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**«E-LEARNING» AS AN INNOVATIVE METHOD FOR TRAINING FUTURE  
WATER TRANSPORT SPECIALISTS**

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**КЛЮЧОВІ СЛОВА:**

електронне навчання,  
метод підготовки,  
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фахівці водного  
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управління освітою.

**Реферат**

У статті описується електронне навчання, як інноваційний метод для підготовки фахівців водного транспорту. Описується його важливість як допоміжний і невідемний інструмент для навчання у вищих та професійних навчальних закладах не лише України, а й світу.

У статті вказується, що в останні роки, електронне навчання стало невід'ємною частиною навчального процесу у вищих навчальних закладах і використовується у всіх формах освіти. Використання електронного навчання може поліпшити якість освіти, використовуючи поточні глобальні освітні ресурси і до того ж вони використовують елементи електронного навчання і дистанційної освіти.

Електронне навчання розглядається з точки зору використання електронних навчальних засобів для різних цілей навчання, які варіюються від додаткових функцій в звичайних класах до повної заміни безпосередніх зустрічей на онлайн-зустрічі, а саме:

- використання електронних технологій для забезпечення освітніх та навчальних програм;

- надання освіти за допомогою всіх електронних засобів та засобів масової інформації;

- навчання на основі інформаційно-комунікаційних технологій (ІКТ) для педагогічної взаємодії студентів і навчальних програм, використовуючи доступ у мережу Інтернет.

Автор статті зазначає, що сучасні педагогічні технології, і в більшій мірі, технології електронного навчання для майбутніх фахівців водного транспорту, є особистісно-орієнтованими, і спрямовані на розвиток індивідуальних навичок студентів.

У статті перераховуються переваги використання електронного навчання в підготовці майбутніх фахівців водного транспорту, переваги використання електронного навчання для викладачів, які навчають майбутніх фахівців водного транспорту, а також переваги для адміністрації Академії (університету).

Крім того, вказуються недоліки використання електронного навчання в підготовці майбутніх фахівців водного транспорту.

**Statement and justification of the significance of current issue.** The importance of necessity to change traditional approaches to the training of water transport specialists is caused by the processes of globalization, the "digital revolution", and transition to an information society. Within current conditions the computers and the Internet have become integral tools, technologies are becoming easy adaptable, more efficient and qualitative, which in turn gives, huge privileges for increasing access to information technologies. Domestic education in the context of Eurointegration committed to its task in developing individual abilities of future specialists, global cooperation, removing barriers

between formal and informal education, which becomes possible with the participation of competent teachers, capable of developing and implementing ambitious educational programs with the help of information technologies.

In recent years, e-learning has become an integral part of the educational process in Higher Education Institutions and it is used in all forms of education. The use of e-learning can improve the quality of education by using current global educational resources and due to the fact that using the elements of e-learning and distance educational technologies increases the proportion of independent work of students in mastering the material.

**Recent researches and publication analysis.** There is a number of foreign research works, including Russian and Kazakh scientists, dedicated to the issue of applying "e-learning" as an innovative method for training students, namely: Vega-Rodriguez [9], D. Vlachopoulos [10], J.M. Sanchez-Peres [9], T.M. Gussakova [4], A.V. Kazanskaya [3], G.V. Livskaya [5], T.A. Makarchuk [6], G.V. Mozhaeva [7], G.B. Parshukova [8] and others. In the additional improvements to their scientific works, these authors strongly emphasize the need to move from traditional to distance learning by using information technologies, and they also scrutinize the features of using web2.0 technologies in the higher education system. Despite this, in Ukraine this direction for training students, including future specialists of water transport, is not widely covered nowadays in the science field and thus requires further research and development.

**The aim of the Article.** The aim of this research paper is to analyze the features of "e-learning" as an innovative method for training water transport specialists and to determine the opportunities to apply them in the Domestic education.

