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## **IMPLEMENTATION OF THE CONCEPT OF A SMART UNIVERSITY IN TERMS OF DISTANCE EDUCATION**

**Abstract.** A theoretical analysis of the requirements of modern society for distance education was carried out, which emphasizes the importance of introducing Smart Education. The main functions of Smart Education, which meets the society's need for open, high-quality distance education, are substantiated. It is noted that Smart Education implements not only basic didactic principles, but also relatively new ones: interactivity, adaptability of learning, flexibility of the educational process. For their implementation, the structure of a Smart course is defined, the development of the components of which is ensured by the use of smart technologies. The needs of the development of the concept of a Smart University are substantiated and its characteristic features are determined. It is established that the implementation of the concept of a Smart University should include scientific research, staffing, educational process, management and marketing of educational institutions, use of modern information technology and digitalization. A strategy has been developed to implement the concept of a Smart University, which is based on the combination of four components "4T": technologies (digital technologies, educational content in free access for students, providing feedback to teachers and students, automation of administrative tasks), tactics (student-centered model, which is based on the appropriate facilities), talents (competent teachers who have a complex of professional competencies, and smart students who are able to develop and improve themselves in the future professional field), traditions (traditions that are supported by modern requirements with prospects for the future). The use of Smart technologies ensures the implementation of the tactics of organizing the activities of a modern university, which is aimed at developing talented students and teachers' professionalism, taking into account the experience and traditions of classical education. The implementation of the Smart University strategy will help create a modern educational environment and provide access to open distance education.

**Keywords:** distance education; Smart Education; Smart University concept; modern educational environment.

## 1. INTRODUCTION

**Problem statement.** The process of the development of the information society, the socio-economic changes taking place in Ukraine and the impact of the pandemic around the world require significant changes in many areas, primarily in the educational industry. The concept of the development of distance education in Ukraine provides for the development of education based on the introduction of the latest pedagogical technologies and scientific and methodological achievements into the educational process, the creation of a new system of information learning environment, Ukraine's entry into the transcontinental system of digital information. The rapid development of distance education has contributed to a new understanding of the learning process and expanded its possibilities. The main features of high-quality distance education are the possibility of learning at any time and from any place, students' ability to independently choose software for learning, unlimited time and accessibility of educational and methodological support. Today, distance learning is becoming more and more relevant, because one of the most important social requirements of today is the informatization of education and the transformation of the information society into a knowledge society.

Thus, the above actualizes the problem of introducing new concepts of educational development. We consider it expedient to rely on the possibilities of distance education and the strategy of an intellectual flexible approach to learning. Implementation and development of the concept of Smart Education, and, accordingly, a Smart University, are seen as a means of innovating education.

**Analysis of recent research and publications.** Theoretical and methodological issues of the implementation of distance education at different levels of the educational process are the subject of research conducted by many scientists in the world community. This is primarily due to the versatility of this task, in particular, in terms of the implementation of the Smart Education concept [1], [2].

According to experts from different countries, Smart Education in the context of the internationalization of higher education should take into account both technological aspects and ethical issues of implementing distance learning, including the specifics of e-learning in inclusive education [3].

The researchers emphasize the need to develop innovative distance learning models of higher education, taking into account the possibilities of global expansion of the world educational space in the context of its modernization [4], [5]. At the same time, scholars argue that distance learning cannot be a substitute for full-time forms of education, as it only complements them and acts as an important element in creating a modern, high-tech and mobile educational environment [6].

In such conditions, it is important to analyse students' perception of the use of digital and educational technologies during distance learning. In particular, the work of Claudia Galarce-Miranda [7] presents the results of a study on students' perception of the use of ICT and educational technologies during the COVID-19 pandemic. Noting the advantages and disadvantages of the impact of the introduction of ICT on the educational process, the researchers argue that the integration of ICT into educational systems will be necessary in the future, as this ensures the flexibility of the educational process and the compliance of the proposed technologies with the requirements of the time.

