https://doi.org/10.53656/ped2024-9.07

Research Insights
Изследователски проникновения

USING DIGITAL EDUCATIONAL TECHNOLOGIES TO PROMOTE INTERCULTURAL INTERACTION OF THE FUTURE ECONOMISTS IN THE EDUCATIONAL ENVIRONMENT

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Absract. The manuscript delineates the integration of digital technologies and intercultural interaction mechanisms within contemporary multicultural educational settings. The exemplification of the pivotal role and efficacy of these new technologies in the educational paradigm finds manifestation through a case study conducted at Ivan Franko National University of Lviv. Delving into the prospective utilization of these technological advancements for fostering intercultural interaction, the paper outlines the foundational principles guiding a research endeavour directed towards future economists studying English at the Economics faculty. The principal methodology employed is a comparative analysis, scrutinizing the learning dynamics across nine parallel groups, constituting a comprehensive sample of 350 students, over four semesters. The discernible outcome underscores that the amalgamation of digital technology with face-to-face interaction manifests a discernible enhancement in teaching efficacy in the educational environment.

Keywords: intercultural interaction; educational environment; digital educational technologies; Moodle; educational platforms

Introduction

The problem setting. In today's globalized world, effective cross-cultural communication is vital, with increased global mobility due to evolving politics and socio-economics (Romanowski 2017, pp. 6 – 7). Intercultural interaction, both globally and internationally, is now integral, facilitated by technological advancements like the Internet. Synchronous tools like Skype enhance real-time voice and video communication, fostering open attitudes, while asynchronous tools such as email and instant messaging aid in text-based communication, promoting intercultural knowledge

and awareness (Angelova & Zhao 2016). Online educational platforms enable students to interact, share ideas, and develop cultural competence, emphasizing the importance of interactivity in digital technologies and teaching practices (Moisejuk 2007, p. 638).

Thus, the ***aim*** of our research is to present current experiences of Ukrainian university teachers using digital technologies to facilitate intercultural interaction in educational settings and to develop digital and intercultural competencies of students. According to the objective of this paper, we provide the solution for the following fundamental tasks:

1) to clarify the content of the concepts of "interculturality", "learning environment", "educational technology";

2) to reveal the advantages and disadvantages of implementation of blended learning in the English Language classroom via Moodle platform;

3) to create and introduce an integrated E-learning course "Foreign Language (English)" (level B1) for the first- and second-year students of the Faculty of Economics, which contains a large number of test tasks, as well as video and communication and game simulations using the Internet;

4) to provide a set of communicative and game technologies, which contributed to the effectiveness of intercultural interaction of future economists;

5) to conduct a pedagogical experiment in Ivan Franko National University of Lviv.

The analysis of recent studies and publications. Recent literature reviews highlight the sustained interest in interculturality, particularly in the context of global mobility and current conflicts influencing refugee migration flows (Romanowski 2017, pp. 6 – 7). This ongoing research topic holds significant implications for the education system.

The term "intercultural" signifies interaction between different cultures, fostering reciprocal relationships and the potential for integration marked by political and cultural pluralism, aiming for mutual respect and appreciation (Romanowski 2017). In contemporary usage, "interculturality" refers to interactions within a society among diverse groups defined by culture, ethnicity, language, religion, or nationality (Dietz 2018). In education, two approaches exist: multicultural education, fostering acceptance or tolerance of other cultures, and intercultural education, seeking active coexistence and sustainable living through understanding, respect, and dialogue between cultural groups[1].

Examining higher education's response to interculturality, particularly through digital educational technologies, is crucial for our research. is a structured set of teaching methods employed by tutors in a scientifically-based sequence during classes, aligning with the chosen teaching approach (Romanowski 2017, pp. 12 – 13). Utilizing information communicative technologies (ICTs) in education promotes cultural exchange and understanding, fostering acceptance of diverse languages, traditions, and religions. The integration of digital technologies (DT) in the classroom enhances collaboration, facilitates skill development, and plays a vital role in fostering numerical competence, critical thinking, creativity, and intercultural awareness among students.

The informatization of the higher education system is one of the basic trends in the economic and social development of modern countries. According to the "Education.

Strategy of Ukraine 2030", universities should switch to digital learning models and develop digital transformation plans to ensure the competitiveness of education, research and economic activities at national and international levels (Abysova et al. 2023).

With Ivan Franko National University of Lviv transitioning to blended learning, there is a pressing demand for creating and adapting educational platforms, particularly in teaching foreign languages. Current trends in higher education underscore the priority of distance learning. Consequently, foreign language university educators need to adeptly apply scientific and technological advancements, foster creative improvements in the educational process, facilitate student personal development, and integrate the latest ICT tools.

