KAPITEL 2 / *CHAPTER 2* [2]
USE OF MOBILE LEARNING TECHNOLOGY IN HIGHER EDUCATION INSTITUTIONS

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Introduction.

There is enormous potential to expand access to higher education and increase student diversity. Internet technologies make it possible to learn anywhere, anytime and from anyone. Such flexibility is important for non-traditional learners and will transform higher education institutions' participation in lifelong learning and professional development programs, giving governments an important tool to provide a variety of forms of education in higher education systems to meet the needs of all students, while also allowing access to international markets and complements existing solutions in the field of cross-border education [9]**.** New technologies can also facilitate closer cooperation both with global partners and at the local level. The development of educational partnership relations is an important element of the European strategy of cooperation with other regions of the world, as well as a mechanism for increasing the indicators of the level of education in countries with a developing economy. At the local level, technology can support national efforts to strengthen inter-agency collaboration, pool expertise, and build more critical mass.

Recognizing that higher education institutions, particularly teaching staff, are primarily responsible for these changes in teaching, the responsibility of public authorities is to create the right environment and incentives for action. The European Union must also play an important role in this matter. Erasmus + can provide financial support to policy initiatives at national and institutional levels. Support can also be provided for mutual learning and cross-border joint initiatives - for example on infrastructure, quality assurance guidelines and credit recognition[1, 2, 3].

Global demand for higher education is projected to grow exponentially, from 100 million students today to more than 250 million in 2025. Emerging economies such as China and India will be the main drivers of this growth. Even in the EU, where the

[2] ***Authors:*** *Prylipko T. M., Rusnak L. V., Koval T. V.*

population is shrinking in many countries, the number of people studying in higher education institutions continues to grow. A significant percentage of this increase is in adult learners and those returning to college, a diverse group that mostly combines study and work.[13]

The pace of educational change around the world is astounding. Particularly popular open online courses are of particular interest. However, they are only one part of a wave of innovation that is spilling over into higher education and affecting both how education is taught and how education is offered.

The growing demand for open educational approaches and resources, as well as the development of technology-based learning technologies, have led to the creation of a huge number of digital platforms and portals that offer easy access to educational resources and learning materials from various institutions around the world and allow participation in many different online courses.

Traditional educational programs are being modernized. Teachers and students have access to more materials, and new technologies and learning approaches are being used in teaching There have been changes in the perception and attitude towards distance learning. People are increasingly choosing to study online[4].

Both of these forms of education are gaining more and more popularity and recognition in society. As a result, both traditional higher education institutions and new types of higher education are developing a range of online offerings, spanning entire curricula, in-service programs, and shorter courses such as MOOCs (Massive Open Online Courses).

Recently, distance education is gaining more and more popularity: back in 2014, Google released the most frequent queries related to higher education - it turned out that people are more interested in online courses than in visiting university campuses. But doubts arise among applicants regarding the choice of distance learning. Among the reasons for doubts are the lack of necessary information about remote programs and the traditionally low level of trust in everything relatively new. Many universities in Ukraine and abroad are picking up the trend of partial transition to distance learning. Scientists predict the unprecedented popularity of this method and have already called

it "the education of the future." While others ponder, over 50 million people are already acting! The number of people currently receiving higher education remotely has exceeded 1 million in the United States alone. In China, about 2 million people use this opportunity, and in India, one and a half million people have already chosen distance education[1,3].