Another important problem is the development of students' cognitive activity in conditions of distance learning. A number of studies on the use of smart technologies in the educational environment (O.Semenikhina [8], V.Uskov [9], M.Versteijlen [10], M. Berezytskyi [11]), argue that the use of smart technologies in the educational process gives the possibility to effectively organize students' group and independent work; contributes to

the improvement of their practical skills and abilities; facilitates individualization of the learning process; activates cognitive activity, and also makes practical classes more modern.

The traditional education system does not prepare people for work and life in a "smart society". Innovation is impossible without smart technologies. If the education system lags behind these areas of development, it begins to slow down. A group of researchers led by Sergey Yekimov [1], revealing the advantages of distance learning based on Smart technologies, note that this form of education does not solve the problem of adapting the educational process to employers' requirements, but at the same time optimizes learning and brings it to a higher level.

One of the ways to address this problem is the concept of open online courses with a model of self-directed learning (SDL MOOC) presented in the Pinanta Chatwattana study [13]. This concept is based on the combination of new technologies and teaching methods in order to create new ideas and innovations that can improve learning and at the same time directly respond to students' learning experience. To do this, teachers organize an educational environment and create educational materials convenient for students using digital technologies, which contributes to the development of smart universities.

V. Bykov argues that the development of new educational technologies has brought us closer to the creation of distance learning and a new generation of educational institutions – Smart universities, which should make education more accessible and raise it to a qualitatively new level [14].

The need for a qualitative transformation of universities in accordance with the concept of smart education has necessitated research of the key aspects of university that are affected by the digital transformation of education [15]. In particular, Nguyen Thi Huong Giang [16] analysed the characteristics of the digital university model to determine the criteria for assessing the accessibility of the digital transformation process. This makes it possible to introduce a digital transformation readiness system as a benchmark for other universities.

Based on the analysis of scientific research and publications, it can be argued that the issues of distance education have been the subject of scientific discussions for decades. Nevertheless, the possibilities of distance education in the context of the development of Smart Education in general require further research. An important task is to develop a methodology for its implementation, in particular, in emergency situations in Ukraine and worldwide. Based on this, a new concept for the development of universities using the principles of implementing Smart Education, distance learning in particular, is becoming relevant to ensure the development of a Knowledge Society.

**The purpose of this article** is to substantiate the possibilities of Smart Education and present the concept of a Smart University that meets the society's need for open, high-quality distance education.

## 2. RESEARCH METHOD

To conduct the study, a theoretical analysis of the requirements of the modern society for distance education was carried out, in particular, in emergency situations in Ukraine and worldwide. On the basis of the conducted analysis, the need to introduce new concepts of education development was established. We consider the basis of this to be the development of the concept of Smart Education, and, accordingly, a Smart University. The strategy for the implementation of the concept of a Smart University is based on the idea of combining the four components of "4T: technology, tactics, talents, traditions." Modelling the implementation of the concept of a Smart University is carried out taking into account the specifics of learning in modern conditions.

### 3. RESULTS OF THE STUDY

An important component of the training of a modern specialist is distance education. It is based on the use of both the best traditional teaching methods and innovative digital educational resources, as well as on the principles of self-directed learning. Distance education is available to the general population, regardless of financial support, place of residence, health status. Concepts of the development of distance education are approved at the government level in all developed countries of the world. In Ukraine, various aspects of the development of education, in particular European models of distance education, are regulated by a number of regulatory documents: "The National Doctrine of the Development of Education", "The Concept for the Development of Distance Education in Ukraine", "The National Informatization Program", the laws of Ukraine "On Education", "On Higher Education" [17]. To implement these regulatory documents, a Strategy for the Development of Higher Education in Ukraine for 2021-2031 has been developed [18].

The need for a mandatory transition to distance learning, due to the coronavirus pandemic, has intensified the problem of quality assurance of the educational process. This problem includes both subjective and objective components. Firstly, it is teachers' readiness to carry out distance learning using modern digital tools and appropriate didactic methods. Secondly, students' willingness and desire to acquire knowledge remotely, because quite often their education at the university was based on formal class attendance. Students are usually accustomed to going to the university, but not to studying at the university. The third component of the problem is the quality of the content of the educational material for distance learning, which quite often is simply an electronic copy of printed publications. In addition, there are also issues of providing all participants in the educational process with appropriate technical means, high-quality Internet traffic, as well as the task of protecting personal data.