Discussing the crucial role of digital literacy and IT competence, highlighted by Dotsenko & Prokopenko (2018, p. 18), underscores the importance of fostering these skills for effective teaching through digital technologies. Blended learning utilizes platforms like Zoom, Skype, and Microsoft Teams for flexible study options, while tools like Quizlet and Google Forms enhance interactive content creation and blogs, YouTube videos, and Slideshare serve as platforms for sharing achievements and presentations. Cloud resources, including Microsoft Azure AD and Google Drive, contribute to collaboration and accessibility in education (Istomina 2018; Karasiuk, Bakumenko et al. 2018).

Nowadays the potential of using e-learning platforms is considered from various perspectives. Scientists consider Moodle to be:

– *an essential component of distance and blended learning delivery* (Petrenko 2017; Pienkin & Yatsenko 2014);

– *a prerequisite for realizing the self-management ability of students* (Zhelezniakova & Zmiivska 2016);

– *a tool that provides information and communication support for the professional development process* (Myshchyshen 2011);

– *a way to simplify the educational process in higher education institutions* (Avdieiev 2015; Oproiu 2015);

– *a central aspect of the quality of professional training for future professionals* (Nedilko, Chumak, & Plachynda 2017);

– *e-learning platform that provides students' involvement in the global educational space and the development of lifelong learning skills* (Holotescu, Grosseck, Crețu & Naaji 2014).

In support of Ukrainian education during wartime, Udemy has offered over 12,500 online courses to higher educational institutions through the initiative of the Ministry of Education and Science of Ukraine. Institutions like Ivan Franko National University of Lviv utilize Microsoft Office 365, Google G Suite for Education, and Moodle v 3.3. to enhance distance learning and provide a variety of educational resources.

Moodle, an open-source PHP-based platform, facilitates online courses for broad accessibility and simultaneous training of numerous students. Complying with high

standards, Moodle is a robust solution for running various courses and exchanging instructional materials. Accessible from various locations with internet connectivity, it serves as a mature solution, extending beyond initial material sharing to include exams, teacher-student interaction, and student-student engagement[2].

The Department of Foreign Languages for Sciences found that students highly appreciate the Moodle system for its online accessibility of all materials. Lecturers are pleased with the user-friendly exam module, especially valuable for language teachers. Notably, Moodle's compatibility with mobile applications enhances its versatility.

According to Polhun, Kramarenko, et al. (2021), online platforms offer interactive learning with immediate feedback, providing flexibility for students. Babenko (2018) emphasizes benefits such as expanded access to materials and independent learning skills but acknowledges challenges like material adaptation and technical issues (Babenko 2018, pp. 8 – 9). Modern information technologies in education, driven by factors like increased information exchange speed and the need for adaptable systems, enhance university education and keep educators and students updated on scientific and technological advancements (Pozdnyakov 2013).

Procedure and research methods

To assess the effectiveness of our proposed methodology, a pedagogical experiment was conducted, comparing the knowledge, skills, and abilities of economics students in control and experimental groups. Employing general scientific methods such as analysis, synthesis, comparison, generalization, and empirical methods like observation, testing, and pedagogical experiments, the study unfolded in three stages: establishment, assessment of the motivational component of intercultural communication readiness, and control. The experiment involved nine pairs of study groups from Ivan Franko National University of Lviv, totalling 180 participants in the experimental groups and 170 participants in the control groups. Spanning two academic years (2021 – 2023), the experiment encompassed Ukrainian, Azerbaijani, and Turkmen students, exploring the impact of experimental training on intercultural interaction in the English language through digital educational technologies. A total of 350 first- and second-year students participated, organized into groups of 19 – 22 individuals each. The groups were divided as follows:

– The experimental groups (Eko-11, Ekp-12, Ekf-11, Ekf-12, Eko-21, Ekp-22, Ekf-21, Ekf-22, Ekf-23) underwent training using the integrated E-learning course "Foreign Language (English)" at level B1. The course, implemented via the Moodle platform, employed computer-oriented, networked, communicative, and game technologies, including free discussion, exercises like "In a circle," practical situations, brainstorming, and various others;

– Control groups (Ekm-12, Ekf-16, Ekf-17, Ekf-13, Ekf-14, Ekm-22, Ekf-26, Ekf-27, Ekf-24) were taught using the textbook "Complete first" provided by the curriculum, and traditional methods of teaching foreign languages at non-linguistic universities (grammar-translation, audio-visual, etc.).

