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SMART-EDUCATION AS A FACTOR OF INDEPENDENT WORK

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ABSTRACT: The article examines SMART-education as a factor in the implementation of students' independent work in credit-module conditions , as well as analyzing and defining the main concepts of SMART education and showing the relationship between these concepts. Three important aspects of SMART education are highlighted: organizational, technological and pedagogical. The concept of SMART education is currently associated with a number of concepts, many of which do not have the same interpretation. The first pedagogical component of the SMART education structure is SMART education, which consists of 2 different systems: SMART environment; SMART University. A SMART environment can be formed inside and outside the university, we focus on the SMART environment that manifests itself within the university. SMART University consists of three parts: SMART-campus , SMART-teachers , SMART-students. Since all three components are SMART, they must meet strict requirements. Formation of students' ability to work independently is one of the important requirements of SMART education. The SMART education concept is aimed at providing the highest level of knowledge and skills, allowing graduates to prepare competitive specialists, primarily for higher education institutions.

KEYWORDS: Credit-module education, independent work of students, SMART education concept.

INTRODUCTION

In the Decree "On approval of the concept of development of the higher education system of the Republic of Uzbekistan until 2030" signed by the President of the Republic of Uzbekistan on October 8, 2019, by 2030, 85% of all HEIs in the Republic, including 33 HEIs in the 2020-2021 academic year, will be transferred to the credit-module system. shown.

In today's transition to the credit-module system, the formation of the methodology of independent education of students is of great scientific and practical importance. Organizing students' independent work, developing a mechanism for its implementation, visual, virtual, technological, informative-digitalization in independent work, ensuring the flexibility and variability of independent work trajectories in performing scientific and creative work taking into account the professional interests and wishes of students are among the urgent tasks. .

Independent education has been introduced in all types of education in all mature countries of the world. As a result of the reform of the education system in our republic, the formation and implementation of independent work skills of learners at each stage of the continuous education system has been determined as important.

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The need for independent education, which arose in the 21st century world education system, has become an educational phenomenon not only for the entire society, but also for each individual. The scientific and pedagogical foundations of independent education, the mechanism of its implementation can be seen in the practice of introducing the credit-module system in the field of world education.

In order to ensure the implementation of the legal and regulatory documents adopted on the radical reform of continuous education in the fields of chemistry and biology in the higher education system of Uzbekistan, the President of the Republic of Uzbekistan "On measures to improve the quality of continuous education and the effectiveness of science in the fields of chemistry and biology" dated 12.08.2020 Decision No. PQ-4805 and annexed to this decision "Targeted program to increase the quality of continuous education in the field of chemistry and biology in 2020-2025 and the effectiveness of the ongoing research and innovation work" was adopted. In this Program, the tasks that must be carried out in the fields of chemistry and biology were determined by region, including the works to be carried out in Jizzakh region, and the persons responsible for them, by whom and in which institution were appointed. According to the list of attached specialized schools and departments of higher education institutions, scientific research institutions and production branches to the specialized schools to be established, to the Department of Biology Teaching Methodology of the Jizzakh State Pedagogical University, the specialized base school for biological sciences in the Jizzakh region and general education school No. 8 of the Zafarabad district, Zomin district General education school number 2, Forish district, general education school number 33 was attached for the purpose of development of biological science. Accordingly, it was decided that the teachers of the Department of Biology and its Teaching Methodology will conduct scientific research in research institutes such as the Institute of Botany of Uzbekistan, the Institute of Genetics and Experimental Biology of Plants.

The most urgent issue and task today is to implement educational standards in the educational process. If this task is not fulfilled, the issues of achieving quality and efficiency in the field of education and improving the educational process will remain unresolved.

Based on the above considerations, the goals and tasks for the teaching of biological sciences in higher education institutions are formed from these state and social orders. [2]

The main part.

SMART technologies entered the advanced world education system of the 21st century. Based on the problems of our research "Methodology of implementation of independent work of students in the credit-module education system", we focus on SMART technologies. It is natural to ask what is the essence of the technology that is referred to as "SMART" in many literatures. "As a result of the rapid development of information technologies, which have become an integral part of the modern human environment, SMART education is gradually replacing traditional electronic education," said N.V. Dneprovskaya, - the concept of SMART education is currently associated with a number of concepts, many of which are not interpreted in the same way. Publications on the topic of SMART education appeared a few years ago, and

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they note the main trends in the development of education and create futurological predictions for further changes in the education system. [2]

There are three important aspects of SMART education: organizational, technological and pedagogic, which are an integral part of SMART education, explained researcher D.M. Abidova determines the importance of introducing SMART technologies in the educational field by the following factors:

a) manifested in almost unlimited access to information and global
virtualization that makes its selection algorithm problematic in the world
trend. Today it is known as the interaction of education
is becoming a leading vector both for the subject and for the entire field of education;
b) educational interaction system that acquires a virtual character
inconsistency. [1]

Let's focus on some important research on SMART education research.

