

СЕКЦІЯ 6. ШТУЧНИЙ ІНТЕЛЕКТ У ПАРАДИГМІ СУЧАСНОЇ ОСВІТИ

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TECHNOLOGY FOR USING ARTIFICIAL INTELLIGENCE TOOLS TO OVERCOME TEACHERS' TECHNICAL BARRIERS IN A MOODLE COURSE DESIGN

The current stage of educational development is characterized by rapid digitalization, which is transforming the requirements for teachers' professional activities. These processes became especially relevant during the COVID-19 pandemic and the full-scale invasion of Ukraine, when digital competencies became a necessary condition for ensuring the continuity of the educational process.

At the same time, a significant number of teachers in the social sciences and humanities lack specialized technical training, which complicates the creation of interactive, visually structured educational content. In this context, artificial intelligence tools, including ChatGPT, Gemini, Claude, NotebookLM, as well as the Canva and Gamma platforms, can serve as means of compensating for teachers' technical limitations.

The rapid development of generative artificial intelligence and its integration into education are actively being studied internationally. In particular, the UNESCO report emphasizes AI's potential to support teachers and personalize learning [1]. Kasneci et al. note that large language models can function as teacher support tools; however, they require critical pedagogical supervision [2].

This study aims to analyze the potential of artificial intelligence tools to compensate for teachers' technical limitations in the social sciences and humanities, based on empirical experience developing an electronic course in the Moodle system.

The modern digital learning environment is focused not only on information delivery but also on creating a comfortable user experience. In this context, the combination of UX design (the logic of user interaction with content) and UI design (the visual organization of the interface) becomes especially important. The effectiveness of learning depends not only on the content itself but also on the way the material is structured, navigated, and visually presented.

According to cognitive load theory, excessively complex or poorly structured presentations of information complicate the process of knowledge acquisition, whereas the combination of visual and auditory channels enhances learning efficiency [3]. Such approaches are particularly relevant for modern learners who are oriented toward multimedia and interactive formats of information presentation.

Under these conditions, the role of instructional design is increasing. Instructional design involves creating a coherent logic of student interaction with content, including structure, visualization, and interactivity. Artificial intelligence tools enable these approaches even without advanced technical skills.

One of the key areas of empirical experience was the use of HTML to expand Moodle's functional capabilities [4]. The use of HTML enables the creation of structured content blocks, responsive tables, hidden elements (accordion/toggle), and visually organized learning modules.

Modern generative models significantly reduce the technical barrier to working with HTML. In practice, a prompt-based approach was used, in which the teacher formulated a clear pedagogical request to the artificial intelligence system, defining the structure, logic, and design of the future

element. For example, there are specified requirements for creating tables, accordion structures, color schemes, contrast levels, and navigation features. Based on these parameters, generative models produced ready-made HTML code for further integration into Moodle.

This approach allows the teacher to be viewed not as a programmer, but as a designer of the learning environment who, through a system of prompts, shapes the structure and logic of digital content. Additionally, empirical observations demonstrated that the created HTML content can be edited directly in Moodle's text mode without disrupting its design, thereby ensuring flexibility in updating materials.

An important stage is testing the solutions created. Initially, HTML elements are checked by the course author and subsequently tested by fellow teachers. Such an approach allows evaluating not only technical correctness but also the pedagogical appropriateness and usability of the materials.

Further development of the digital learning environment involves transitioning from static information presentation to multimedia formats. In practice, we tested an approach to transforming traditional text-based material into a multimedia educational product.

At the first stage, ChatGPT was used to draft the script for an educational video and to adapt the material's structure to didactic goals. Further implementation was carried out in the Canva environment, enabling the combination of textual, graphical, and animated elements. The use of AI voice technology enabled the narration of educational material without requiring additional resources.

A separate empirical observation concerned the use of different types of voice narration — British and American English variants, as well as male and female voices. This option enables the simulation of more realistic communicative situations and expands the possibilities of foreign language teaching.

At the same time, creating a high-quality multimedia product requires significant time investment and mastery of multiple digital tools. However, the result is an original educational product developed by the teacher that fully corresponds to the curriculum and can be edited and reused in the future.

An important continuation of this process was the integration of video content into the knowledge assessment system using H5P in Moodle. The practice enables the embedding of testing elements directly into educational content, ensuring immediate feedback and increasing student engagement.

During implementation, students provided positive feedback. They noted increased interest in the educational material, driven by video presentations, interactive tests, and visually structured content. In addition, the use of well-designed digital materials contributed to the development of students' own presentation design skills and digital literacy.

Thus, the results of the empirical study indicate that artificial intelligence tools enable teachers in the social sciences and humanities to overcome technical limitations and expand their opportunities to create a modern digital learning environment. The combination of HTML structuring, multimedia content, UX/UI approaches, and interactive elements forms a new model for organizing the educational process, in which artificial intelligence acts not as a replacement for the teacher, but as a tool supporting their professional activity.

References

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