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## INNOVATIVE TECHNOLOGIES IN DISTANCE EDUCATION

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In the conditions of digitalization there is an active introduction of innovations which lead to transformation of various processes of human activity. Under the influence of technology, users, especially in the younger age groups, and in middle age are reoriented to innovative solutions. The outlined trends are also relevant in educational activities, as young people show a significant interest in acquiring knowledge through the use of traditional methods and approaches. Along with this, the COVID-19 pandemic has led to social distancing and the transfer of the educational process to the online environment. The transfer of a large number of students to the digital environment has posed a number of questions to higher education institutions to ensure a quality educational process and maintain effective communication between all participants in educational activities through the use of innovative technologies [1].

Translating the educational process into a digital environment leads to the exclusion of students from educational methods that have been used for a long period of time and have shown their effectiveness. In the process of implementing digital technologies, it is necessary to ensure communication with teachers and students in order to adapt all participants in the educational process and obtain the maximum possible effect in the long run [2].

Ensuring the effectiveness of the educational process involves the use of innovative equipment, which in accordance with the achievements of scientific and technological progress will maximize the level of relevant knowledge assimilation. Modern students need to teach disciplines and provide educational materials in digital form, as the constant use of gadgets to access the Internet leads to the formation of millennials' demand for interactive educational content. Effective approaches in modern conditions are virtual and augmented reality technologies, which through the use of specialized software and appropriate technical devices, including through the use of applications on smartphones, allow students in an interesting format to immerse themselves in the learning process and gain modern knowledge. It should be noted that modern students are very positive about learning using digitalized game techniques. Given the psychological and social characteristics of millennials, educational institutions should increase the professional level of teachers through the development of competencies related to the use of innovative equipment and software in educational activities. The dynamics of innovation development and rapid reorientation of students to appropriate technological solutions involves the training of teachers on an ongoing basis.

The active development of cloud solutions and mobile applications is gradually leading to the transformation of interaction between students and teachers. Educational institutions have been given the opportunity to place educational content in a digital environment with access rights in accordance with the disciplines taught to students. In addition, knowledge testing can be carried out in specialized applications 24/7, which helps to create flexible conditions for the assimilation of educational materials and educational tasks.

Technology giants contribute to the development of innovative education by opening access to their own cloud services for students and teachers. First of all it is necessary to pay attention to services Google for Education, Microsoft Office 365. These services give the chance to apply rather essential set of decisions for optimization of educational process. For example, Google Classroom allows members to create access to individual disciplines by providing a video call process, hosting tasks in the cloud service, and creating folders for students to download completed tasks. Also noteworthy are Google's digital Jamboard interactive whiteboards, which allow teachers and students to draw on regular whiteboards and add a variety of content (text, pictures, formulas, etc.). The technological solution allows several participants to work on the digital board at the same time, stimulating the development of teamwork to achieve certain work goals [3].

In the process of implementing academic mobility, modern institutions of the higher world have the opportunity to cooperate with international educational platforms. Private companies create and constantly update educational content in accordance with innovative technologies and current needs of the labor market. The presented online platforms provide free access to teachers and students to educational materials, provided they confirm their affiliation to a certain higher education institution. Examples of educational portals are DataCamp, which specializes in online learning in the field of Data Science and allows students to study for free for 6 months, provided they confirm their affiliation with one of the higher education institutions [4]. JetBrains Academy allows students to take free programming courses, providing access to popular languages (Java, Kotlin, Python, Scala, JavaScript, C / C ++, Rust, Go) [5].

#### References

1. Education during COVID-19; moving towards e-learning [Electronic resource]. – Access mode: <https://www.europeandataportal.eu/en/impact-studies/covid-19/education-during-covid-19-moving-towards-e-learning>
2. Гаркавенко С.С. Управління якістю освітньої діяльності в аспекті інформаційно-комунікаційних технологій / С.С. Гаркавенко, О.Б. Моргулець, В.М. Павленко // Проблеми інтеграції освіти, науки та бізнесу в умовах глобалізації, КНУТД, 2019. С. 11 – 12.
3. Google Workspace for Education [Electronic resource]. – Access mode: <https://edu.google.com/>
4. DataCamp [Electronic resource]. – Access mode: <https://www.datacamp.com/>
5. JetBrains Academy [Electronic resource]. – Access mode: <https://www.jetbrains.com/>