These issues became even more grave in Ukraine with the beginning of the war. After all, conducting distance learning during air alerts, the need to move students and teachers to safer places or the relocation of an educational institution requires, in particular, the involvement of additional psychological and physical reserves against a backdrop of general stress. The specificity of learning in such conditions requires thorough research. In this study, we focus on the importance of ensuring the flexibility and adaptability of the educational process in a remote format, which in emergency situations is no longer a trivial task, but an acute social problem.

The implementation of distance learning based on adaptive principles and intelligent learning environments is provided through the use of the Smart Education paradigm.

#### ✓ *Main principles and characteristics of Smart Education*

The new development strategy of the European Union is built around three interconnected priorities. These are intellectual growth (Smart Growth – development of the economy based on knowledge and innovation), effective economic growth (Sustainable Growth – promoting the development of the economy of the efficient and economical use of natural resources) and inclusive growth (Inclusive Growth – promoting the development of a socially oriented economy with a high rate of employment). Importantly, education at all levels plays a key role in achieving these strategic goals, especially when it comes to smart and inclusive growth. Today, educational institutions are expected to provide students with the appropriate skills to learn, first of all, using the latest technologies, which they will use all their lives.

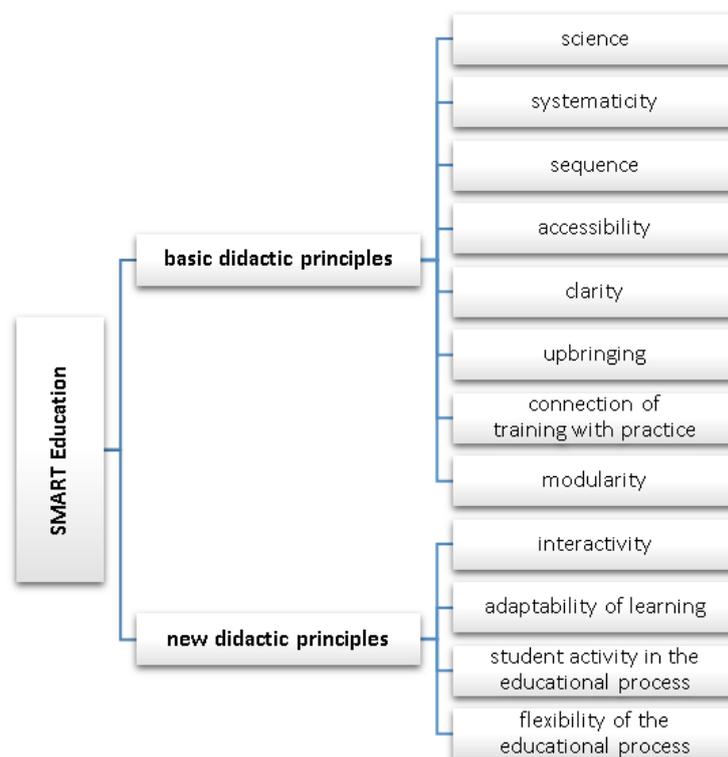
In general, the Smart Education paradigm involves the collaboration of universities and teachers to carry out educational activities on the Internet based on common standards, agreements and technologies. The use of the Smart Education ideology in the educational

process requires thorough didactic developments of creative teachers who are able to model the educational process and predict the results of their professional activities. The ability to design teaching materials according to the Smart Education ideology is one of the professional qualities of a teacher.

Thus, Smart Education should provide:

- flexible learning in an interactive educational environment;
- rapid adaptation of students to a rapidly changing environment;
- free access to educational content;
- formation of skills of the 21st century, students' understanding of the paradigm of "education of the future", which consists in mastering individual methods of continuous acquisition of new knowledge, the ability to learn independently;
- acquisition of skills in working with heterogeneous data and information;
- substitution of the traditional principle "to form knowledge, skills and abilities" with the principle "to form competence".

