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WEBQUESTS AS AN INNOVATIVE TECHNOLOGY FOR PROFESSIONALLY-ORIENTED FOREIGN LANGUAGE TEACHING

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The article methodically explores the potential for using webquest technology as an innovative means for professionally-oriented foreign language teaching in higher education institutions in the context of the digital transformation of education. The article substantiates the relevance of introducing webquest technology into the professional training of future specialists, given the actual need to develop foreign-language communicative competence, digital literacy, critical thinking and skills for independent learning and cognitive activity. Contemporary approaches to interpreting the concept of a webquest are analysed, and its didactic potential, structural components, implementation stages and specific features of its application into foreign language learning within the context of distance and blended approaches to learning are identified.

The specific features of implementing webquests into a digital academic environment based on the Moodle Learning Management System are identified, showcasing the system functional capabilities to facilitate interactive engagement between participants in the educational process, the use of multimedia resources, e-assessment of learning results, and the integration of internal and external digital services. The article highlights the prospects for using generative artificial intelligence, cloud services, and open online resources to widen the possibilities of professionally-oriented foreign language learning.

The article represents an original script for a career-oriented webquest entitled 'Professional Communication in Computer Science', in which a set of specific assignments are designed to utilise authentic English-language materials, professional terminology, role-play exercises, interactive tests and digital platforms, thereby fostering the development of practical skills in professional communication in a foreign language.

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The article demonstrates that the use of webquests increases learners' motivation to study, stimulates their cognitive activity, and contributes to the development of research skills, information literacy, the analysis and critical evaluation of information, likewise the effective use of a foreign language in typical situations encountered in future professional practice. The presented research certifies that the integration of webquest technology with modern digital platforms and artificial intelligence tools creates favourable conditions for implementing a competence-based approach, personalising the process of learning to improve the quality of professionally-oriented foreign language training for future specialists.

Keywords: *webquest, professionally-oriented learning, blended learning, foreign language, foreign language communicative competence, learning management systems, artificial intelligence, digital technologies, higher education institutions.*

ВЕБКВЕСТ ЯК ІННОВАЦІЙНА ТЕХНОЛОГІЯ ПРОФЕСІЙНО ОРІЄНТОВАНОГО НАВЧАННЯ ІНОЗЕМНИХ МОВ

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У статті досліджено можливості використання технології вебквесту як інноваційного засобу професійно орієнтованого навчання іноземних мов у закладах вищої освіти в умовах цифрової трансформації освіти. Обґрунтовано актуальність упровадження вебквест-технології у процес професійної підготовки майбутніх фахівців, що зумовлено необхідністю формування іншомовної комунікативної компетентності, цифрової грамотності, критичного мислення та навичок самостійної навчально-пізнавальної діяльності. Проаналізовано сучасні підходи до трактування поняття "вебквест", визначено його дидактичний потенціал, структурні компоненти, етапи реалізації та особливості застосування у вивченні іноземної мови в умовах дистанційного і змішаного навчання.

Визначено особливості інтеграції вебквестів у цифрове освітнє середовище на базі системи управління навчанням Moodle, функціональні можливості якої забезпечують організацію інтерактивної взаємодії між учасниками освітнього процесу, використання мультимедійних ресурсів, автоматизоване оцінювання результатів навчання та поєднання внутрішніх і зовнішніх цифрових сервісів. Висвітлено перспективи використання генеративного штучного інтелекту, хмарних сервісів і відкритих онлайн-ресурсів для розширення можливостей професійно орієнтованого навчання іноземної мови.

Представлено авторський сценарій професійно орієнтованого вебквесту "Professional Communication in Computer Science", виконання завдань якого передбачає використання автентичних англомовних матеріалів, професійної термінології, рольових вправ, інтерактивних тестів і цифрових платформ, що забезпечують формування практичних навичок професійної іншомовної комунікації.

Доведено, що використання вебквесту підвищує навчальну мотивацію здобувачів освіти, активізує їх пізнавальну діяльність, сприяє розвитку дослідницьких умінь, навичок роботи з інформаційними ресурсами, аналізу й критичного оцінювання інформації, а також ефективному застосовуванню іноземної мови в типових ситуаціях майбутньої професійної діяльності. Обґрунтовано, що інтеграція вебквест-технології із сучасними цифровими платформами та засобами штучного інтелекту створює сприятливі умови для реалізації компетентнісного підходу, індивідуалізації навчання та підвищення якості професійно орієнтованої іншомовної підготовки майбутніх фахівців.

