



# НАУКОВО-ТЕХНІЧНІ КОНФЕРЕНЦІЇ

Національний університет кораблебудування

## СУЧАСНИЙ СТАН ТА ПРОБЛЕМИ ДВИГУНОБУДУВАННЯ

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Національний університет кораблебудування імені адмірала Макарова

## **СУЧАСНИЙ СТАН ТА ПРОБЛЕМИ ДВИГУНОБУДУВАННЯ**

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Матеріали збірника можуть бути корисними для науковців, інженерно-технічних працівників, викладачів, студентів і аспірантів.

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## MAIN TRENDS IN THE DEVELOPMENT OF THE EDUCATIONAL PROCESS IN HIGHER EDUCATION

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In the global educational area, values are constantly being rethought, policies reformatted and priorities revised. Therefore, in order for Ukraine to be able to freely join the current international educational program, it is necessary to study, analyze and implement progressive world experience, trends and values [1], [2].

Let's consider the main global trends in the development of the educational process in higher education [3], [4].

### 1. Digitization as a way of managing the educational process.

Researchers often characterize this trend as a certain implementation of the artificial intelligence system in education management and note two necessary conditions for this "digitalization" of the educational process. First, educational institutions must be equipped with appropriate computer equipment and software. Secondly, for the possibility of applying this technique, teachers and support staff must have sufficient qualifications.

When discussing this trend, attention is often drawn to the fact that artificial intelligence will contribute to the personalization of the educational process, the creation of individual educational trajectories, the assessment of the competencies of those seeking higher education, and will even be able to provide students with recommendations for further education. Therefore, we should expect that very soon something like a "smart university" will appear next to the "smart house" and "smart city".

### 2. Digitization as a way of providing information for students.

The coronavirus pandemic clearly showed that digitization from an auxiliary direction of development became the main one, turned into a real means of education. New methods of digital education dictate the need to develop new didactics, and this, in turn, requires a change not only in pedagogical qualifications, but also in the way of thinking of professors. E-learning is no more "e-learning", but "digital learning". This term emphasizes that learning is not divided into face-to-face and distance learning, but uses all different modern tools to achieve the educational aim.

### 3. Distance learning as a norm.

A few years ago, distance learning in some online schools or online courses was exotic. Now you won't surprise anyone with this. Millions of schoolchildren and students were forced to switch to distance learning. They are increasingly being followed by educational platforms and businesses that previously worked online.

Traditional universities, classical and alternative schools are moving online. The fear of distance education during the pandemic has disappeared. We learned that online education can also be of high quality. Although, of course, it is only developing.

### 4. Individual educational trajectories.

A current trend is a certain freedom of student choice of educational material. This approach is implemented through the formation of the so-called "individual educational trajectory" and a flexible curriculum that corresponds to this trajectory.

The student gets the opportunity to independently choose a subject that interests him, as well as methods of learning new materials and solving problems. This approach, in addition to improving professional skills, also greatly contributes to the development of creative abilities and critical thinking of students.

#### 5. Visualization in the educational process.

It refers to the process of presenting data in the form of an image with the aim of maximum ease of understanding. The brain perceives visual information 60 times faster than text. Therefore, images are the best friend of teachers and everyone who wants to present important data as clearly and clearly as possible. The transition to distance education naturally increased interest in information visualization in education: the combination of text and images became almost the main connecting link between the student and new knowledge.

You can visualize a certain theory, a personality portrait, a TV manual, a plane crash, a political situation – absolutely all data. Infographics can include text, symbols, diagrams, charts. But the images themselves play a key role in it [5].

#### 6. Microlearning.

In the contemporary world, it is recognized that in order for students to better perceive information, it is advisable to present it not in large volumes at once, but through "microlearning".

Microlearning is a way of presenting learning material in the form of small learning blocks. Each element has a certain specific meaning, and a minimum of time is allocated to its study. Microlearning gives teachers considerable freedom of choice, as well as opportunities to personalize methods and interactive techniques.

#### 7. Use of smartphones in the educational process.

Special technical means have always been used in the educational process. Video projectors, televisions and other demonstration equipment are already traditional for teaching educational material. Nowadays, more and more attention is paid to the use of smartphones in the educational process, which are actually powerful computer means of communication. Such well-known software manufacturers as Google and Microsoft create entire sets of programs for education (Google Workspace for Education, Microsoft 365 Education), which are specially adapted for use with smartphones.

#### 8. Use of media environments.

Now there is a rapid increase in the influence of social networks and visual sources of information, such as YouTube, Instagram, Twitter. Media education is a process of personality development with the aim of forming a culture of communication, creative and communicative abilities, critical thinking, the ability to fully perceive, interpret, analyze and evaluate media texts, teaching various forms of self-expression using media technology. Students should be able to actively use the information environment and competently filter information coming from the Internet.

#### 9. Data analysis when creating new educational products.

The creation of new educational products will increasingly be based on data analysis, rather than on the intuitive vision of teachers. Digital learning services generate a large amount of data about the behavior of learners and their interaction with content, which allows the transition from the model of "teaching as an art" to the model of "teaching as a science".

#### 10. Use of elements of edutainment.

Edutainment is the education in an entertaining format. This trend is currently very popular for schools. But some elements of edutainment find a place in higher education as well. Its important feature is the presentation of material in an accessible and understandable language, with the integration of elements of entertainment and education.

Modern technical means make it possible to make "fun" synonymous with learning. The quality and number of edutainment projects around the world is constantly growing. Getting pleasure from the learning process is the key to sustained interest in learning.

#### 11. Immersive learning.

Immersive learning is the use of Virtual Reality (VR) and Augmented Reality (AR) technologies. The immersive format allows:

- at first, to create a realistic environment as close as possible to real life;

– secondly, train specifically and purposefully. We supposedly blur the line between theory and practice.

As a result, the necessary skills are learned faster and better.

Nowadays, these technologies are very expensive. But in the foreseeable future, VR will become cheaper. There will be educators who have mastered VR as a hobby and can-do projects of medium complexity at an affordable price. Glasses and helmets will be more and more qualitative and cheap. The general experience of creating VR projects will be accumulated [6].

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## GOOGLE DIGITAL TOOLS FOR HIGHER EDUCATION

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In the conditions of challenges to the education system caused by a long pandemic and war, in order to expand the possibilities of using digital tools for organizing distance learning and improving the efficiency of the educational process, specialized cloud software suites are increasingly being used in Ukrainian higher education, the most popular of which is Google Workspace for Education and Microsoft 365 Education from the American companies Google LLC and Microsoft Corp.

The development of cloud technologies by Google began in 2006 with the introduction of Gmail. In the same year, the Google Calendar, Google Talk and Google Page Creator programs were added, which were combined into the Google Apps for Your Domain suite. Also, in 2006, for the first time, the company allowed educational institutions to use this service, calling it Google Apps for Education.

Further development supplemented the Google Apps with such well-known products as Google Docs, Google Drive, Google Forms, Google Meet, Google Classroom, and others. In 2016, the Google Apps was rebranded as G Suite. In 2020, as a result of a new rebranding, it received the current name Google Workspace.

While most Google services are available separately for free to consumers using their free Google Accounts (via Gmail), Google Workspace adds paid enterprise features, such as domain-customizable email addresses (for example, @yourcompany.com), the ability to unlimited Drive storage, additional administration tools and advanced settings, as well as 24/7 phone and email support.

Based in Google data centers, information is stored directly and then synchronized with other data centers for backup purposes. Unlike free consumer services, paid Google Workspace users do not see advertisements while using the services, and information and data in Google