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PROSPECTS OF USE OF INNOVATIVE TECHNOLOGIES IN EDUCATION

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ANNOTATION

This article describes the prospects for the use of innovative technologies in education and modern educational technologies.

Keywords: modern education, distance education, teaching method, interactive education, Khan Academy, online course, interactive display, interactive guide.

It is recognized by many scientists and experts that the modern education system cannot meet all the serious requirements of the present time. One of the main ways to fundamentally change this situation is to involve the latest software and technical tools of modern technological development in the educational system on a large scale. One of these tools is the distance education system, which allows people to get a full-fledged education without being separated from production and other daily tasks. In the fall of 2012, two Stanford University professors, Sebastian Thrun and Peter Norvig, offered to listen to lectures on artificial intelligence on the Internet. These lectures included all necessary materials, tests and final exams. The classes were organized only online. Although the lecturers planned for a maximum of 2-3 thousand students to participate in these trainings, at the beginning of the semester, 160 thousand people from 200 countries of the world signed up for it. It is impossible not to mention that similar distance education systems are becoming more and more complex and their quality is increasing. Every day, more and more experienced teachers and professors are recording their lectures on YouTube and iTunes for free use by others. Some of them, such as Michael Sendel, a professor of political philosophy at Harvard, became one of the most famous people on the Internet because of the popularity of his course on spirituality called Justice. Every year, philanthropists and venture capitalists allocate tens of millions of dollars to collect the best knowledge from around the world and put it online for everyone to use. Their joint efforts are expected to lead to modern and high-quality education for people living anywhere in the world. According to professors Sebastian Trun and Peter Norvig, by 2050, there will be only ten large modern universities in the world that can simultaneously educate millions of students. As an example, we can cite the following [1]:

Khan Academy - a non-profit organization founded by financial analyst Salman Khan in 2008, it is a repository of various tasks and video materials on mathematics, physics, biology, astronomy and other natural sciences. The materials of this academy vary in complexity and are mainly intended for high school students. Therefore, its materials are used on a permanent basis in dozens of educational institutions in the USA. Khan Academy allows teachers to radically change the educational process, that is, students can listen to lectures via the Internet at home and do homework with the help of the teacher when they come to class. At any time, the teacher can check what materials the student has mastered or what materials are difficult for him to master. Currently, this academy is financially supported by the Bill & Melinda Gates Foundation and Google. You can learn more about this academy at www.khanacademy.org.

Among the materials developed by the academy for schools, we can cite the following educational video materials as an example [2]:

- *KIPP School Oakland Pilot Video*
- *Summit School Pilot Video*
- *Marlborough School Pilot Video*
- *Oakland Unity Pilot Video*

Khan Academy resources can be viewed and explored through the following web applications:

- YouTube: www.youtube.com/khanacademy
- Twitter: http://twitter.com/#!/khanacademy
- Facebook: www.facebook.com/khanacademy
- Google Plus: https://plus.google.com/109050230672993035916/about
- Translations: www.youtube.com/khanacademylanguages
- Talks and interviews (videos)
- Speaker requests

2U or 2Tor is a for-profit company founded in 2008 by John Katzman, a modern education critic and well-known entrepreneur. This company collaborates with leading American universities to create fully online courses for several years. The company produces interactive manuals, programs for tablets and smartphones, online lectures and functional devices for communication between students and professors. To develop the platform of each course, 2U (or 2Tor) company is spending about 10 million dollars allocated by various venture funds. About 100 million dollars were spent on the initial stage of this project. The rest of the main areas of educational technology mentioned in the title of this section are described below at the level of possibility [4].

Individual orientation of education

The modern educational process strives for universalization and models people to be as similar as possible to each other in education (that is, it requires compatibility). Today's schools and universities imagine their students in the form of classic "black boxes", give them all the same information and expect a response from them without taking into account the individual characteristics of learners. Such an approach is understood by many as an anachronism of the industrial age that should be abandoned long ago. Some propose to solve this problem by involving more teachers in the educational process. Because in this, special attention is paid to each student, and the educational process can be organized optimally, taking into account their needs and abilities. But since this is a very expensive activity, many experts in pedagogy emphasize that the use of software and technical tools and capabilities of modern computers in the educational process can lead to good results. If this is the case, in the future computers would be able to create individual educational programs for each pupil or student in accordance with his intellectual, emotional and knowledge level with the help of appropriate software and technical support. As an example, we can show the educational system called Knewton, which was founded in 2008 in a commercial form. Knewton – allows creators of online courses to analyze a student's mastery of a specific subject using methods developed by the company. Based on this collected information, Knewton creates a unique program suitable for each student. With the help of special programs, Knewton can determine what are the empty and

shallow areas of the student's knowledge, what kind of educational materials he learns well (text, audio or video), which topic he should now move on to. The fact that one of the world's largest textbook publishers, Pearson, is using Knewton to create online math courses shows that it is on the right track. The publisher's goal is to create and sell interactive e-learning manuals that can be reorganized according to the student's progress while reading the manual. Knewton received about $50 million in investment from venture investors such as Peter Thiel and Reed Hoffman to continue and expand their work [8].