Presenting main material. Digitization of education should be included among the main trends in the development of modern educational systems. Mobile technologies have significant potential for introducing innovative learning methods into the educational process. The implementation of wireless communication and a diverse selection of applications open up significant opportunities for learning anywhere and at any time, causing a transition from traditional learning technologies to technological and multimedia ones. The traditional approach should be understood as the constant contact of the teacher with the student, which allows monitoring the degree of assimilation of educational material, the acquisition of practical skills, the possibility of immediate response to errors and their correction. At the same time, the technological approach in teaching the disciplines of the natural cycle expands the ways of obtaining information, which contributes to its faster assimilation, increases the level of independence in the processing of new material. The use of mobile learning technologies involves the use of educational methodological support on electronic media, Internet information transmission technologies, which allows to increase the volume of educational information and its non-locality. Also, it should be noted that the use of mobile learning technology in studying the disciplines of the natural cycle not only meets the modern requirements of the information and educational environment, but also allows for effective interaction between all participants of the educational process and to achieve an increase in students' motivation for independent cognitive activity. In addition, the use of mobile devices (smartphones, tablets, mobile phones) with the ability to connect to the Internet during classes facilitates access to the educational product for people with disabilities[13]. The rapid development of information and communication technologies, as well as the need sometimes to provide educational services at a distance, increases the relevance and importance of distance

education.

It should be noted that the development of a full-fledged distance learning course, using even a small amount of distance technologies (lectures, tests, simulator tests, etc.) requires a considerable amount of time and mastering the basic principles of the platform on which the course is created. Sometimes it becomes necessary to switch to distance learning during the academic year or in the middle of the course. In this case, one of the software products that can help with a small amount of time and with great efficiency to switch on and switch to a new training format without practically reducing the quality of providing educational services is the Zoom software product [8].

One of the main forms of teacher-student interaction in the real educational process is a classroom session where direct contact and learning takes place. It is to replace this interaction when direct contact is impossible that the targeted application of the Zoom software product is used. The main philosophy of the platform is to create a virtual space in which people can communicate using modern telecommunication systems. A teacher can easily create a conference and share a link to it with a group (stream) of students. After connecting, all its participants can easily exchange audio information, video information and text messages. This conference can be presented as a classroom session, only the students and the teacher are not in the classroom, but at any point of space where there is an Internet connection.

New and emerging approaches to learning and teaching made possible by new technologies can complement, consolidate, support and further develop these activities.

New technologies and online platforms have evolved and continue to grow faster and faster in terms of speed, interactivity and potential reach. It costs little or nothing to copy digital material, and a more flexible approach to copyright can be taken. Broadband networks have made it possible to reach learners anywhere in the world, and when combined with the fact that 2.7 billion people already have access to the Internet, this is a huge potential[3].

Digital technologies alone do not necessarily improve the quality of learning and teaching, and it is clear that the quality of content is still paramount, but these technologies enable quality improvements and can support efforts to achieve more

student-centered learning.

Teachers now have the opportunity to use a wide range of materials in different formats to improve the quality and variety of their curricula.

Each student is a unique unit that learns in its own way. Therefore, teaching aids used in universities and other colleges must take into account individual learning styles, always putting the student at the center. Some of our students will learn better and faster with interactive media that includes images, graphics, video and audio. Others will prefer static text and numbers.

The technology used in the classroom can combine all these elements to create a personalized offer for each student based on their strengths. In addition to increasing the effectiveness of education, such adaptation of the offer to individual needs can also have a significant impact on reducing the number of students who leave school early. The effectiveness of the educational process depends on four elements: program content, students, academic teacher, didactic and educational environment of the university.

Constant communication between the teacher and the student is an important component to ensure high-quality teaching of educational material. In addition to the usual forms of organization of the educational process, such as lectures, practical or seminar classes [1], there is a need to use distance learning technologies. For this, it is advisable to use both well-known publicly available services - "Google Classroom" with "Google Meet" or "Zoom", as well as Sumy State University's own developments (the editor of electronic educational materials "Lectur.ED" and the platform of electronic educational materials "MIX leaning") . These methods are successfully used in higher education institutions (HEIs) of Ukraine. "Google Classroom" allows you to systematize all educational material, create different types of tasks, including tests to check students' residual knowledge [11].