Researchers N.V. Dneprovskaya, E.A. Yankovskaya, I.V. Shevtsova's article " Fundamentals of understanding the concept of SMART-education" ("Ponyatiynye osnovy kontseptsii SMART-obrazovaniya") discusses the main elements such as the concept of "SMART", the concept of SMART education, SMART university, SMART textbook. An analysis of the factors affecting the formation and development of the SMART education concept is presented. Three aspects of SMART education development are emphasized: organizational, technological, pedagogical.

The relevance of research is determined by its goals and objectives, as well as theoretical and practical importance. The main goal of the research is to form a number of concepts that should be based on the SMART education concept. Accordingly, the tasks of the research are to analyze, define and show the relationship between the main concepts of SMART education. [2]

In the 21st century, the educational system of Uzbekistan is undergoing modernization of a global character, reforms aimed at updating education in form and content are being implemented. M. recommended for publication by the Research Center for the Development of Higher Education under the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan. Khurramov's methodical guide "Introduction of SMART university principles to higher education institutions" is important for the study of the emergence, development, application strategy, requirements and results of SMART education. [4] This manual is dedicated to issues related to the implementation of the "SMART University" concept and SMART technologies in higher education institutions. The guide covers important issues about SMART technologies and their types, SMART educational campuses and teaching strategies introduced by leading foreign higher education institutions.

" The campus of a higher education institution belonging to the SMART direction , * the educational system and the spread of innovative technologies provide a great opportunity for academic institutions, students, professors and teachers, professional and administrative staff in terms of new, high-tech approaches to improve the quality of teaching strategies and educational outcomes. One of the technological advancements of higher education institutions is to provide highly efficient management of key functions and SMART services.

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SMART education is an association of educational institutions and professors to implement joint educational activities on the Internet based on common standards, agreements and technologies.

It should be noted that the interpretation of the concept of " SMART education" was formed on the basis of the SMART concept. The SMART education concept is a modern education promoted by the Ministry of Education, Science and Technology of the Republic of Korea . This concept began to operate as an educational information policy in 2011. Specific goals of the SMART concept: self-directed (S: self-directed / S: Self-Directed), rich in motivation (M: motivational / M: Motivated), flexible (A: flexible / A: Adaptive), enriched with resources (R: resource-enriched / R: Resource-enriched), technological (T: technology-embedded) education consists of construction. SMART education is based on the following features:

- focusing more on self-education in education

and transition of students from the category of "learners" to the category of "creators of knowledge";

- conscious inclusion of students in the educational process based on practical learning, solving creative problems and individual assessment;

– flexibility of the educational system (adaptation of education and skills to personal preferences of students);

– free distance courses (use of rich "cloud" content);

- use of various technologies that allow students to learn at any time and place. [4]

Based on the above definition, the content and essence of SMART education can be formulated as follows from the subject of "Human Biology" if we direct the purposeful and effective organization of students' independent work. (Image 1)

Commenting on the SMART learning structure in Figure 1.

I. SMART education structure is SMART education, which consists of 2 different systems:

1) SMART environment;

2) SMART University.

II. A SMART environment can be formed inside and outside the university, we focus on the SMART environment that manifests itself within the university.

III. SMART University consists of three parts:

1) SMART-campus;

2) SMART- professors and teachers;

3) SMART students

SMART -campus - university campus , educational buildings, research laboratories , residential buildings for students, libraries, auditoriums, canteens , etc. consists of

SMART -scientific-pedagogical staff must strictly adhere to existing intellectual technologies, take into account the personal requirements and wishes of students .

A SMART- student can use an individual training schedule, constant communication between the student and the teacher, solid learning, and a convenient time and place for studying .

Since all three components are SMART, they must meet strict requirements. That is, educational auditoriums that meet all the requirements for the operation of the SMART educational concept

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in a 24/7 system (24 hours a day, 7 days a week), modern technology educational programs and instrumental technologies for the implementation of educational processes are used in SMART campuses, and provide equal service to educators and learners, research laboratories, information resource center, study hall, ICT center, kitchen and other rooms should be available.

