

SECTION 6. PROFESSIONAL EDUCATION

DOI: 10.46299/ISG.2025.MONO.PED.3.6.1

6.1 Information educational environment (IEE) for the formation of vet students' foreign language competence

Abstract. The process of educational system informatization reflects the achieved level of all social processes organization and is important for many modern professions specialists training. The article necessitates the formation of IT use skills for future vocational education teachers (VET) language learning.

The creation of the "Foreign Language - Digital" training course which uses IT tools provides an opportunity to creatively process and present the materials for learning and its results. The IT and IEE potential allows such learning to be applied in various organizational forms and educational activities and be differentiated according to the foreign language competence initial level.

The authors systematize and describe some educational IT tools, which allow to perform not only purely linguistic (grammar, syntax etc.) but communicative functions, as well. Also the work makes a review of IT tools use for such educational activity as “translation”, which is important for future modern specialist skills training.

The authors consider the significance of the project method, namely communicative projects of collaborative learning, which allows working on students' future professional situations and problems.

Also the authors held a one-term length experiment on using information technologies at studying foreign language. The results of this experiment are represented in the diagram and statistical data analysis.

Key words: vocational education, language learning, formation of skills, IT tools, digital training course, IEE

Introduction. In today's world, informatization has become an important component of general culture development, reflecting the level of social processes organization. Closely linked to this is the informatization of educational process, which

not only equips students with essential knowledge relevant to many modern professions but also shows the significant humanitarian potential of all educational components [191]. This potential is demonstrated through cultivating a scientific worldview and developing analytical and creative thinking.

The idea of the work is to show how we can improve the educational process of foreign language learning. Our approach is that we need a special organization of the learning process and using such tools that enables the students to continue their studying in different environments.

Ukrainian scholars suggest that "the extensive integration of modern ICT tools in the educational process enables a substantial strengthening of the link between educational content and everyday life, addressing real-world needs." [192]

It is important to show that creating an educational environment that, alongside traditional means of presenting instructional material, can effectively engage with modern educational resources using IT, which allows application of various organizational formats and differentiation according to initial levels of foreign language competence, enabling it to be a subject of control, management, and design. We propose that the "Foreign Language - Digital" educational course, which incorporates hyperlinks to online resources (such as e-platforms, foreign textbooks, access to international projects, electronic dictionaries, and assessment tools) together with a list of digital tools to assist with tasks, fulfills the goal and allows to creatively process and present the learning outcomes.

Many foreign scientists fully support the idea of integrating IT into general learning process. Lupton, D., Mewburn, I., Thomson, P. in their book "The Digital Academic Critical Perspectives on Digital Technologies in Higher Education", stress that "using digital media and technologies as part of academic practice across teaching" should support pedagogy rather than drive it. [186]

Akram, H., Abderady, A.H. and Al-Adwan, A.S. highlight positive attitudes towards global integration of ICT, but emphasize the necessity of teacher training. [178] The same idea is supported by Sailer, M., Murbock, J., and Fischer, F., who underline that access to technology is just the beginning of the process of effective

learning. [184] What is important is student motivation, teacher preparation, and supportive institutional culture.

Shah, S.S. gives evidence that IT enhances student engagement and collaboration. [185] **Balykbayev, T., Bidaibekov, E., & Grinshkun, V.** examine how integrating IT concepts across different disciplines can improve teacher training programs and highlight cross-subject relations. [179]

The integration of information technologies (IT) in language learning is extensively explored in Ukrainian scholarly literature (A. Yankovets, Yu. Mashbyts, O. Skrypchenko, Ye. Polat, O. Khutorsky, and others). They discuss how e-learning platforms and tools can make instruction more interactive, visualize the process of language learning and stimulate problem-solving. Some important characteristics of these technological tools, emphasized by Ukrainian scholars, include:

- the ability to provide personalized education and predict student performance.
- the opportunity for creative, and research-based activities, which are highly motivational.
- free access to educational content and reliable storage of information that promotes stable feedback and cross-cultural communication of students.

