Розділ 1. ІМЕРСИВНІ ТЕХНОЛОГІЇ В ОСВІТНЬОМУ ПРОЦЕСІ

Chapter 1. IMMERSIVE TECHNOLOGIES IN THE EDUCATIONAL PROCESS

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THE USE OF IMMERSIVE TECHNOLOGIES WHILE MARITIME ENGLISH TEACHING

The profession of a seafarer is very relevant and popular in Ukraine. This is very important for the development of the state's economy. Maritime education should ensure high-quality training of future graduates. Improving the national maritime education system meets the requirements and standards of the IMO.

Information and communication technologies are actively used in the modern educational space. Today, digitalization helps teachers and educational institutions to diversify the educational process. Using a mobile application as an innovative tool helps to improve lecture material. This is useful during practical and independent work, for comprehensive preparation for completing test tasks. Preparation for passing the MARLINS and CES tests. They have become extremely relevant during distance, blended learning. Teachers actively use innovative technologies in classes, use Zoom for conducting lessons and the Moodle electronic system for independent processing and passing module tests [1].

Our institution has the potential to train high-level specialists. For successful management, a modern naval officer must possess a number of competencies. The formation and development of communication skills is especially important in the work of a multinational crew.

Modern technologies give us effective instruments for reaching teaching purposes. Among other things immersive technologies are used to provide

experimental and learning opportunities. Digital immersive technology offers students an immersive and interactive learning environment that can boost motivation, engagement, and memory recall [2]. It's useful for learners to receive immediate feedback and personalized learning path while using digital immersive technologies. And during such method of teaching the most necessary task is solved, namely critical thinking which is an essential skill that enables learners to analyze, evaluate, synthesize information, and make informed decisions and judgments [3]. Immersive technologies can improve critical thinking through practice of the problem-solving, reflecting and making decisions. And these activities are key activities in conjunction with authentic materials from maritime sphere. During studying students draw information from manuals, textbooks and coursebooks but in such case students form partial understanding of abstract concepts. The advantage of using the immersive technologies is that students can practice virtually such real-life situations which can be connected with risk, be dangerous for life and can't be so easily practice for receiving experience in real life on board.

Immersive technologies include virtual reality (VR), augmented reality (AR), mixed reality (MR), extended reality (XR), 360-degree videos, and haptic technology. Each of them proposes unique opportunities for learning and interaction with the digital world. Virtual reality allows students to interact with active processes of working day onboard and overcome the difficulties which can arise during classical training when it's impossible to combine theoretical knowledge and practical skills. Augmented reality assists in expending of topic with supplementary information which makes learning process more engaging and realistic [4]. The mixed reality intersects real life and digital content. Mixed reality users can interact with and modify both real and simulated objects and settings by using innovative sensing and imaging technology [5]. Extended reality is general term which includes virtual reality, augmented reality and mixed reality technologies. 360-degree video is immersive film using virtual reality for eliciting empathy and emotional identification in fact-based stories. Unlike traditional flat film, immersive films allow viewers to look in any direction while watching the video. Haptic technology can create experience of touch by applying forces, vibrations and motions to users.

Certainly, it's difficult to integrate such technologies in educational process because technological complexity and high cost that will be serious challenge for educational establishment to cope with. But wide range of these technologies offers the flexibility to choose the most appropriate solution. Another problem is that immersive technologies not only are developed rapidly but transform educational landscape. And when students became more familiar with immersive tools teachers must keep up to ensure the effectiveness of using into the curriculum. Teachers need proper qualifications to work with such type of technologies that require certain amount of studying hours for teacher. But rapid advancement of these tools requires continuous professional development that can be hardly accomplished in case of busy studying schedule.

This research aims to analyze usage of immersive technologies during teaching of Maritime English for ship's engineers and evaluate the result of implementing of

immersive technologies in studying process. The exploration of various immersive tools will focus on their effectiveness in enhancing language proficiency. By assessing students' performance and feedback, the study will determine best practices for optimizing immersive learning in Maritime English education training program.

As the examples of immersive technologies, we can name Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), Extended Reality (360-degree videos, holograms), etc. The most common technologies used for teaching Maritime English are AR, VR and 360-degree video.

AR applications such as Quiver make it possible to "animate" graphic objects in three spatial dimensions (3D). It can be used for learning new words, as well as for motivation to learn a language, develop creative abilities, etc. Google Lens allows to use smartphone's camera to translate text in real time, showing the translation on the screen. Blippar is a universal AR app that allows students to create their own AR projects or use ready-made ones. Catchy Words AR is an augmented reality game that allows students to improve language skills. It can be used to learn new vocabulary, spelling, etc. Wonder-scope transforms reading into an augmented reality experience, which involves reading interactive stories, communicating with characters, etc. It is suitable for developing students' speaking skills while learning a foreign language [1].

Using such interactive technologies, students can have a sense of presence in a virtual environment in real time. These technologies allow deeper immersion into the language environment for successful language acquisition and enable users to remain engaged in the real-world learning environment. Such an environment is enriched with interactive elements and allows for individual, pair and group learning activities. Considering the goals of the lesson and the age category of the students, it is advisable to select an AR application and the available equipment [6].

Ukrainian seafarers are in demand on the global maritime labor market. The maritime education system prepares highly qualified and competitive seafarers whose qualification level meets global standards.

The perspective of future research can be seen in the further analysis of the use of immersive technologies in English for professional purposes, namely for ship engineers.

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GAMIFICATION THROUGH IMMERSIVE TECHNOLOGIES: STIMULATING CREATIVITY AND CRITICAL THINKING IN STEM/STEAM

Problem Statement. In the contemporary world of education, especially in STEM/STEAM fields, traditional teaching methods often fail to meet the demands of a rapidly changing technological landscape. Conventional approaches, which rely on passive information absorption, do not always stimulate the creativity, critical thinking, and innovation required for preparing future professionals.

Gamification combined with immersive technologies (such as virtual reality, augmented reality, and simulation platforms) offers the potential to create an interactive and engaging educational environment. Such an environment can inspire students to undertake independent exploration, develop creative thinking, and apply theoretical knowledge in practical contexts. However, despite numerous isolated examples of successful integration, the overall adoption of these innovative technologies faces several challenges.

Firstly, the theoretical framework for integrating gamification and immersive technologies into the learning process is fragmented, and there is no unified model that addresses all aspects of fostering creativity and critical thinking.