**Statement of the main material of the research.** Only recently, the term "e-learning" started gaining popularity in the Post-Soviet countries. It integrates many of innovations in the field of application of modern information technologies in education, such as computer-based learning technologies, interactive multimedia, web-based learning, on-line training, etc. Gradually this term replaces the widely known concept of "distance learning", which is associated with the use of information technology in modern distance learning systems and with the widespread adoption of these technologies at the traditional universities. Thus, the boundaries between distance learning and direct study at the university are getting less visible. The term "e-learning" reflects this kind of integration of distance and traditional organization of

educational process based on information technologies. [1, 439 p].

"E-learning" should be considered in terms of the following methods:

- the use of electronic media for various learning purposes, which range from additional functions in ordinary classes to the complete replacement of face-to-face meetings to online meetings;

- technology use to provide educational and training programs;

- it is the provision of education (all activities related to instruction and training) through various electronic tools and media information;

- this training is based on information and communication technologies (ICT) for pedagogical interaction between students and curricula content, students and teachers or among students using the Internet access [10, 148 p].

The development of the modern education system in the countries of the world is conditioned by the influence and introduction of information and communication technologies in all areas of the educational institutions and mostly owing to emergence of free access to the means of Internet technologies. These processes predetermine significant changes in the traditional approaches to the educational process.

Learning with the help of information technology has a long history. One of the pioneers of computer training was Patrick Soupis from Stanford University, who conducted experiments in 1966, to teach elementary school students reading and counting with the help of the first computers. At the same time, Don Betzer from the University of Illinois creates a computer system (PLATO), which was aimed to educate students at the American higher education institutions. It had important functions for that time, such as a high-resolution graphic terminal, the ability to access electronic educational resources, educational games and even allowed teachers and students to send messages to each other via chat or forum. According to many e-

learning theorists, PLATO became a predecessor of distance learning platforms, also known as LMS [9, 106 p].

It should be noted that in 1969 the first Open University was established in Great Britain, i.e., University that was fully directed to extramural form of education. From the very beginning, elements of information technologies were introduced into its curricula. In the 90s of the twentieth century, similar educational institutions were established in other European countries (Universitat Oberta de Catalunya in Spain, UNINETTUNO in Italy). These universities still running nowadays, they offer exclusively distance courses and successfully apply information technologies in teaching.

To date, e-learning is related to the use of web technologies. In 90s of the XX century, with the spread of the Internet, the Web-based learning is widely used. Then it became possible to download Web sites and educational materials, most often in the form of text or pictures. Later this principle of organization was embodied in the LMS (Learning Management System), allowing the teacher to organize the content of the course according to a standard scheme, which includes the division into lessons, modules. They may include text, video and audio resources, as well as exercises, tests and forums. In such a system, educational resources are most often created by the teacher, he / she creates a structure as well and suggests the sequence for studying the materials. Students' task is to follow definite route, answering questions and performing the assignments.

The emergence of the second generation of web technologies brings new trends in e-learning. Now Internet gives an opportunity to exchange information, create interactive sites, that include multimedia and even communicate through video applications. Generation, which grew up in Europe in 1990-2000, is commonly called digital natives, i.e., "born with digital technologies". They quickly absorb information from video resources and images, as well as from

text, and different sources at the same time, they prefer free access to media resources, and want to be in constant communication with friends (who may be on the other side of the world or in a neighboring house), and they can either create their own media resources (or download someone else's), and buy a book or CD.

Today every Internet user is the creator and distributor of information. The blogs, forums, websites for posting videos and photos are widely created. All this is reflected in the educational environment, echoing in pedagogical approach, with a main focus on a student, a future specialist. Now the student does not have to adhere to the scheme proposed by the teacher, he / she may find the necessary information themselves, analyze it and create a new resource using various multimedia tools.

It is worth mentioning that modern pedagogical technologies, and to a greater extent, e-learning technologies for future water transport specialists, are personal-oriented, and are aimed at developing individual student skills.

Unlike introducing knowledge in the prepared form within the traditional training, in the absence of the possibility of developing students beyond their "zone of proximal development," with domination of explanatory-illustrative and reproductive methods of teaching, on the one hand, e-learning technologies ensure further increase in the level of students' independent work at an individual pace, and on the other hand, provide opportunities for wide communication with other students, and joint planning of their activities [2, 201 p].