Thus, Smart Education both provides the implementation of basic didactic principles at a higher level and implements relatively new didactic principles of teaching, which are shown in Figure 1. The basic principles include, in particular, science, systematicity and consistency, accessibility, visibility, upbringing, the connection of training with practice, modularity, etc. Relatively new didactic principles of teaching are interactivity, learning adaptability, student activity in the educational process, flexibility of the educational process, etc.



*Fig. 1. Principles of Smart Education*

It should be noted that by Smart Education or intelligent learning we mean flexible learning in an interactive educational environment using open global active learning content. It is believed that Smart Education will provide the highest possible level of education that meets the challenges and opportunities of the modern world, and will also allow young people to adapt to the dynamic development of modern technologies.

We believe that the implementation of Smart Education will contribute to the implementation of the leading principles of the 21st century education proclaimed by UNESCO: "education for all" and "education through life" [19].

✓ **Key aspects of the Smart University concept**

The development of smart education has led to the emergence of a new concept – Smart University. And although the concept of “Smart Education” is used as a standard in many countries, the content of the Smart University concept is interpreted differently in each country [20].

We adhere to the statement that the Smart University, first of all, should be ready to unite with the global open information and educational space (Figure 2), which provides free access for students and teachers to the world's information resources, meeting students' needs in information products and services, as well as effective information interaction of all participants in the educational process. This, in turn, means that there should be a transition from book to interactive content, requirements for teachers' and students' competencies should change, a new concept of academic and corporate knowledge management should be created [21].

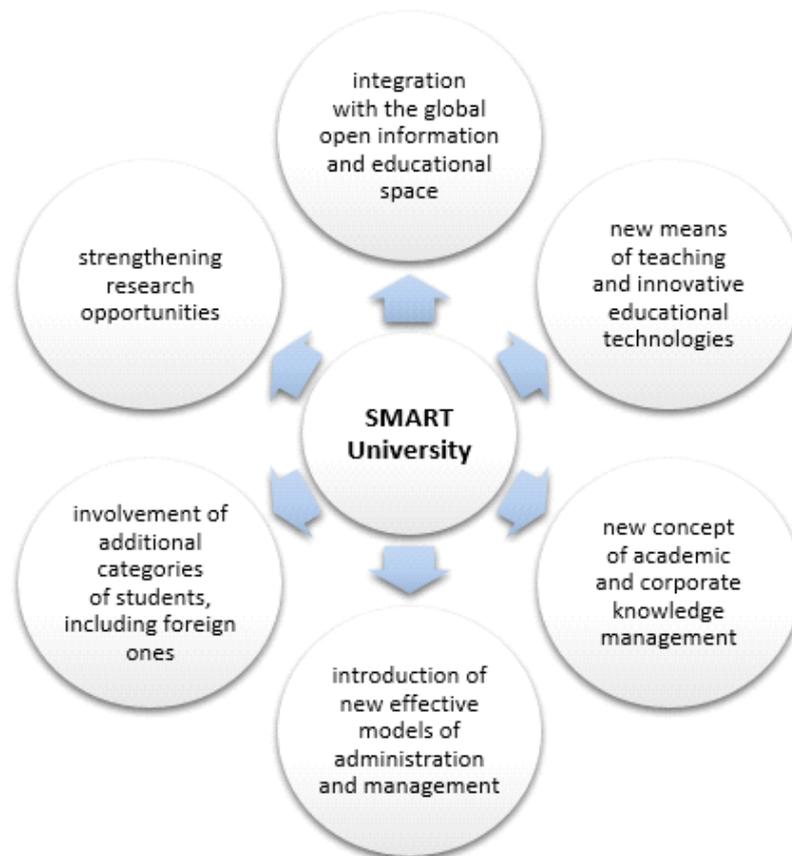


Fig. 2. Defining features of a Smart University

Therefore, for the implementation of the Smart University concept, it is necessary to foresee the relationship of the main components:

- *science* – an open academic community that successfully combines research and project activities, participation in startup development programs, student and teacher mobility programs, scientific giants;
- *personnel* – models of professional and personal development;

- *education* – modernization of the educational process: adaptive learning, hybrid learning, collaborative learning, simulation-based learning, research learning;
- *management and marketing* – flexible approach to the management of the educational process and educational and scientific projects, focused on the dynamic formation of relevant requirements and ensuring their implementation;
- *technologies* – development and implementation of an online platform for teaching students and improving teachers' qualifications, professional development, exchange of ideas and achievements in the educational and scientific field between researchers and teachers of partner universities;
- *digitalization* – IP telephony, electronic document management system, Smart Courses, etc.