Ключові слова: *вебквест, професійно орієнтоване навчання, змішане навчання, іноземна мова, іншомовна комунікативна компетентність, системи управління навчанням, штучний інтелект, цифрові технології, заклади вищої освіти.*

Introduction of the issue. At present the educational community in Ukraine faces a range of new challenges instigated by transformational processes in the education field, in particular a) the ongoing reform of the education system, b) the transition to a competence-based model of learning, c) the introduction of the new-generation national and European learning standards, as well as d) the need to rapidly adapt the educational process to the conditions of

distance and blended learning approaches brought about by the full-scale armed aggression.

Distance learning approach in Ukraine has gradually undergone through the phases of development and institutionalisation, which has contributed to the accumulation of substantial practical experience in its implementation at various levels of education. Meanwhile, it is precisely the force majeure crisis circumstances of the recent years that have led to the rise of various forms of distance learning, encompassing all levels of the education system. Educational institutions and their departments effectively integrate distance learning technologies into the organisation of the educational process, particularly during entrance examinations, final assessments and the organisation of part-time studying programmes.

Recently, a large number of higher education institutions in Ukraine have been operating in a blended format, combining classroom-based learning with intermittent use of distance learning technologies. Under such agenda and conditions, the challenge of ensuring the quality of education and the effective organisation of the educational process in the new environment is particularly critical for lecturers. The greatest difficulties arise while teaching practical subjects, as the development of communicative competence – particularly professional communication in a foreign language – largely depends on direct interaction between those involved in the educational process.

In this context, relevant research, aimed at identifying effective forms and methods for improving the quality of linguistic and professional training for higher education students in distance and blended learning environments, are of particular urgency.

An obvious positive practice in foreign language teaching is the current use of virtual learning environments (Edmodo, Canvas, Moodle, etc.), to create favourable conditions for fostering interaction between lecturers and students, interaction and collaboration, and help higher education students develop skills for working in a digital environment as well as to adapt to online learning format.

Learning management systems, in particular Moodle, are becoming the core digital platforms widely used in the educational process; their functional capabilities allow for the organisation of synch and asynch cooperation, the sharing of learning materials, the integration of multimedia resources, and the use of external digital services, including video and audio materials, podcasts, and interactive learning resources.

Modern foreign language teaching methods focus on active and interactive technologies that ensure a high level of independence for learners, the development of creative thinking, and the ability to apply knowledge to practice. One such technology is the webquest, which combines the benefits of project-based and problem-based learning, digital technologies and research activities.

Webquests take on particular significance against the backdrop of the rapid development of generative artificial intelligence. AI tools (ChatGPT, Microsoft Copilot, Google Gemini, Claude, etc.) open up new possibilities for information search-browsing, language practice, auto-generated feedback and the creation of educational content. At the same time, their application requires the development of critical thinking, information literacy and academic integrity, making the webquest an effective educational model for integrating digital tools into professionally-oriented learning. Recent research show that combining webquests with generative AI promotes a more critical analysis of information and the development of digital literacy among students of language subjects [1].

Current state of the issue. Within the framework of up-to-date domestic and international scientific and methodological research, considerable attention has been paid to the realisation of interactive learning technologies, in

particular, webquests, which are implemented on the basis of learning management systems and incentivise learners' cognitive activity, the development of their self-sufficiency and the formation of professionally-oriented competences.

The theoretical and methodological foundations for the implementation of webquest technology in the educational process are reflected in the works of such international researchers as: Bernie Dodge and Tom March, who established the conceptual foundations of webquest technology, defined its structure, didactic principles and potential applications in the development of learners' research skills and critical thinking [2; 3]; Laurence E. Lynn and Hans H. Stern, who regarded webquests as an effective means of organising problem-based learning, developing information literacy and fostering skills in the independent use of digital resources [4; 5]; Theodore S. Rogers, who emphasised the use of webquests to enhance motivation for learning, develop teamwork and promote communicative interaction among participants in the educational process [6].