In addition, "Google Meet", which was integrated into "Google Classroom", allows you to conduct seminars, individual classes, consultations before, for example, an exam, defend course, diploma, or master's theses with visualization of the student's personality. You can also use "Google Classroom" or the "MIX leaning" platform to

evaluate and record students' knowledge, abilities, and skills, which allows you to organize the procedure for taking a test or exam. At the same time, the time allotted to the student for passing the test is fixed, the identification of the student, processing and storage of test results, control over the conduct of classes is ensured. This technology was tested during the teaching of the discipline "Information and Web Technologies". Lectures and laboratory classes were conducted using, first of all, Google Classroom, and certification events - MIX leaning. It should be noted that it will be easier to organize the educational process in the disciplines of the IT block in this way than in the disciplines where specialized high-precision equipment is used to perform, for example, laboratory work. This is possible, first of all, due to a number of advantages: - the availability of a large amount of educational material of other authors in open access, with which students can always familiarize themselves; - no need for expensive equipment; - the performance of tasks is not limited in time; – independence from external resources[12].

To perform laboratory work, a suitable program for creating an offline server is installed at the local workplace; - mobility; Of course, first of all, distance learning technologies are used to organize the educational process for students of correspondence and distance forms of education, although recently they are increasingly used for students of full-time (stationary) forms of education. This may be related to various force majeure circumstances, when it is not possible to organize lectures or laboratory classes in the usual mode (in the classrooms of the educational institution) [5].

Students skillfully use modern learning technologies, which is evidenced by the overall success rate in the control group. All tasks that were offered as part of the laboratory work were completed on time. Most students master the study material on their own, in addition, there is always an opportunity to consult with the teacher online. In addition, the number of students who study according to an individual schedule, under double degree programs, who are on short-term internships abroad, etc., is increasing from year to year. In this case, the use of distance learning platforms and modern means of communication allows students to study simultaneously under

different educational programs. The presence or absence of modern forms of education also affects the general impression and choice of the applicant when entering a higher education institution of Ukraine.

The critical situation caused by the pandemic and the introduction of quarantine acutely raised the question of the total implementation of distance learning (DL). Undoubtedly, there were problems with the quality of teaching even before the quarantine, but new ones have appeared, which are not only and not so much of a technical nature, such as an unstable Internet, the lack of reliable appropriate programs that provide video lessons with the whole class. Here is the unpreparedness of the participants of the educational process to work in new conditions, a sharp increase in the workload of students and teachers. Homework checking, which, as experience shows, takes up to several hours a day, especially requires automation. All this caused a polarization of opinions in society and arguments for and against DN: is it already necessary in ordinary life or is it a need in extreme situations. Currently, there are certain trends in this field in the world [1].

Mass online courses have become one of the ways to increase labor productivity in education. Pedagogical science has convincingly proven that only active learning is effective. A primitive online course can be enhanced with virtual, augmented reality, and interactive schemes. It becomes possible to analyze data about the thinking process of a particular student, about his perception of a lecture, for example. This is the way to personalized learning, when, for example, the program offers to teach the unlearned, supports the optimal level of interest for a particular student. A modern, adaptive education system is being created. There is more freedom in establishing the time and space framework of the educational process. Lifelong education is facilitated. A typical educational model may eventually become a flipped university, in which education is conducted through mass online education platforms, and only laboratory work, educational projects, and live discussions are implemented in the universities themselves [4].

Textual forms of information transmission will be replaced by simulation systems, electronic simulators, lectures - training using virtual reality. At the same

time, knowledge testing will be conducted in the network using testing and artificial intelligence. As a result, the graduate leaves the university with a block of data about himself. Recommender systems will work with this information, offering a field of activity or a further development trajectory.

Technologies in education help to achieve results with less time and physical costs. This is the essence of digitization. With the help of technology, it is possible to move to personalized training, in which an educational route is created for each student, depending on his interests, strengths and weaknesses, peculiarities of perception, goals, and previous experience. It is too early to say that traditional lectures will disappear completely. DN is an excellent addition to live lectures.

Although the debate about what is more effective: face-to-face learning or still online, has been going on for many years, experience shows that the most effective is a mix of online and offline. Modern students can get all the information from open sources, accordingly, the teacher's task becomes not so much the transmission of knowledge, but the practice of skills and the transfer of experience. That is, the theoretical part can be transferred online without loss of quality [10].