The key feature of this concept is that it focuses not only on the technological part. Technologies are a means to implement the possibilities of using distance learning systems, professional development centres, as well as academic mobility programs. Under such conditions, the task of a modern Smart University is to develop students' key competencies (life, professional, digital, communication), human skills of the 21<sup>st</sup> century, including cooperation (teamwork, leadership, understanding of diversity, respect for differences, etc.).

We consider that the implementation of the Smart University concept ensures the achievement of academic goals and the creation of a cohesive, open and interested community of teachers, students, applicants, graduates and other people who understand and appreciate the goals and values of the university. The concept of a Smart University is a model of a modern university that incorporates flexibility, efficiency and openness to progress, with a culture of cooperation and innovation.

We suggest that the Smart University concept implementation strategy be based on a combination of four components "4T"(Figure 3):

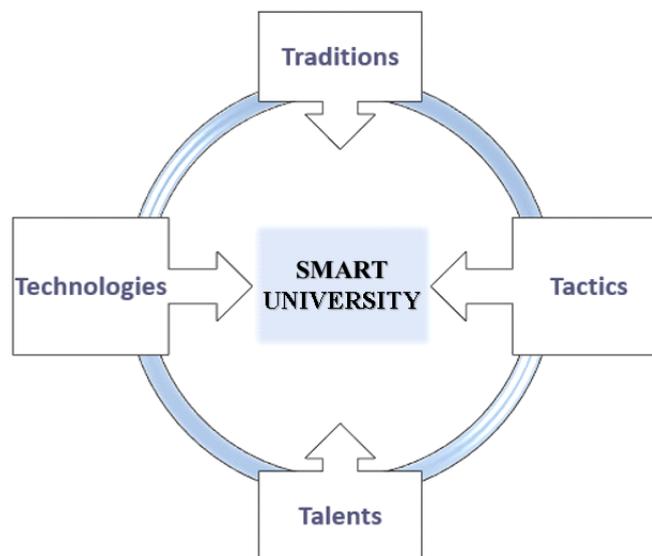


Fig. 3. Strategy for implementing the concept of a Smart University

- *Technologies* – digital components of the university, educational content in free access for students, providing feedback from teachers and students, exchange of knowledge between them, automation of administrative tasks.

- *Tactics* – a student-centered model, which is based on the appropriate facilities for their professional development. This provides positive results for the quality of education, research, working conditions and learning.
- *Traditions* – a rational combination of traditional values, including professionalism, patriotism, integrity, academic freedom and spirituality; a combination of experience and innovation.
- *Talents* – competent teachers who have a set of professional competencies, and capable students who are able to develop and improve themselves in their future professional field.

Features of the implementation strategy of the proposed Smart University concept are demonstrated on the example of Ternopil Volodymyr Hnatyuk National Pedagogical University (TNPU) [22].

### ✓ *Technologies*

To ensure the implementation of the concept of a Smart University, modern smart technologies are being actively introduced at all levels of the educational process. The experience of digitalization of the world's leading universities shows that the deployment of a learning management system (LMS) opens up opportunities for high-quality distance learning and resource savings due to process automation and the rejection of paper workflow, as well as increasing the inclusiveness of education.

To support distance learning at the university, a freely distributed LMS system of distance courses – Moodle is used. This is due to several reasons:

- availability of modern means of communication between students and teachers – chats, forums, e-mail;
- to create training courses, academics do not need to have additional specialized training, it is enough to have basic digital skills;
- these systems are constantly updated and new additions are being created to them;
- no additional software is required to work with them.

It is also important to use free mass open online courses that gradually transform classical higher education, which uses traditional distance technologies, into "smart education". Among the most effective and accessible online resources in various fields from the world's leading scientists and universities, which can be used for self-education, are: Coursera, EdX, FutureLearn, TED and others. Among the most effective and affordable online distance education projects in Ukraine today are: EdERA, Prometheus, Eduhub.