Teaching through computer games

Let's say - the student comes to a restaurant and opens his smartphone, opens the Foursquare game on it and starts playing it. After some time, he achieves some results and receives the corresponding points and medals. Interested in this, he will continue his game again, and note: he will have the opportunity to acquire the knowledge that is given through games. That is, he will have the opportunity to learn while playing with interest. The process of using similar game mechanics in non-game situations is called gamification, and this term has been used by many business communities around the world for several years. Jane McGonagall wrote in her book "Reality Is Broken: Why Games Make us Better and How they Can Change the World - Why games can make us better and how they can change the world?" In his book, he showed that by 2015, the size of the gamification market will reach 15 billion dollars, and it will penetrate into all areas of human activity, including education. Gamification is based on the fact that the human brain loves to be rewarded for the work done. To be sure of this, it is enough to look at various games on social sites, because they have various rewards and awards. Suffice it to say that Zynga made billions of dollars doing this. Proponents of gamification suggest maximum integration of game elements into a person's daily life. Then it will be much easier for them to learn and be educated in the relevant fields. In general, it can be said that the process of gamification of education without the help of computers has already taken place. Because if the student solved the problem correctly, they will reward him with a good grade, and if not, they will punish him with a bad grade. At the end of each school year, good students are awarded with certificates, and bad students are left in the classroom. But due to the fact that it requires a lot of resources, money, time and a large number of teachers to optimally implement gamification, and it does not work well, gamification is implemented in other ways, with the help of computer software and the Internet. or it would be appropriate to do it in a different order. As an example, we can show Codeacademy, which includes interactive courses on learning the basics of programming. The courses in it are divided into maximally short tasks, and the student's achievement of the smallest success is very well rewarded. And this leads to the learning material being remembered and mastered better. This site was launched in 2012, and at the end of the year more than 500 thousand people were registered on it. About a quarter of them made it to the end of the courses. Codeacademy is free for now, but in the future it will start charging for additional training and can be a good way to find talented programmers for different companies and earn a lot of money. The creators of this system are graduates of Columbia University, who were able to attract investments of three million dollars from Union Square Ventures and CrunchFund.

At Khan Academy, gamification is deeply embedded in the logic of the site. In addition to badges for solving examples, this academy shows the student's level of knowledge for each topic, and based on this, the overall rating of the class is determined. This increases healthy competition among students [9].

Interactive tutorials

If you take a look at Wired magazine for iPads, you can see how outdated and outdated today's textbooks are. Today, the pages of modern magazines are very interesting, multimedia, and attractive: the size of colorful images can be easily enlarged, the sound of music suitable for the topic comes in the right places, and various video clips are displayed. and interactive infographics provide immediate, relevant answers at the touch of a finger. After seeing these, the following question will surely arise: So, why can't we create the same interesting interactive e-books and lecture texts for the subjects taught in educational institutions!

But many educators with an old and hardened worldview can spend dozens of hours trying to explain to you and us the advantages of creating traditional books and manuals in paper form (which is a process of stagnation in the education system itself). it is also possible - the old does not give way to the new easily!). Because, firstly, they are not ready to understand the benefits of such electronic books, and secondly, they are not able to create and use such books. Thirdly, the great difference between the concepts of the previous time and the concepts of the present time has created a unique big gap between the people of the 20th century and the people of the 21st century. That's why at the present time, the processes of education and training of young people and adults are implemented in different forms and have different results. For the same reason, the process of creating electronic books is limited to the gradual transfer of existing books and manuals to digital format - and it is not difficult to predict that the effectiveness of these works will be very low. But this situation is temporary and it can be hoped that it will change soon, because the rapid implementation of interactive educational methods in the educational institutions of the republic requires the creation of electronic literature and sites that implement innovative educational methods, and someone will definitely do this. does. It should also be said that only the preparation of school textbooks using innovative methods and the income from their sale is a huge amount. If we add to this the electronic textbooks used in lyceums, colleges, institutes, universities and academies, we will have a huge amount of money. It is a clear fact that the opportunity to earn such a large and permanent source of funds can attract many entrepreneurs and venture business representatives. If this work is organized to be carried out by the employees of the educational institutions described above in cooperation with the programmers working in those educational institutions, such entrepreneurial activity would cause a lot of money to come to the educational institutions, and they would They would have developed quickly due to their internal capabilities. Of course, this entrepreneurial activity would lead to a significant improvement in the financial situation of professors and teachers who work permanently in educational institutions. Recently, Apple and Amazon, one of the largest companies in the world, are seriously interested in such an opportunity and are directing their efforts and capabilities to it. As an example, we can cite the company Chegg, which is engaged in the rental of educational literature. According to their calculations, the average statistical student in the colleges of the United States of America spends up to 1000

dollars in one year to buy books and study guides. Chegg has made it possible for students to use half-price books for a semester and then buy them back, cutting that cost in half.

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