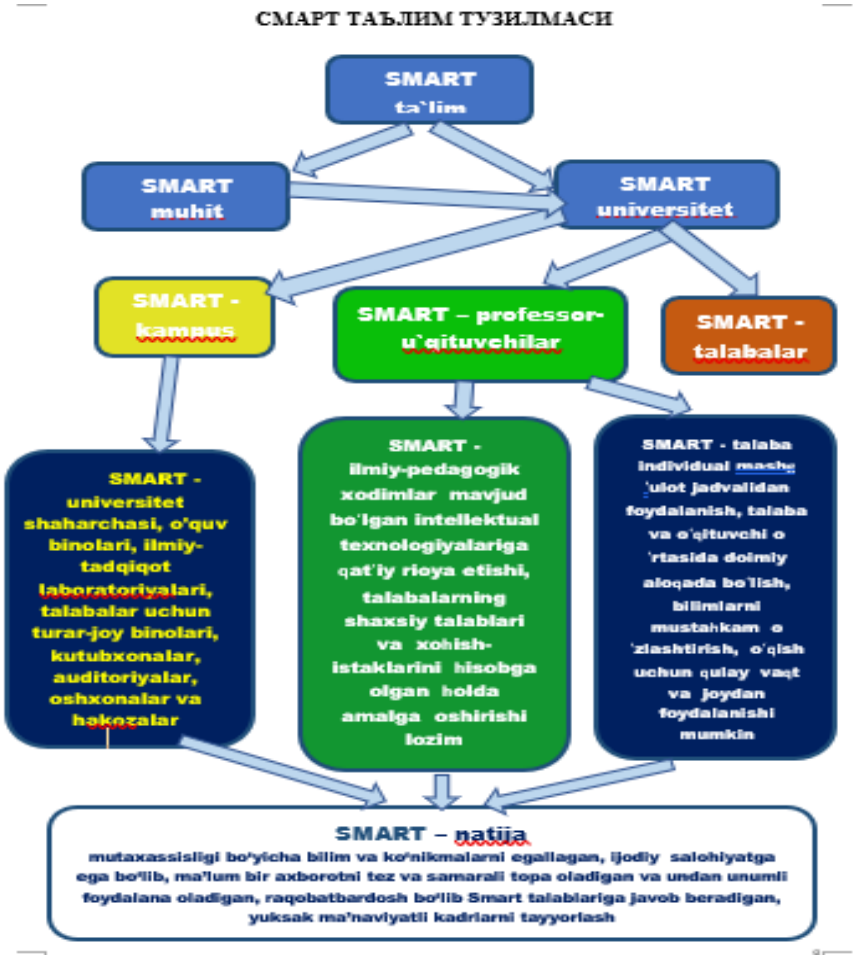

Image 1

The implication of this image is that SMART education requires a SMART environment, and SMART university status requires a SMART campus that meets all requirements. * Most importantly, SMART professors and SMART students should be interested in such modern education. The SMART result is the training of highly morale personnel who have acquired knowledge and skills in their specialty, have creative potential, can quickly and effectively find certain information and use it effectively, are competitive and meet the requirements of SMART. "The main elements of the SMART system are SMART student youth, SMART pedagogy and SMART environment. In addition, the student is the main subject of SMART education. With the educational process oriented to the SMART system, it should be aimed at acquiring skills and competencies that meet the requirements of the time for effective use of students in their work and personal life. Since the main goal of SMART education is to develop young students in all aspects, to prepare them to work in a modern dynamic environment" [4], we believe that forming the ability to work independently in them is one of the important requirements of SMART education.

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CONCLUSION

We are sure that the strategy of organizing, implementing and evaluating students' independent work from the elective subject "Human Biology" on the HEMIS platform, as an example of the biology education course, reflects this form of undergraduate education as a component of SMART educational technology. It is possible to make a futurological prediction that the independent work of students in the preparation of the future SMART specialist will have a high pedagogical effect.

In conclusion, in our credit-module education system, conventional classroom and e-learning, which serve as auxiliary means of traditional teaching, with limited practical applications, will gradually be replaced by SMART education. The SMART education concept is aimed at providing the highest level of knowledge and skills, allowing graduates to prepare competitive specialists, primarily for higher education institutions. The formation of independent thinking and independent working skills in students will help them become SMART teachers working in the SMART education system in the future.

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