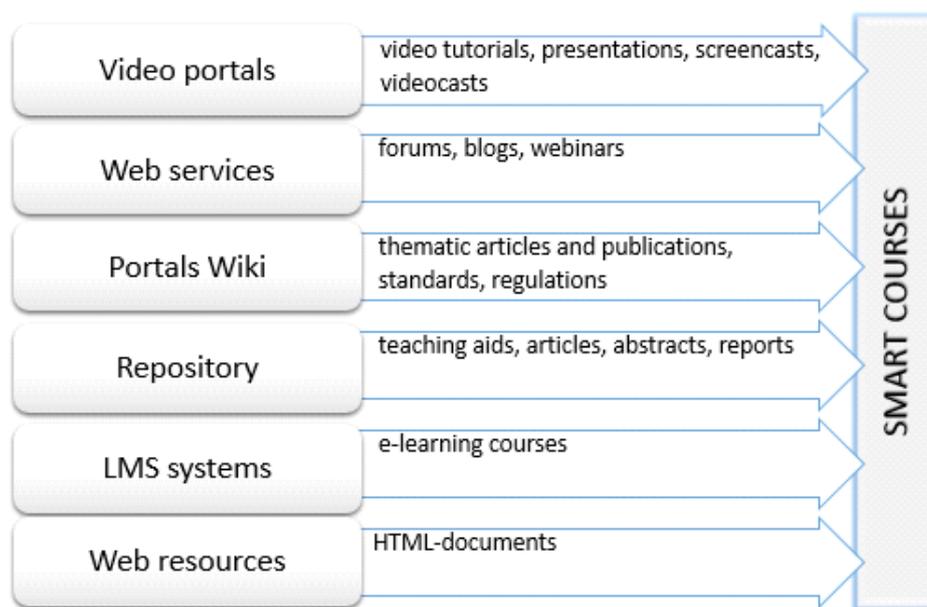
To provide synchronous distance learning (web conferencing, video webinars, lectures, messaging and file sharing, demonstration tools and interactive whiteboards), educators use: Zoom, GMeet, Skype, Viber, Telegram and others. Among the most effective digital services we use for document collaboration, task management and remote workflow are Google services (Google Doc, Google Sites, Calendar and others), Microsoft 365 Education, ProdPad, Asana, iDone It.

The introduction of Smart technologies has a positive impact on the educational process, contributes to the expansion of learning opportunities, enables the teacher to work with individual students and the whole group using any teaching method, and also provides access to various reference systems, electronic libraries and other information resources. The use of Smart Technologies makes learning dynamic, increases students' motivation for learning, and also improves the quality of education in accordance with the demands of the society. We believe that the use of such technologies for the implementation of distance education objectively contributes to improving the professional level and personal development of both teachers and students of higher education.

Therefore, it is important to modernize the methods of training future professionals in accordance with the "Concept of digital competencies", which states the need to develop and implement new educational technologies and digital educational resources aimed at improving digital skills and digital competencies [23], [24].

#### ✓ *Tactics*

The learning process at the university is based on a student-centered model. The focus on satisfying students' requests for professional competencies required by the labour market helps to define promising areas for the development of specialties. This, in turn, affects the content of the components of smart courses developed to provide high-quality educational services in the context of distance education (see Figure 4).



*Fig. 4. Smart Course content filling technologies*

Therefore, today, according to the Smart Education paradigm, a set of new qualification requirements for university teachers is in demand in the distance educational process. These new qualification requirements include: understanding of the didactic potential of innovative components of modern courseware; mastery of the methods of forming the media culture of an individual; ability to use telecommunication virtual environments; knowledge of methods for designing electronic didactic tools.