The experimental training initially had similar foreign language proficiency levels in both groups. Post-experimental testing, using an integrated e-learning course, revealed improved intercultural communication skills in the experimental groups, outperforming those using only the "Complete First" textbook. The implementation of the integrated course positively affected operational and action components, enhancing intercultural communication skills, reflection, and self-improvement. It also influenced motivational components, fostering stable positive internal motivation and personal character traits, ultimately improving intercultural communication competence and practical skills in future specialists through digital technologies. Participation in the training allowed them to acquire specific behaviors and problem-solving strategies, gaining valuable intercultural experience.

Based on the works of Polhun, Kramarenko et al. (2021) and Babenko (2018), our practical classes emphasize stable group dynamics, group work principles, interpersonal relationships, active group methods, and effective digital technologies. Drawing from personal experience, promising active learning methods for tutors include discussion, brainstorming, role-playing, communication tasks, analytical exercises, presentations, simulations, and video demonstrations. The tutors at Ivan Franko National University of Lviv aimed to achieve key educational goals, such as enhancing perception skills, deepening self-responsibility, breaking role stereotypes, fostering open expression of feelings, promoting awareness of motives for intercultural communication, ensuring self-perception, facilitating active collaboration, and encouraging interpersonal openness.

Considering the principles of movement, space, and time, our training approach emphasized the cognitive, emotional, and conative aspects of personality. The cognitive aspect aimed at acquiring new information through research tasks in intercultural communication. The emotional aspect focused on personal significance, while the conative aspect expanded future economists' behavior awareness, discouraging ineffective approaches in intercultural communication.

The optimal professional development of future economic specialists involves increasing readiness for intercultural communication. Implemented through Moodle, our intercultural education includes an integrated e-learning course, "Foreign Language (English)," developed modularly based on the Concept of the content of education for the European dimension of Ukraine, incorporating critical thinking techniques and lesson plans for teaching with electronic educational resources.

To enhance understanding of the studied language's associated countries, the experimental group students were strongly encouraged to create presentations with national and cultural content. Azerbaijani and Turkmen students willingly shared intercultural insights, enabling Ukrainian students to gain deeper knowledge of their people's history, culture, and traditions.

Mastering English presentation skills and understanding cultural nuances is a dual challenge for students delivering speeches. Proficiency in both verbal and nonverbal

communication within a culture is crucial for effective intercultural communication. This learning not only imparts theoretical knowledge and practical skills but also enhances the operational and action component of intercultural communication readiness. Furthermore, it aids future specialists in shaping their professional stance, evolving interpersonal communication perspectives, refining personal traits, and reinforcing internal motivation in the realm of intercultural communication.

The training aimed to improve students' intercultural communication awareness, problem-solving skills, emotional regulation, and professional communication abilities. Our goal was to boost future economists' intercultural readiness, expand their professional knowledge, and develop practical communication skills, emphasizing consideration of individual characteristics, empathy, and emotional regulation. Interconnected sessions focused on practical study, fostering mutual trust, with exercises promoting cohesion and enhancing communication skills to address intercultural challenges using digital technologies.

Training incorporated diverse exercises like games, discussions, questionnaires, testing, and brainstorming, enabling participants to acquire practical intercultural communication skills. Microsoft Teams facilitated feedback at the end of each lesson, allowing participants to share impressions and suggestions in writing, enhancing both theoretical understanding and practical experience. Innovative digital teaching technologies were employed throughout the training to elevate the students' intercultural communication proficiency (Table 1).

The practical tasks undertaken by experimental groups involved simulating diverse intercultural communication scenarios. Students engaged in role-playing exercises, including conflict resolution situations with colleagues and clients, requiring them to choose appropriate communication forms. Each session concluded with a mandatory discussion, allowing future specialists to share impressions, motivations, and evaluations of their and their peers' actions. This approach developed observation, empathy, and compassion in aspiring economists. Acting out roles incongruent with personalities fostered understanding of others' perspectives. The positive psychological climate throughout the training promoted free expression, optimism, efficiency, and initiative, creating a friendly atmosphere that enhanced student engagement and overcame apathy and aggressiveness.

Our training methodology prioritizes the “here and now” principle, fostering understanding among participants through trusting interpersonal communication. Emphasizing the “personification of statements,” we develop students’ ability to avoid impersonal verb forms, encouraging the expression of personal perspectives using phrases like “I think,” “I believe,” “I consider,” etc.