But if we are talking about the practical part, where students can and should apply and develop their skills, offline will provide much more opportunities due to the constant contact between the teacher and students. There is no way to get away from distance learning and technology, but you need to understand how important the mandatory contact between the teacher and the group, the group and the individual student is. In case of any coincidence of circumstances and the occurrence of force majeure situations, the economy of the future is the economy of studying behavioral models and a client-centric approach. Offline in this sense is a prerequisite for any process, because that is where the magic happens: empathy arises, contact is established. That is, offline will definitely not go anywhere, but the system will undergo changes. One way or another, learning involves interaction. It is not technology that teaches, but the teacher. Therefore, it is necessary to improve the training and retraining programs of teachers and teach them to use distance learning methods in a high-quality way.

Practical experience in the use of distance learning systems in various educational institutions made it possible to identify certain patterns in the possibilities and features of using distance courses of educational disciplines, which are developed and used in the Moodle software environment (PS). It is the incomplete compliance with the possibility of implementing the main didactic principles of learning in distance courses, which are developed on the basis of the Moodle PS, that prompted the authors to share their practical work experience and outline ways of improvement [6].

The practical experience of using the distance learning system organized in the Moodle software environment showed the possibility of its effective use for distance learning courses. Such a system as a whole allows the implementation of didactic principles of education for the successful acquisition of knowledge by students of higher education. But it is the Moodle system that does not allow you to simply implement the presentation of illustrative material or educational material loaded with mathematical formulas, and also showed limited possibilities for the implementation of practical and laboratory work in natural sciences.

Therefore, in order to teach precise disciplines, the content of which involves the use of mathematical apparatus, it is necessary to provide for alternative types of information presentation, for example, in the form of PowerPoint editor presentations[3].

For a separate educational institution that plans to use distance learning technology in its activities, it is necessary to develop specific requirements (methodology) according to which a distance learning course should be developed and what requirements such a training course should meet.

A generalized approach to the creation of distance learning courses, their systematized and structurally identical (similar) appearance will simplify the psychological algorithm in systematizing the acquisition of knowledge for students of this educational institution, i.e., higher education institutions will form skills in acquiring knowledge with the help of distance technologies. In addition, the same requirements for creating and completing a distance learning course will simplify (systematize) the teacher's work in finding and preparing educational material.

Distance learning is a process of interaction between teachers and students isolated in space. As a consequence of this, it is possible to note a particularly organized behavior of the participants of the interaction, which depends on the nature of the relationship, the distance between them and is presented in the form of a dialogue[13].

The main task of distance learning is to stimulate the student's didactic dialogue with the course material.The effectiveness of the dialogue between the teacher and the student is determined by: the content of the course, environmental factors (the size of the study group: there will be more dialogues between the teacher and one subject of study than between the group); the language of the dialogue (if the teacher uses the native language of the student, the effectiveness of the dialogue increases); means of communication (if the exchange of information between the teacher and the student is carried out by e-mail, the dialogue slows down and is highly structured, since it takes place in written form; the intensity of the dialogue is higher when teaching with the help of teleconferences, in the process of which the teacher answers the questions of students who, on his own initiative enrich the dialogue). A common form of communication in the process of distance learning is an internal didactic conversation (guided didactic dialogue), with proper modeling, it is possible to achieve a high quality of learning the material.

The quasi-dialogue between the teacher and the student (guided didactic dialogue) should be carried out in the form of instructions that contain the assumption that the student has already read the textbook material regarding a certain statement. The mediated nature of communication in the "teacher-student" system allows for constant dynamic communication at a distance, which, however, cannot fully compensate for the lack of "live" communication. The indirectness of communication during distance learning is manifested in: the need to perform additional internal (mental) and external (mechanical) actions determined by the logic of "man - computer"; forms of information presentation (writing), types of language activity (writing, reading) that are different from "live" communication; delays in the exchange of messages (duration, delay depends on the mode of communication - "on-line" or "off-line"). In distance learning, almost all traditional methods of interaction between the teacher and students

are available.