Skilled professionals are expected to identify the need for important information and be able to formulate a problem and determine successful strategies for solving it. A modern teacher should be ready to implement the following tasks:

- development of a methodology for conducting distance learning, allowing students to master self-education skills and model their future professional activities;
- preparation of multimedia materials for educational purposes: video lectures, electronic publications, web courses and other electronic didactic tools;
- work with electronic documentation (work with the virtual dean's office and training groups in a remote format);
- conducting virtual consultations and maintaining electronic bulletin boards;
- preparation of tasks for adaptive testing and monitoring of the level of students' educational achievements.

These tasks require considerable time for preparation and implementation, as well as adequate organizational and logistical support. In order to ensure the appropriate level of teachers' qualification, it is necessary to conduct appropriate trainings, master classes and seminars. Conducting advanced training courses in a distance format makes it possible to timely prepare the entire scientific and pedagogical staff for the new requirements and trends of Smart Education.

The modern approach to studying according to the student-centered model also provides for the possibility of a student's free choice of academic disciplines, which ensures the flexibility of the educational trajectory. The choice of disciplines is carried out within the limits provided by the relevant educational program and curriculum, in an amount that is at least 25 percent of the total number of ECTS credits of the corresponding level of higher education [25]. Applicants are guaranteed the right to freely choose academic courses not only related to their major, but also from the catalogues of courses at any level of higher education, year of study and specialty of the university. Applicants are free to choose and study academic courses in other institutions of higher education, including foreign ones. The procedure for enrolling in such courses (individual content modules) is carried out as part of the exercise of the right to internal or external academic mobility in accordance with the Regulations on the procedure for exercising the right to academic mobility.

In addition, in order to optimize and improve the educational process, every semester an anonymous survey of students is carried out in a remote format to monitor their satisfaction with the quality of the provision of educational services. Students' suggestions and comments are taken into account in the formation of a strategy for the development of the concept of a Smart University.

Thus, according to the concept of a Smart University, the implementation of tactics based on student-centered model requires the selection and training of high-quality personnel and the availability of modern Smart technologies. This makes it possible to implement a flexible adaptive learning process in a remote format.

It should be noted that the university development tactics take into account the scientific traditions of the institution. This ensures the sustainable development of the university and forms its image as an educational institution that combines fundamental classical foundations with an innovative approach to developing talents among future specialists.

### ✓ *Talents*

An important factor in the development of the concept of a Smart University is the presence of capable students who are able not only to learn, but also to develop in their future professional field. The students are expected to systematically take part in academic competitions, scientific conferences, sports and art events.

Gifted students are discovered in university research clubs. Distance organization of students' scientific activities is based on the use of specialized web resources, which provide information about current research in various fields and activate students' cognitive activity. For example, developing a web resource based on the free Google Sites platform provides information about student research work, as well as access to files and services used to organize collaborative work on projects [26].

Such organization of scientific work in the conditions of distance education contributes to students' motivation, as they realize that doing research is interesting, informative and useful. Research activities improve the development of students' personalities, their public speaking and communication skills, contribute to a more effective assimilation of knowledge in academic disciplines and a successful career in the future.

### ✓ *Traditions*

The desire for change according to the Smart University concept should be rationally combined with traditional values, in particular, professionalism, patriotism, academic integrity, academic freedom and spirituality.

The first main factor in the preservation of traditions is the cooperation of young people and the older generation in the educational process. The combination of experience and innovation contributes to the development of a corporate spirit, which will ensure the transfer of spiritual values and scientific experience to the next generations. To implement these tasks in the context of distance learning, in particular, master classes and open online classes are used. Holding job fairs and educational forums allows students, graduates, teachers and employers to share experiences. It is also traditional to hold open days of the university and each faculty, the celebration of teachers' professional holidays, online tours, etc.

The international activity of the university contributes to scientific forums and conferences organized by teachers and leaders of student self-government. The university implements double diploma programs and projects of various levels. The growth and strengthening of international cooperation is facilitated by the university's membership in international structures, in particular, the Consortium of Ukrainian Universities and Warsaw University, the Association of Rectors of Pedagogical Universities in Europe and the Magna Charta Universitatum.