That's why **Thelma, C. C., Sain, Z. H., & Mpolomoka, D. L.** focus on special curriculum frameworks for higher education, offering practical strategies for embedding IT in courses and aligning them with digital competencies. [187]

The researchers frequently emphasize the practical aspect of language learning and the important role of IT is reflected in enhancing its communicative potential, which makes it possible to create a structured, multi-level educational model that emphasizes the practical processing and learning of foreign language materials [181, 189].

In this work we are going to show that the practical design of the learning environment for a course focused on foreign language learning should begin with a clear definition of the fundamental didactic aspects and fostering an immersive learning experience that is engaging for students. Among these aspects, the instructional approach, modular, contextual, and activity-based strategies are the most

relevant. In addition, some principles from language teaching methodology for non-linguistic specialties must be integrated, particularly those that stimulates using information and digital technologies. These principles include:

- *Development of the motivational stage*: Cultivating a sense of motivation among students drives their engagement to learning and helps incorporate real-world applications of the language being studied.

- *Holistic view of language*: Language should be treated not as a list of separate topics but as an interconnected system. This point of view encourages learners to see the bigger picture in language use, fostering greater comprehension.

- *Selection of educational content*: Careful selection of educational materials volume is important, because it aligns with the students' needs and interests and is relevant to their professional fields.

- *Modeling the learning goals*: Designing a precise model of the learning goals emphasizes the development of professional skills and competencies that students can use in their future careers.

- *Adaptation of task level*: Tasks must be differentiated according to students' levels of English proficiency. This differentiation promotes accessibility and guarantees positive learning outcomes.

Another vital component in providing language proficiency is encouraging student participation in international collaborative learning projects. Such projects give valuable opportunities for students to communicate with their peers across different countries and cultures, enriching their foreign language learning experience [182, 183, 188]. The use of interactive online tools makes the learning process more engaging and helps students develop cross-cultural skills and teamwork abilities in a virtual environment, which encourages students to take a more active role in learning process.

On the technical side, selecting appropriate information technology and technological infrastructure for the educational process plays an important role. This choice comes from the specific advantages these technologies can offer within foreign language education.

Educational forms and methods such as online courses, online meetings, digital exams and assessments, simulators, training programs, and personalized learning are used to provide student education. Each of these components must be thoughtfully integrated into the structure of the learning course alongside the tools that support and facilitate the overall educational process.

When considering the variety of tools available for foreign language learning, it is essential to recognize their differing complexity levels. These tools range from straightforward communicative sources to more intricate mechanisms, including internet searches, specialized linguistic software (such as Hot Potatoes, De Luxe), and general computer applications like Excel and PowerPoint. A practical electronic training course should have both educational and methodological resources and provide a range of educational services to promote individual and group work. This can be achieved through the strategic use of IT and distance learning technologies under the guidance or consultation of an instructor.

Below is a brief overview of various IT tools that facilitate online cultural exchange, virtual interaction, network learning, and cross-cultural collaboration. (Refer to Table 1 for more details.)

Table 1. Digital Tools in Foreign Language Education

Title	Some Features
LearningApps	Service which allows creating interactive tasks;
Google Services	maps, presentations, Google Sites, Google Arts & Culture Apps etc.;
Padlet, Linoit, board.net, Edu.Pad, Pinnet, Milanote	Interactive boards;
Kahoot	Service for creating interactive exercises and tasks;
Wordart ,Wordle	Service for creation Word Clouds
Plickers [193], qrcoder	QR-codes generators

Continuation of table 1

ThingLink	Interactive marks for the texts and photo
YouTube	Watching thematic video and downloading students' works
Canva, Power Point	Visualisation services
Flinga [194]	Online environment for collaborative work: Brainstorm environment (Flinga Wall) Universal board (Flinga Whiteboard).
Ourboox	Electron books collection
Icograms 3D Map Designer [185]	AR environment
Futurio [196], Wisemapping.com [197], Mindmeister [198]	Mind mapping service
PhET	For interactive simulations
Glogster	For interactive presentations
Vocaroo	Voice recording, audio recording
eTandem [199]	Virtual interactive platform for searchin chat and language learning partners
Scrumlr.io [200]	Online tool for collaborative learning with real time information
Plickers [193]	Virtual polls and frontal checking at the lessons; current material tests