In training sessions, our goal was to enhance self-awareness, critical thinking, and reflection in students. We prompted participants to identify reflective actions, assess their character traits, and clarify their attitudes through specially designed tasks, fostering deeper connections than everyday communication allows. The sessions

Table 1. Description of innovative training technologies used during the implementation of an integrated e-learning course "Foreign Language (English)" via Moodle platform

Title	Contents	Advantages	Disadvantages
Free discussion	The group members communicate with each other with or without the trainer, but the trainer's intervention is not necessary.	Each participant speaks in a free way about the issue of interest to him or her.	There may be a situation in which all participants in the discussion are speaking at the same time and expressing their opinions
Exercise. "In a circle"	Each participant speaks in turn, while the others listen attentively, and each member of the group has up to 2 minutes to speak.	Everyone is on an equal footing; by listening to others, everyone has the opportunity to express their own opinion.	It is not advisable to use in a large group because of the possibility of students losing interest in the problem.
Practical situation	The group considers a specific practical situation that requires certain behavior from its members.	It is possible to understand how a particular group of students looks at solving professional problems.	Acting out an emotional situation will have negative consequences for vulnerable group members.
Brain storming	The main purpose is to stimulate brain activity, creative and innovative potential of students to identify new ideas and solutions.	Only the most active and creative participants of the training are actively involved	Inactive participants take a neutral position and, therefore, do not participate in the search for new ideas and solutions to the situation
Crossroads	The group divides into subgroups to discuss the topic, later reconvening for a joint meeting to hear all opinions and summarize the results.	The ability to analyze the problem in depth, find out everyone's views and find the best solution; promotes better communication	There may be duplication of opinions and some pressure from active students.
Wheel	Discussion groups rotate between rooms every 10 minutes, with participants from different groups exchanging places in stages. A concluding general meeting is held, during which secretaries provide reports.	Active discussion involves a substantial contribution from numerous participants, with the secretary drawing conclusions to grasp a real picture of the discussed problem	There are certain difficulties for participants who move to new groups, who need to engage in the discussion in the new group as soon as possible.
Forum	Debates involve discussing a topic announced at the start with a corresponding video clip, inviting participants to share their opinions	The use of technology facilitates further discussion	Technical equipment sometimes fails, there is not always access to the Internet

Case study	Participants receive printed handouts detailing specific problem situations, where they express opinions and provide arguments	Different approaches to the situation and the need to take into account all opinions and views allows for a common understanding	It is quite difficult to reach a consensus when considering a case that is not typical and requires a non-standard solution
Phillips 6.6.	Suitable for a larger group of six people, this method involves individual members reporting the results of their respective six-minute discussions.	Stimulates participants to act and ensures that a wide range of opinions and positions are agreed upon; engages all participants in discussion.	The leader needs to ensure that all participants have the opportunity to speak and that those who are too active do not "block" those who are passive
Role play	Roles are assigned with clear expectations, providing participants opportunities to act and develop specific skills, followed by a discussion phase.	By playing a role, most participants dare to express what they would not dare to express in person	Participants may struggle to empathize or 'get into the role,' leading to uncontrolled behavior that complicates the process.
Briefing	Key elements include preparation, planning, defining purpose and goals, motivating participants, setting rules, determining roles and responsibilities, and selecting a group leader.	The teacher provides a scenario and encourages students to plan oral or written communication, stimulating them to define rules and choose a group leader.	Sometimes it is difficult to keep group members engaged and make sure that they do not deviate from the topic.
Simulation	Enabling free communication in small groups of three to four people, the simulation involves creating a realistic environment and ensuring clear perception of the communication situation, utilizing visual and technical aids for an immersive experience.	Its effectiveness relies on students' adherence to defined topics, compliance with simulation rules, and achieving communication goals through developed intercultural interactions.	Simulation technology is effective only for groups of students with intermediate, advanced, and autonomous levels of readiness for intercultural communication.

concluded with expressions of gratitude to encourage the development of traits like friendliness, sincerity, and compassion. This online course for experimental groups was purposefully structured, with the lecturer providing clear organization, explanations, instructions, and task oversight.

Results and discussion

Our focus is on analysing the indicators forming the motivational component of future economists' readiness for professional communication, including stable positive internal motivation and personal character traits. Through comprehensive testing, we assess the motivational sphere, determining the level of motivation for intercultural communication at both the initial and final stages of the experimental study. The pedagogical conditions in the experimental groups, such as incorporating information technologies, enhancing professional orientation, and utilizing pedagogical training

in English language teaching, significantly influenced the motivational component indicators. The experiment's results are summarized in Table 2 and Fig. 1.