In general, the implementation of the proposed strategy "4T" of the Smart University concept provides the following results:

- the use of digital technologies in the educational process to improve the quality of education;
- improving teachers' professionalism, necessary for the successful implementation and use of modern digital tools in education;
- continuous analysis of educational data and student reflection opens up opportunities for the university to implement a student-centered approach and provide flexible learning in an interactive educational environment;
- comprehensive digitalization of an educational institution allows optimizing internal processes;
- association with the global open educational space allows students and teachers to consolidate and accumulate knowledge at the university and take additional courses.

## **4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH**

The key to a successful society is the development of modern education, which is based on "smart" infrastructure, which is jointly developed by the state, business, science and citizens.

A theoretical analysis of scientific research on the issue of education development in accordance with the needs of modern society proves the relevance of the problem of introduction of Smart Education. It has been established that Smart Education provides an opportunity to implement both traditional and innovative didactic principles of education (interactivity, adaptability of education, student activity in the learning process, flexibility of the learning process) at a new, higher level. The general structure of a Smart Course is developed through the use of smart technologies.

The necessary components for the implementation of the Smart University concept are science, personnel, education, management and marketing, technology and digitalization. The presented strategy for implementing the concept of a Smart University is based on a

combination of four components "4T: technologies, tactics, talents, traditions". The use of Smart Technologies ensures the implementation of the tactics of organizing the activities of a modern university, aimed at developing talented students and professional teachers, taking into account the experience and traditions of classical education.

So, the implementation of the Smart University concept, which contributes to the development of a modern educational environment and provides open distance education, is relevant. For the further development of the proposed strategy for the implementation of the Smart University concept, we consider it expedient to develop a modern learning complex (Smart tutorials, Smart courses), as well as to introduce an online platform for improving qualifications, exchanging ideas and achievements in the educational and scientific field between teachers of partner universities and their professional development.

The prospects for further scientific research include testing the effectiveness of the proposed strategy through its implementation in the process of training pedagogical staff in modern conditions of distance education at our university.

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## РЕАЛІЗАЦІЯ КОНЦЕПЦІЇ SMART - УНІВЕРСИТЕТУ В УМОВАХ ДИСТАНЦІЙНОЇ ОСВІТИ

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**Анотація.** Проведено теоретичний аналіз вимог сучасного суспільства до дистанційної освіти. На основі аналізу наукових досліджень встановлено, що вирішення цієї проблеми можливе шляхом впровадження Smart-освіти. Визначено її основні функції, що задовольняють вимоги суспільства в потребі відкритої якісної дистанційної освіти. Зазначається, що Smart-освіта дозволяє реалізувати не лише базові дидактичні принципи, а й відносно нові: інтерактивність, адаптивність навчання, гнучкість навчального процесу. Для їх реалізації визначено структуру Smart-курсу, розробка компонентів якого забезпечується використанням розумних технологій. Обґрунтовано потреби розробки концепції Smart-університету та визначено її характерні риси. Встановлено, що реалізація концепції діяльності Smart-університету повинна охоплювати наукову діяльність, кадрове забезпечення, освітній процес, менеджмент і маркетинг закладу освіти, застосування сучасних інформаційних технологій та загальну цифровізацію. Розроблено стратегію реалізації концепції Smart-університету, яка базується на поєднанні чотирьох компонентів «4Т»: технології (сучасні цифрові технології, освітній контент у вільному доступі для студентів, забезпечення зворотного зв'язку викладачів і студентів, обмін знаннями між ними, автоматизація адміністративних завдань), тактика (студентоцентрована модель, яка базується на належній матеріальній базі для їх професійного розвитку), таланти (компетентні викладачі, які володіють комплексом професійних компетентностей; та здібні студенти, здатні розвиватись і самовдосконалюватись у майбутній професійній галузі), традиції (традиції, які підкріплені сучасними вимогами з перспективами у майбуття). Використання Smart-технологій забезпечує реалізацію тактики організації діяльності сучасного університету, яка спрямована на розвиток талановитих студентів та професіоналізму викладачів з урахуванням досвіду та традицій класичної освіти. Реалізація стратегії Smart-університету допоможе створити сучасне освітнє середовище та забезпечити доступ до відкритої дистанційної освіти.

**Ключові слова:** дистанційна освіта; Smart-освіта; концепція Smart-університету; сучасне освітнє середовище.



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