Some forms of learning activity can be intricate and involve using different IT tools while executing tasks. These include:

- Preparing multimedia presentations
- Creating student videos and podcasts
- Participating in interactive business simulations

- Researching and analyzing authentic professional materials
- Translating and presenting outcomes, etc.

Let us explore in greater detail the opportunities presented by IT and the Information and Educational Environment (IEE) in preparing future teachers of vocational training for activities such as translation, a common aspect of their educational and professional work [190]. Various ways exist to integrate computer technologies into the translation practices of future specialists in vocational education. Such translation is provided by a wide range of tools, from fairly simple to complex and can be incorporated into the "Foreign Language - Digital" training course structure (see Table 2). The technologies mentioned can be integrated into different learning activities and across various aspects of the learning process. This connection between learning and technology favours a more dynamic, flexible, and personalized teaching and learning experience, enhancing effectiveness.

Table 2. Information Technologies in Translation Activities

1. Machine Translation programs (MT)	analyze the input text and translate the target text without human intervention. With the correct organization of work, which includes the preliminary preparation of the initial text for machine translation (pre-editing), as well as the processing of machine translation (post-editing), the machine translation toolkit can be of some use, especially if the machine translation system is integrated with translation-memory of translations (PP) or globalization-management system (GMS) - a worldwide management system	Babel Fish [201], Babilon [202], and StarDict [203] - a "raw" translation that "gives the essence" of the source text, and DeepL - a more advanced version of the translation technique.
2. CAT technologies	a form of language translation in which a human translator uses computer software to support and facilitate the translation process	See below
Spell checkers	spell-checking tools that are either built into word processing software or exist as add-ons;	LanguageTool Scribbr QuillBot [204] etc
Grammar checkers	grammar checking tools, either built into your word processing software or add-on programs;	LanguageTool Scribbr QuillBot [204] etc

Continuation of table 2

Terminology managers	allow a human translator to create his own "terminological bank" in electronic form.	a table created in a word processing program or Excel, or a database of some programs, FileMaker Proor [205], LogiTerm [206], MultiTerm [207], TermX [208], etc.;
Terminology databases	terminological databases that are accessible from a host computer or via the Internet,	TERMIUM Plus [209] a6o Terminological Dictionaries
Full-text search tools	full-text search tools (or indexers) that allow the user to use already translated texts or reference documents of various kinds.	Such indicators as ISYS Search Software [210] DTSearch Desktop [211];
Concordancers	programs that search for a suitable word or expression and their immediate environment - context in a monolingual, bilingual or multilingual environment. Help a student studying a foreign language to become a researcher who opens up the possibilities of the Internet and ICT regardless of the chosen profession;	Such as – Sketch Engine Laurence Antony Website [212]
Bitext aligners	tools that align the source text and its translation, which can then be analyzed using other tools	GIZA The Berkeley Word Aligner [214] Anymalign [215]
Project management software	project management software that allows you to structure translation projects (and more), assign different tasks to different students, and track the progress of each of these tasks.	MONDAY.com [216] ClickUp [217] HubSpot [218] OpenProject [219]
Translation memory tools	translation memory tools (TM) consisting of a database of texts in the original language and their translations in one or more target languages.	OmegaT [220] SmartCat [221] Felix [222]
Electronic dictionaries/ Monolingual and bilingual	allow you to directly find the translation of a word, its compatibility with other words and correspondence to a particular topic	Collins Dictionary. Collins Google Dictionary. Urban Dictionary. Oxford Dictionary. Macmillan Online Dictionary. Cambridge Online Dictionary. Dictionary.com

Also except theoretical framework we consider it necessary to hold a small experiment to check the effectiveness of the training course *Foreign Language – Digital* usage in enhancing language learning and pedagogical competence among

vocational education students through the integration of digital tools. The objective was to evaluate how digital technologies support teaching practices, improve student engagement, and stimulate essential skills, which are crucial for future teachers of vocational education - creativity, communication, and critical thinking.