Ukraine-related academia, the following researchers have made significant contributions to the study of the issue: T. Bondarenko, who explored the methodological features of using webquests in the professional training of future specialists [7]; O. Gapeeva, who investigated the potential of webquests in fostering cognitive activity among learners [8]; N. Shcherba, who examined webquests as a means of preparing future English language teachers for work in an inclusive educational environment [9]; M. Suprun, who identified the specific features of using webquests in foreign language lessons [10]; and others.

Outline of unresolved issues brought up in the article. Analysing the contemporary academic studies within the aforementioned webquest framework it has been evident that researchers have predominantly been focused on the theoretical foundations of the webquest technology, its structure, didactic potential and general methodological aspects of its use in the professional training of future specialists. At the same time, several issues related to the methodology of using webquests remain insufficiently researched, specifically: in the process of foreign language teaching within the context of modern digital educational environment, and the integration of generative artificial intelligence, cloud services and mobile digital platforms into the structure of webquests. The issue of assessing their impact on the development of learners' foreign-language communicative and digital competences also requires further study.

The **aim of research** is to provide a theoretical basis and methodological overview of the use of webquests as an innovative technology for professionally-oriented foreign language teaching in higher education institutions, as well as to identify the specific features of their implementation into the modern digital educational environment, particularly, using the Moodle learning management system.

To achieve the aforementioned aim, several objectives were systematically explored and completed: an analysis and synthesis of the psychological and pedagogical literature on the research topic; the didactic potential of webquests in developing learners' foreign-language communicative and digital competences; practical experience of applying webquest technology in foreign language teaching; a carrying out of a scenario for a professionally-oriented webquest based on Moodle; and an analysis of the possibilities for applying AI, cloud services and mobile digital platforms within the structure of webquest assignments.

The following **research methods** were employed during the research: analysis and synthesis of academic sources on the research topic; analysis of practical experience in applying webquest technology; and modelling of situations involving cross-cultural professional communication.

Results and discussion. The use of computers in education is by no means a new phenomenon, and distance learning methods have been used by foreign language teachers to a greater or lesser extent for quite a while. The rapid development of digital technologies and the virtually ubiquitous spread of the Internet have opened up vast opportunities for creating a foreign-language information and educational environment.

Currently, there is an ample number of open-access resources providing availability of authentic text, audio and video materials which can be universally integrated into the educational process. Some organisations, educational institutions, teachers and educators launch specialised websites for online learning, including foreign languages. The opportunity to read foreign newspapers and magazines, watch foreign films, correspond and communicate in a foreign language with colleagues on various forums also creates favourable conditions for the formation and development of foreign-language communicative competence. Professionally-oriented journals and blogs enable learners to familiarise themselves with the relevant achievements of foreign academia in a particular field.

However, the full range of available resources is primarily geared towards the development of communicative and sociocultural competence, whilst the progress of professionally-oriented foreign language training remains insufficiently supported by the subject-specific teaching materials. In this regard, the issue of selection and adaptation of educational content for various fields of professional training becomes particularly relevant, more specifically the issue deals with technical, economic, legal and departmental specialties and disciplines, where foreign-language communication is based on the use of highly specialised terminology and strictly defined professional discourses. Within such educational programmes, the teaching of a foreign language for specific purposes requires consideration not only of general linguistic principles but also of the specific lexical and semantic strata, inherent in the relevant professional field, which makes the process of developing high-quality teaching and learning materials considerably elaborate and requires the focused adaptation of content in line with the professional needs of learners.

Contextually, the search for effective means to organise professionally-oriented foreign language teaching necessitates the use of innovative educational technologies eligible for combining work with digital resources, problem-based learning and the development of learners' research skills, given the limited approachability of authentic materials and the need to simulate actual professional situations. One such technology, which has already become widely used in modern teaching practice, is a webquest.

The didactic potential of a webquest lies in modelling conditions for students' active cognitive engagement. Through drilling and completing tasks, students search for, analyse and synthesise information, which fosters the development of critical thinking and information literacy. At the same time, the collaborative nature of the work develops skills in cooperation and communicative interaction.

In professionally-oriented foreign language teaching, webquests allow for the simulation of future professional scenarios, which boost students' motivation and ensure the practical focus of the educational process. Webquests integrated into digital learning platforms are particularly effective, as they provide access to multimedia resources, online communication and e-assessment.