Modern means of telecommunications open up to students the same opportunities as during face-to-face educational contacts, and often significantly expand them. Features of distance learning in the teleconference mode can be evaluated taking into account the following factors: - educational material; – diagnostic material; - visibility; - teacher's questions to students; – explanation of the material by the teacher; - leading discussions by the teacher; - the opportunity for students to ask the teacher questions; – evaluation by the teacher of the student [11].

In the process of distance learning, the following forms of interaction are realized: 1) student - educational material. Presupposes the student's interaction with the content of what is offered for study. Each subject of education must acquire the skills of construction, enrichment of their knowledge. Interaction with bulk material takes place with the help of radio and television broadcasts, electronic recordings of audio and video materials, computer software. Educational information carriers are a book, a CD-ROM, as well as a computer (electronic) version located in the memory of a network server; 2) student (study subject) - teacher[7].

After the students receive the educational material, the teachers provide them with assistance in mastering it, stimulating their interest in learning, increasing motivation; organizing practical activities based on acquired theoretical knowledge, testing knowledge and assessing the level of their assimilation, providing advisory assistance, etc.; student is a student. Partnership interaction of students in the process of acquiring knowledge can take place with or without the participation of a teacher. It contributes to the formation and development of communication skills, their access to the best examples of the performance of educational tasks (by students with a higher level of academic success and development of abilities).

The means of its implementation can be e-mail, video conferences, etc. [1,]. Interaction with educational information by remote interlocutors (sources of information) develops students' universal skills of remote activity, which are not formed during traditional education. In the design of training programs for distance learning, an empirical and theoretical approach is used.

An essential feature of modern educational systems is their interactivity, which ensures the dialogic nature of learning. However, dialogical interaction is not an end in itself. The intensity of students' involvement in the dialogue is not an indicator of the effectiveness of the educational program. When designing each fragment of dialogue, the teacher must see the didactic goals, make sure that the lines are not overloaded with unnecessary information, and the questions are not too complicated, taking into account the computer's ability to "understand" the answers of the students. The communication process should interest the student, increase his desire to continue the dialogue with the computer, stimulate his cognitive activity, and achieve educational goals [2].

Depending on the pedagogical focus of the dialogue, the following levels are distinguished: – actual dialogue, during which the interlocutor constructs his answer based on a formal change of the message; – business dialogue aimed at solving the proposed task without taking into account the goals of education; - pedagogical dialogue, which takes place on the basis of the student model, taking into account the conditions and goals of education.

Education, if considered in today's optics, in its content is the process of a person acquiring a number of competencies and achieving a certain level of understanding of the surrounding reality in all the diversity of its forms and manifestations, as well as itself as a subject and object of this reality. The formulation of the content and purpose of the educational activity allows the educational system to consistently fulfill the transhistorical functions assigned to it - to teach the new (unknown) and to promote the understanding of what was previously on the line of liminality or beyond it. E-learning (from the English Electroniclearning - electronic learning) is a system of electronic learning, a synonym for such terms as electronic learning, distance learning, learning with the use of computers, network learning, virtual learning with the help of information and communication, electronic technologies[10].

E-learning gave rise to smart education (Smarteducation). This is a new philosophy of learning, which is called intelligent learning. It unites educational institutions, teaching staff to carry out joint educational activities on the Internet based

on common standards, agreements and technologies. We are talking about joint learning and use of content. Smart learning is flexible learning in an interactive educational environment using freely available content from around the world. Therefore, knowledge becomes widely available. The goal of smart learning is to make the learning process effective by transferring the learning process to an electronic environment, and this, in turn, provides access to everyone, expanding the number of people who want to learn from anywhere and at any time. For this purpose, it is necessary to make the transition from book to electronic content, placing it in the repository, making it active [9].