With regard to the psychological aspect of assessing the knowledge of future water transport specialists, e-learning technologies provide an opportunity to reduce the role of stressors in the process of passing assignments and examinations, and to increase the level of psychological comfort in classes. Reducing anxiety of students while passing the attestation, lack of fear of punishment and receiving unsatisfactory marks, allows to increase study

motivation and proactivity of students. The e-learning methods implementation at the university allows to improve the level of education and improve the quality of the educational services provided, and moreover to ensure greater flexibility in the fulfilment of the educational goals of the university [2, 208 p].

From this perspective, the change in traditional approaches to teaching and training of future water transport specialists, on the one hand, had an impact to their information technology rapid development, and transition to digital revolution, on the other hand, led to the phenomenon of e-learning. The introduced evolution of information technologies and multimedia demonstrates the diversity of technologies and tools, the rapid expansion of their capabilities and functions, and, consequently, the diversity of opportunities in the educational process, which will also undergo radical changes towards openness and removal of boundaries - geographical, cultural or age-related.

Thus, it becomes clear that the definition of e-learning is diverse, in which one or another technology or feature of the educational process is involved. All of them are regarded as valid, as each of them reflects a particular goal pursued in the use of e-learning, and applies certain technologies or is aimed at implementing the chosen format of education. The introduction of e-learning can radically change the process of transferring knowledge to future water transport specialists, making it more flexible, consistent, convenient for all participants of the educational process. Furthermore, e-learning has certain advantages that aimed at various target groups such as students and postgraduates, teachers and University administration [7, 135 p].

The advantages of using e-learning in the training for future water transport specialists are as follows:

- being able to study the materials of the training course at any time and in any place;

- active collective students work on the discussion of the studied courses and topics in social networks;

- training on an individual trajectory;

- progress control and adjustments of actions;

- teacher is available almost anytime, and, accordingly, it is possible to contact him / her by e-mail and get a respond shortly;

- constant increase in the level of computer literacy and IT competence;

- courses are created with participation of a whole team of specialists, which makes the training more attractive;

- transportation costs reduction when selecting distance models of education by future water transport specialists.

The advantages of using e-learning for teachers who train future water transport specialists are as follows:

- facilitated access and flexible management of teaching materials (using learning management systems);

- improvement of pedagogical skill as a result of introducing innovative didactic technologies, and, consequently, teachers ranking upgrading;

- possibility of developing individual pedagogical scenarios;

- training system can exempt teacher from some functions such as an information reporter and consultant;

- ability to monitor progress, timing of tasks and students individual work rhythm;

- extensive use of communication tools that allow the teacher to interact intensively with students;

- upgrading IT competence level.

The advantages of using e-learning for the University administration are as follows:

- strengthening the innovative potential of the Higher Education Institute by improving the quality of courses and programs;

- improving the organization of the educational process by increasing the IT competence of teachers;

- opportunity to increase library electronic resources;

- reaching high coverage of students;

- prospects for international integration and participation in joint educational projects within the framework of the Bologna Process and in other global integration processes.

The weaknesses of e-learning in the training of future water transport specialists include:

- timeconsuming of the course development;

- in some cases, incapability of modifying the developed course (recorded on CD-ROMs, etc.);

- student motivation lack;

- staff issues, associated with training of teachers, being able and willing to develop and constantly update their courses, since the elaboration of e-learning content requires specific knowledge from all participants in this process;

- lack in IT competence of teachers and students;

- e-learning course does not involve a lot of personal communication with teacher, but the development of communication channels allows partially to eliminate this limitation using video conferencing and e-mail communications.

The e-learning development in training of future water transport specialists provides constant consulting, methodological and organizational support for the implementation of new educational programs, ensuring their fulfillment in educational institutions and puts forward new requirements for the educational and methodological support of educational programs. To form an individual student trajectory and compose an individual curriculum, it is necessary to have a clear understanding of the educational resources (a list of proposed educational programs, electronic textbooks, electronic sources of information, electronic

libraries, etc.). The educational institution should have an interactive electronic content for all the academic disciplines, comprising the educational program.