Table 2. Dynamics of the motivational component forming of readiness for intercultural communication

Levels of readiness	**CG** *(CG (Ekm-12,Ekf-16, Ekf-17, Ekf-13, Ekf-14, Ekm-22, Ekf-26, Ekf-27, Ekf-24)*				**EG** *(Eko-11, Ekp-12, Ekf-11, Ekf-12, Eko-21, Ekp-22, Ekf-21, Ekf-22, Ekf-23)*			
	The experiment start		The experiment end		The experiment start		The experiment end	
	number of students	in %	number of students	in %	number of students	in %	number of students	in %
High	32	18,82	35	20,59	33	18,33	50	27,78
Medium	97	57,06	99	58,24	101	56,11	115	63,89
Low	41	24,12	36	21,18	46	25,56	15	8,33
Total	170	100	170	100	180	100	180	100

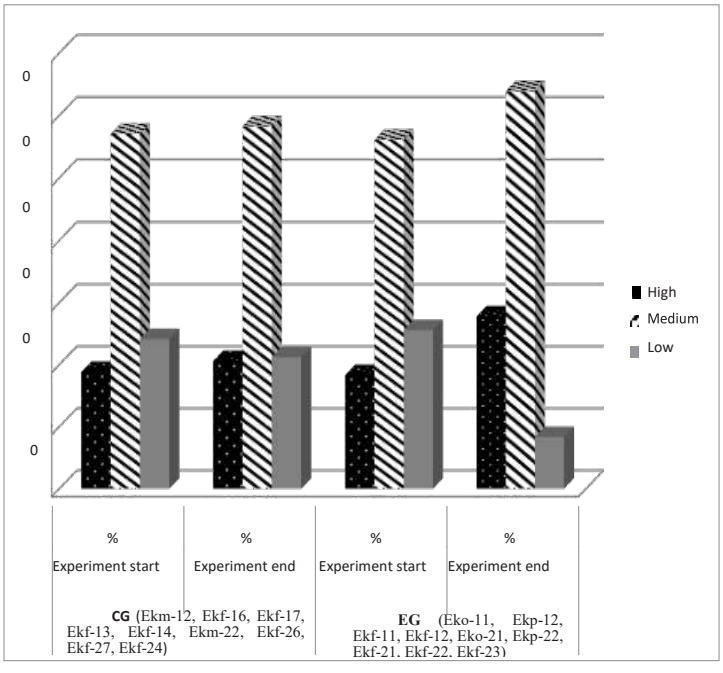

Figure 1. Dynamics of students' readiness of control and experimental groups for intercultural communication (motivational component)

The analysis of the outcomes presented in Table 2 and Fig. 1 provides a foundation for asserting that, during the initial phase of the experimental study, a heightened level of indicators contributing to the motivational facet of intercultural communication readiness manifested in merely 18.88% of students in the control groups and 18.33% in the experimental groups. Conversely, a diminished level of motivation was discerned in 24.12% of control group respondents and 25.56% in the experimental groups. Subsequent to the experimental intervention, the prevalence of students exhibiting a low motivational level in the experimental groups markedly decreased to 8.33%, in stark contrast to the control group where 21.18% still exhibited a low level of motivation.

Significant alterations in the number of students exhibiting a high level of motivational component indicators for intercultural communication readiness are noteworthy. Specifically, within the experimental group, the percentage elevated from 18.33% to 27.78%, showcasing notable improvement. In contrast, the control group exhibited less pronounced changes, starting at 18.82% and concluding at 20.59% by the experiment's end.

Conclusions and summary

The experimentation underscores the potential enhancement of educational quality and the facilitation of cultural exchange between students and faculty through the outlined processes. In essence, digital educational technology emerges as a conduit for fostering intercultural communication at the university. Real-world communication and experience-sharing with foreign students may pose challenges, but digital educational technologies transcend these limitations. They enable communication not only within one’s university but also with students worldwide, including those pursuing online education independently. Leveraging global Internet access and cutting-edge digital technologies, a global community emerges, fostering the exchange of knowledge, experience, and competencies across diverse fields. This interconnectedness facilitates rapid skill acquisition, thereby contributing to career advancement. The synthesis of innovative computer technologies with traditional teaching methods emerges as the most efficacious approach to mastering students’ intercultural communicative competence and specialized communication skills. The amalgamation of traditional and distance learning creates optimal conditions for university lecturers to attain learning objectives, optimizing both resources and time. Furthermore, the study identifies issues and proposes solutions, emphasizing the need to familiarize learners with communication tools. While this study addresses crucial aspects, it acknowledges the incomplete exploration of the scientific problem, suggesting future research avenues, particularly in understanding intercultural interactions among specialists from diverse fields and developing pertinent methodologies.

NOTES

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Acknowledgements

The authors gratefully acknowledge the first and second-year students of Economics faculty in Ivan Franko National University of Lviv (Ukraine) for taking part in this research.

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