reflection. Integrating AI, adaptive software, and VR/AR tools deserves targeted attention in foreign language teacher education. These systems enable personalized learning paths, real-time feedback, automated progress tracking, immersive practice, and AI fluency. Crucially, technological integration must be backed by solid methodology, proper infrastructure, faculty development, data security, and clear ethical guidelines – ensuring technology remains a means to achieve meaningful learning outcomes rather than an end in itself.

Furthermore, this six-dimensional framework shifts the student's role from a

passive listener to an active creator, researcher, facilitator, and reflective practitioner. Through co-creating digital tasks, engaging in Action Research, participating in virtual exchanges, and building e-portfolios, students develop core methodological competencies alongside adaptability, creativity, and lifelong learning habits.

Putting this six-dimensional model of innovative educational environment for the training of future foreign language teachers into practice offers a clear path toward improving teacher education amidst ongoing digital transformation and internationalization.

Future research should focus on empirical testing of this model in real university settings, establishing measurable criteria for its effectiveness, and evaluating how AI, adaptive tools, and immersive platforms directly impact students' linguistic, pedagogical, and digital competencies.

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