A webquest is one of the innovative technologies, but it has already been quite popular in modern education. At the end of the 20th century, B. Dodge and T. March, who are accurately regarded as the founders of this method, defined a webquest as a type of activity aimed at searching for information on the Internet, enabling students to acquire new knowledge [11]. Currently, various

definitions of the webquest have been suggested, some details its functions and content, whilst others emphasise its universal nature.

Webquests are regarded as an innovative form of organising an interactive educational environment, ensuring the effective use of Internet resources in the educational process [12]. Its didactic significance is manifested in a combination of problem-based learning with elements of role-play and project-based activities to help stimulate the cognitive activity of learners.

In educational (pedagogical) practice, a webquest is defined as a problem-based task, which involves the purposeful exploration of online information resources to achieve a learning objective [13].

As an effective means for developing learners' research skills and digital competence, a webquest is regarded as a framework for organising project-based activities for pupils or students on a specific educational topic, involving the step-by-step completion of tasks, division of roles and the presentation of results in a structured format [14].

Consequently, in the context of using webquests when studying a foreign language, the key concepts are as follows: an interactive learning environment, authentic online resources in a foreign language, communication-oriented and problem-based tasks, role-play interaction, project-based activities, foreign-language communicative competence, independent search and research work, analysis and interpretation of information in a foreign language, and the development of learners' digital and linguistic competences.

The growing interest among researchers and practising teachers in using this technology is explained by a whole range of its advantages, namely the link between the educational process and real life and future professional activity, the expansion and solidification of interdisciplinary connections, and the focus on a specific practical outcome in the learning process. This technology enables the organisation of autonomous learning activities, encouraging self-education and self-development, whilst at the same time allowing for remote supervision.

Webquests are a smart way of engaging learners in the educational process through research in a guided, meaningful form. A webquest is usually based on a problem-based task that develops skills in individual and group work, as well as critical and creative thinking. The ability to analyse and process information, and to make expert decisions, is becoming far more important in the world today rather than simply memorising pre-determined content. Webquests enable students to explore issues and find unique answers for the purpose of revealing their personal and creative potential.

In the context of foreign language learning, webquests are regarded as an effective method for organising educational and research activities, ensuring the integration of language practice with various types of problem-based and communicative tasks. In particular, the latter include retelling, planning and designing, self-awareness, compilation, creative and analytical activities, solving detective and puzzle-based scenarios, reaching consensus, journalistic investigation, persuasion, and scholarly research, which are aimed at stimulating learners' foreign-language speaking activities, developing critical thinking and fostering communicative competence.

The structure of the webquest is logically organised and functionally determined. It involves the consecutive implementation of several stages of learning activities that ensure the achievement of the educational objective.

The introductory section serves to motivate learners and immerses them in the problem situation. The core task defines the key learning problem and provides guidelines for its solution. The description of the implementation process details the stages of work, the sequence of actions and the distribution of roles among participants.

An important component is the list of information resources, which provides access to relevant sources of information, predominantly digital in nature. Advice, explanations and tips serve a supportive function, facilitating the effective completion of tasks and overcoming difficulties.

The assessment criteria define a transparent objective system for measuring the results of learning activities, the level of competence development and the quality of the completed tasks. The final stage is the conclusion, which summarises the overall outcome of the work, encourages self-monitoring and raises awareness of the learning results achieved.

Work on a webquest should be viewed as a structured organisation of learners' educational and research activities, combining individual and team interaction and comprising the following stages: initial, role-play and final.

The initial (team-based) stage involves familiarising participants with the webquest task and providing them with basic information on the research topic. At this stage, teams are formed and roles are distributed to determine the subsequent course of the task completion.

The role-play (individual-based) stage is characterised by participants working independently in accordance with their assigned roles. The learners' activities include searching for and selecting information, developing the structure of the forthcoming report, creating and further refining learning materials, which ensure the gradual development of the final outcome.

The final (team-based) stage involves the synthesis and integration of the results achieved under the supervision of the teacher. At this stage, final conclusions are drawn, presentations and a competition of projects are held, including their assessment; the results may also be published online, which reinforces their public and communicative nature.