The experimental group consisted of 15 students enrolled in a vocational teacher training program of Design. All participants had approximately similar level of digital literacy and intermediate language proficiency (A2–B1 according to the CEFR). A control group of 15 students, following a traditional curriculum without digital enhancements, was used for comparative analysis.

The following procedure was engaged:

Over a 12-week semester (1st term), students in the experimental group participated in the *Foreign Language – Digital* course, which incorporated a range of IT tools and digital resources. Key activities included:

- Thematic multimedia lessons (videos, infographics, interactive slides)
- Real-life simulation tasks using professional digital tools (e.g., Google Workspace, Padlet, Canva)
- Technology-supported collaborative projects (e.g., cross-cultural presentations)
- Digital self-assessment tests and reflection interviews

Traditional lectures and textbook-based instruction continued for the control group, with minimal use of digital technologies.

During the first term all data were collected using quantitative and qualitative instruments.

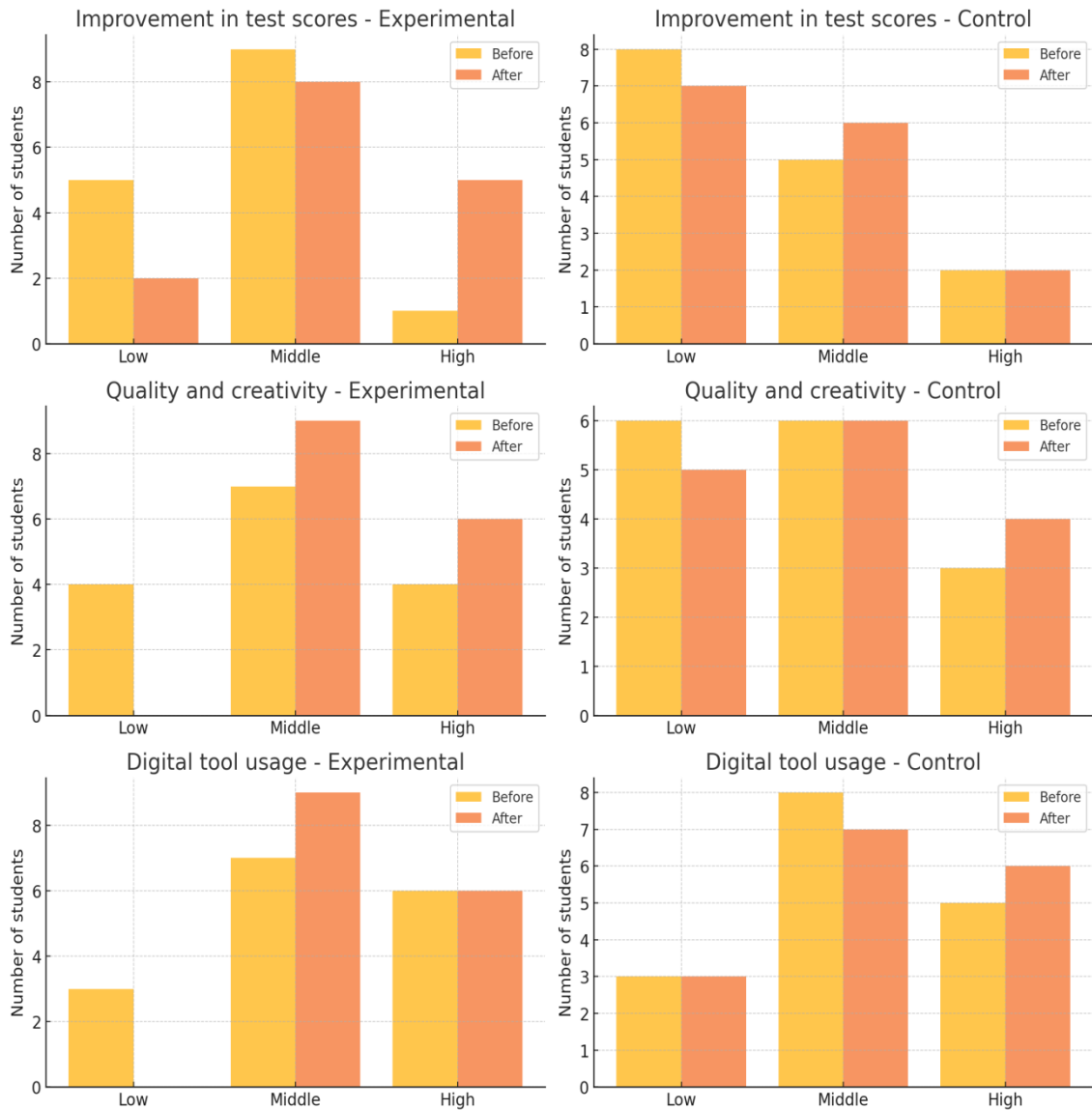
- The first included pre- and post-tests measured language proficiency, and digital communication. A standardized digital competence test was also administered.
- **The latter** concerned interviews and monthly reflective discussions. Our observations focused on classroom engagement, creativity, and use of digital tools.