Smart education provides new opportunities for teachers, specialists, students, as well as everyone who is interested in gaining knowledge. With the help of interactive technologies, the student interacts with the software system, selects and analyzes the information he needs, which encourages him to work independently. New requirements are placed on the training course. It should ensure the quality of education, student motivation, involving students in creative, educational and scientific activities. Smart education is an educational system based on a new type of education, which provides for the adaptive implementation of the educational process in which smart information technologies are used. The use of modern information and communication technologies requires changes in the educational paradigm: the transition from the traditional model of learning to electronic learning (e-learning), and from it to Smart education (Smart education). This process involves the creation of a virtual educational environment, the use of interactive ICT tools, regular updating and replenishment of content and monitoring of the quality of education, as well as cooperation of higher education institutions [12].

Smart education has all the prerequisites to become the most effective innovative model of educational activity in the conditions of the global information society. The main feature of this educational model is a system of flexible learning in an interactive educational environment, which allows transferring part of the educational process to the electronic environment [11].

The development of the knowledge society requires a review of the classical

educational paradigm and the transition to the implementation of the Smart paradigm - education aimed at acquiring competencies for flexible and adaptive interaction with the environment. In the near future, the development and promotion of Smart education based on new information and communication, mobile, sensor and other technologies will be the basis of the work of higher education institutions of the future, which will teach students via the Internet using YouTube, iTunes and other services. At the same time, it is worth remembering that 46 knowledge reduced to information becomes impersonal, and therefore the introduction and effective existence of Smart-education is impossible without the responsible and painstaking work of the teacher, who must fill the training courses with relevant content, coordinate the work of students in the educational environment and ensure their comprehensive support [6]

Training courses should be integrated, include multimedia fragments, external electronic resources. It is necessary to comply with the following requirements: flexibility, integration, individual trajectory, mobility, etc. An electronic course, as well as an electronic textbook, will meet these properties.

To create a smart textbook, it is necessary to use: cloud technologies, multimedia tools, automatic filtering by knowledge rating, interactivity, joint work on the Internet, etc. Special attention is paid to the management of educational content and educational resources in smart learning. In this process, educational materials need regular use by teachers, additions from professional blog sites, which gives students the opportunity to form professional competence[5].

Smart training requires appropriate technical support and access to the Internet. The use of modern learning technologies (interactive) and technologies for the implementation of the educational process according to the models: SmartClassroom, FlippedClassroom, etc. create conditions for creative learning[2].

In the majority of scientific works devoted to Smart-education, the main emphasis is placed on technology, while, usually, the role of the teacher-teacher in the educational process is not considered thoroughly enough.

At first glance, the introduction of Smart-education may lead to a reduction in the role of the teacher in the educational process. Based on this, it should be noted that

"smart" products do not contain knowledge, but the results of activity, and it is this aspect that raises the importance of the teacher-teacher as one of the organizers of the educational process. Implementation of modern Smart education is based on three components: technological, organizational, pedagogical [4]. It is the latter that determines not only the content (result) of knowledge, but directly the creative component of the educational process. Without "smart" educational content created by these people, such technologies will not give the expected result. The road map for the creation of Smart-education can be completed only by stimulating the academic activity of teachers. Smart education sets new challenges for teachers. They should not only be well-versed in their professional field, but also know a large amount of information, knowledge, resources, use different types of technologies to work with students. At the same time, Smart education opens up new opportunities for teachers: to share experience and ideas, to engage more in science, to personalize the course depending on its tasks and the competencies of the listener, to save time, to improve already existing content, rather than to create it from scratch. There are already many information technologies in what way they allow to reduce the time of personal communication between the student and the teacher [3].

Many disciplines and courses in universities are transferred to the online mode. But at the same time, the teacher's role will never be reduced to zero, since students must communicate with him and each other in any case. This is the only way they can improve their sociability, gain experience working in a team. Online will not replace this.

With the development of cloud technologies, social networks, Google tools, YouTube, Twitter, etc., education is becoming more accessible. Thanks to the Internet, today it is possible to study anywhere in the world and at any time. There are a large number of various online courses on the Internet, most of which are free. In the global practice of education, the following trends have been highlighted in relation to the latest educational trends announced by FORBS magazine:

1) distance education as a leader in educational technologies due to the increase in the number of video courses on Your Tube and iTunes, as well as electronic

educational materials;

2) personalization of education - with an emphasis on individual psychological characteristics of the individual, which contributes to increasing his motivation to study, development of intelligence, creativity and creativity;

3) gamification of education, which promotes the implementation of game technologies in non-game situations;

4) interactive textbooks, which should fundamentally change the "traditional" presentation and interpretation of educational material;

5) learning through video games as a unique opportunity to provide knowledge about the real world through interactive immersion in the virtual world [1].