We fully agree with researchers who state that the webquest technology can be used in the teaching of various disciplines and in the implementation of different approaches [15]. The main methodological principles and educational conditions for the effective application of this technology in foreign language teaching are described. Based on the suggested draft model, we have developed a comprehensive, professionally-oriented webquest, which involves learners solving several communicative tasks in various situations of professional communication in a foreign language.

To develop the quest on the Moodle platform, the interactive 'Lecture' tab [16] is used, as it allows users to combine information pages and various types of tasks, embed video clips, follow links on the internet, and track statistics.

The quest was developed on the framework initiated by B. Dodge, which includes the following components:

1. *Introduction*: the presentation of the theme and scenario of the 'Professional Communication in Computer Science' quest, which familiarises learners with specific situations encountered in professional practice. The introduction also outlines the outcome of the work as the final product – the completion of a set of communicative tasks in English (for example, creating a technical description of a software module, writing a user story, participating in a "client–developer" role-play, and drafting brief technical documentation). A particular emphasis is given to the strategies for completing the tasks: the use of professional vocabulary (IT terminology), the development of academic and professional writing skills, and the integration of language activities. Whilst working on the quest, students tackle tasks related to their future professional careers.

2. The *Resources* combine links to websites and online sources required to complete the tasks posted on Moodle, likewise the external authentic resources: technical documentation (API documentation), professional platforms for developers (GitHub, Stack Overflow), IT-related video materials in English, and interactive exercises to develop terminological competence.

3. *Assessment*: during the quest, the results of learning activities are measured, as reflected in the number of scores earned by learners for the tasks completed.

4. *Conclusion*: the work results are summarised, and the total number of points earned determines the final mark.

The quest has been designed to be individualised and professionally-oriented while simultaneously aimed at providing an essential experience of performing the duties of a specialist in the field of computer science, encouraging students to engage in independent analytical and creative thinking. It fosters the development of skills in using English in typical professional situations within the IT specialty, particularly in the context of teamwork, the technical description of solutions and the resolution of problem-solving tasks.

In each of the scenarios presented in the quest, participants must complete several tasks, and they are free to decide the order in which to address them. As the tasks vary in difficulty, the number of points awarded for each task differs. The variety of exercises, therefore, makes the learning process more dynamic.

The first scenario in the quest involves communication in the context of a specific requirements discussion. Students are offered to watch a video in English on the software development life cycle (SDLC), available in the 'Resources' tab on Moodle, and then complete test tasks to assess their understanding of technical vocabulary (multiple choice, matching terms, true/false statements).

The next stage is a linguistic and transformational exercise: paraphrasing technical descriptions (for example, 'user requirements') into clear English sentences format using software engineering terminology. Additionally, a situational task is carried out – writing a short 'developer–client' dialogue in which the requirements for the software product are clarified.

The second scenario involves teamwork on an IT project (team collaboration). Students complete interactive exercises to understand professional communication within a development team (agile environment, task assignment, sprint planning). The tasks of a corresponding complexity are used to match utterances in professional dialogue with their communicative functions (agreeing, clarifying, suggesting, reporting issues).

This is followed by a creative language exercise – to compose a short message in English in the format of a "commit message" or "task update" (for example, 'Fix login bug', 'Implement API endpoint'), which reflects real-life IT communication.

The third situation is a user technical support scenario. Students complete tasks involving interpretation of a user enquiries in English and formulate responses and explanations using simple, professional language.

There is also a task involving writing user guide steps to resolve typical issues related to software or web applications.

Conclusions and research perspectives. Overall, the webquest has proved to be an effective form of interim form of assessment and control. This innovative technology has made it possible to address a very important task – to assess not merely the extent of learners' knowledge, but their ability to apply it in practice. Using a webquest at foreign language lessons evidently makes the work more dynamic and avoids the monotony of traditional methods, which is undoubtedly a motivating factor in the process of learning any subject. Webquest technology can be applied both in full-time and part-time (distance) learning. Furthermore, it enables the teacher to use classroom sessions and the time allocated for independent study more efficiently, thereby allowing for a more personalised learning process. For example, students with a lower level of foreign language proficiency can consult additional online resources (dictionaries or encyclopaedias) to understand unfamiliar content. The use of this innovative technology is particularly effective in non-language-specialist higher education institutions, as it enhances the practical focus of lessons. Logically, the use of webquests in the educational process contributes to the development of future specialists' foreign-language communicative competence in their professional field.

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