The following evaluation criteria were used to mark the impact of the digital course using:

- Improvement in test scores (language and digital skills)

- Quality and creativity of student projects
- Frequency and effectiveness of digital tool usage

Experiment Results: Experimental vs Control Groups



If we summarize the data we can see that the experimental group shows clear improvement across all three criteria, while the control group remains mostly stable.

Data also were analyzed using statistical analysis instruments which compared pre- and post-test scores within groups and then evaluated differences between the experimental and control groups.

The results of statistical Pearson's Chi-Square tests before and after distribution show that the experimental group consistently has strong descriptive improvements, especially in test scores and project quality. (However, with only 15 students per group, the sample is quite small, so the statistical power is limited.)

Criteria	Improvement in test scores		Quality and creativity of projects		Digital tool usage		Overall Results
Experimental group	$\chi^2(2)$ = 4.01	p = 0.135	$\chi^2(2)$ = 4.65	p = 0.098	$\chi^2(2)$ = 3.22	p = 0.200	Not statistically significant and close to significance
Control group	$\chi^2(2)$ = 0.16	p = 0.924	$\chi^2(2)$ = 0.23	p = 0.890	$\chi^2(2)$ = 0.16	p = 0.924	No significant change

Conclusion. The training course "Foreign Language - Digital" using technology, supports and guides future teachers' educational process. Adapting traditional teaching methods to integrate this new digital approach effectively is essential nowadays and offers a lot of advantages:

1. It assists teachers in various classroom activities, such as introducing new topics, checking students' understanding, and wrapping up lessons.
2. It makes learning more dynamic with visuals, varied tasks, and supportive materials, enhancing the overall content.
3. It helps streamline lesson planning and preparation, making it easier to incorporate various learning activities.
4. It engages students in realistic professional scenarios using IT tools, improving their language skills and cross-cultural communication abilities in practical settings.

We can see that using IT tools relieves some of the routine work, allowing teachers and students to focus on more engaging and creative projects. That's why the accent for further studies should be on how exactly IT helps exploring ideas, and solving problems rather than just completing technical tasks and language evaluation tests.

Overall, technology has become a valuable resource, enriching the learning experience for both students and teachers, whether they are working online or in person. Integrating training course “Foreign Language – Digital” into educational process opens up new possibilities and makes teachers feel more confident in their teaching methods. The students also can benefit the integrating; our experience with students of vocational educational training has shown that being skilled in technology can significantly enhance how students learn languages. This helps students develop essential skills, boosts their curiosity, and fosters creativity, enriching their learning experience, their creative thinking.