Today, the state of the economy of any country depends significantly on the level of development of its high-tech industries. The world experience of recent decades shows that significant economic indicators are achieved by countries whose economies rely on high technologies in all areas of industrial production. The development and implementation of high technologies contributes to the growth of well-being and balanced technological, economic and socio-cultural development of society. Therefore, during the last 20-30 years, there has been a steady trend of increasing expenditures on scientific and technical development in economically developed countries. From 70 to 85% of GDP growth is accounted for by the share of new knowledge introduced into technology, equipment and production organization in these countries [8].

Currently, the world market of science-intensive products is about 2.3 trillion. dollars per year, while Ukraine's share does not exceed 0.05% of its volume. According to experts' forecasts, the demand for high-tech products in the industrial and consumer markets will reach 3.5-4 trillion in 10-15 years. dollars Understanding the needs of consumers, the ability to realize scientific and technological potential in profitable commercial projects is one of the necessary conditions for successful work in the high-tech market.

The main problem of implementing smart education technologies in Ukraine is related to insufficient understanding of the prospects and all the possibilities of this

product, as well as limited technical capabilities of individual educational institutions (providing access to the Internet, lack of necessary technical and software, etc.). The solution to this problem can be the government's creation of a strategy for the development of smart technologies, aimed at cooperation with leading companies in this field and the production of domestic analogues according to world standards, as well as improving the material and technical support of educational institutions[10].

The training of qualified specialists in the field of smart technologies will allow Ukraine to compete with other countries and produce products that will be used not only in education, but also in other spheres of society. Paying sufficient attention to the technologies of the future and sufficient financial support for smart technologies will allow Ukraine to reach a new level of development.

Bring Your Own Device (BYOD) is a new global concept that is gaining popularity in the USA, Europe and Ukraine, a technology for working with mobile devices, which involves the use of company employees with their own mobile devices (laptops, tablets) , phones) in the workflow. According to IDC, about 95% of company employees already use at least one personal device for work purposes. At meetings with partners, at home, it is convenient to have access to corporate information (database of contacts, projects, price lists, presentations, etc.). According to Cisco, respondents around the world see the benefits of BYOD in increasing productivity and expanding collaboration opportunities, reducing costs by up to 40%. As a concept of corporate IT policy, BYOD was formed in 2009 at the Intel Corporation under the influence of the trend for employees to use their own mobile devices in the work process [13].

BYOD as an IT policy is used by the world's leading universities: Harvard, Stanford, Princeton, Massachusetts, Duke University in the USA, etc. In addition to the concept of BYOD (Bring Your Own Device), popular strategies for working with mobile devices today are also: CYOD (Choose Your Own Device) and COPE (Corporate-Owned, Personally Enabled - "corporate devices , the setting and maintenance of which the employee handles independently."

Recently, Sony released the Vision Exchange platform for interactive interaction

on the global market, which creates a convenient environment for learning and working together. Thanks to it, meeting participants can transfer content to the large LED crystal screen using drag gestures.

The Skype application is built into the platform, you can connect people from anywhere in the world to a video session. Vision Exchange has extensive device support, so students can work on collaborative projects in groups by wirelessly connecting their laptops or tablets to the platform. This allows you to exchange content among yourself and with teachers, add annotations and digital labels to presentations [2].

Conclusions

Traditional education, classrooms where the main figure was the teacher, are evolving - thanks to the system of active learning, the components of which are technologies and platforms for interactive interaction with touch displays, now it is a place where every student can play an active role in the educational process. This creates favorable conditions for interaction between students and the teacher, encourages students to participate more willingly in educational projects.