One of the important conditions for the successful implementation of e-learning at the Higher Education Institution - is to understand that e-learning is essentially a student-oriented learning technology [2, 203p]. Currently, all e-learning environments created in the world put the student at the center of the learning process.

In sum, e-learning formation and development are closely connected both with the development of innovative technologies, and society as a whole. To date, e-learning courses and mobile devices allow you to study anywhere: on the road, at work, at home. This learning process is characterized not only by the higher degree of students autonomy, but also by the creative and playful component, as well as by collective work on challenges and tasks. Teacher's role is also changing, which is practically on par with students in the modern world of accessible information. E-learning development, reflecting changes in society, suggests thinking about new educational context and competences that future water transport specialists should possess.

**Conclusions and prospects for further research directions.** E-learning implementation into daily educational process of future water transport specialists will allow the students to expand the frames of the learning process and move freely without interrupting their education, and also provide opportunities for training people with disabilities. It is worth mentioning, the effective interaction of participants in the educational process sharing scientific materials through modern wireless technologies.

Thus, the high efficiency and expediency of the e-learning usage in the preparation of future water transport specialists is evident.

Most of the modern students have long been committed to the transition to e-learning. The level of development of society imposes the

need to use new information technologies in all spheres of life. Foreign experience has already shown the effective application of e-learning technology in colleges and universities. To date, all educational resources are transferred to the electronic mode. The education is based on a credit system where 90% of the knowledge student is required to receive independently, outside the university walls, and this demonstrates the intention to entrust the learning process to the student himself.

And the higher school should not withdraw from these imperatives of our time, after all, the efficiency of this technology is proved.

Consequently, the modern teacher should strive to apply information technologies in the educational process, and it is necessary to look for even new opportunities for the beneficial and high-quality use of e-learning, combining experience, knowledge, efforts of both education representatives and students themselves, which in the future will certainly lead to the successful e-learning implementation in the educational process of higher education institutions of Ukraine. Solving these issues will stay as relevant as ever and require further in-depth research.

## Реферат

### «Электронное обучение» как инновационный метод подготовки будущих специалистов водного транспорта

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#### КЛЮЧЕВЫЕ СЛОВА:

электронное обучение, метод подготовки, профессиональное образование, специалисты водного транспорта, информационно-коммуникационные технологии, система управления образованием.

В статье описывается электронное обучение, как инновационный метод подготовки специалистов водного транспорта. Описывается его важность как вспомогательный и неотъемлемый инструмент для обучения в высших и профессиональных учебных заведениях не только Украины, но и мира.

В статье указывается, что в последние годы, электронное обучение стало неотъемлемой частью учебного процесса в высших учебных заведениях и используется во всех формах образования. Использование электронного обучения может улучшить качество образования, используя текущие глобальные образовательные ресурсы и к тому же они используют элементы электронного обучения и дистанционного образования.

Электронное обучение рассматривается с точки зрения использования электронных учебных средств для различных целей обучения, которые варьируются от дополнительных функций в обычных классах до полной замены непосредственных встреч на онлайн-встречи, а именно:

- использование электронных технологий для обеспечения образовательных и учебных программ;
- предоставление образования с помощью всех электронных средств и средств массовой информации;
- обучение на основе информационно-коммуникационных технологий (ИКТ) для педагогического взаимодействия студентов и учебных программ, используя доступ в сеть Интернет.

Автор статьи отмечает, что современные педагогические технологии, и в большей степени, технологии электронного обучения для будущих специалистов водного транспорта, являются лично-ориентированными, и направлены на развитие индивидуальных навыков студентов.

В статье перечисляются преимущества использования электронного обучения в подготовке будущих специалистов водного транспорта, преимущества использования электронного обучения для преподавателей, которые обучают будущих специалистов водного транспорта, а также преимущества для администрации Академии (университета).

Кроме того, указываются недостатки использования электронного обучения в подготовке будущих специалистов водного транспорта.

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