

## FUNDAMENTALS OF USING STEAM TECHNOLOGY IN PRESCHOOL EDUCATION SYSTEM OF UZBEKISTAN

**Nigmatova Mavjuda Mahmudovna**

Associate Professor of the Department of Preschool Education, Bukhara State University

[mavjuda.nigmatova@gmail.com](mailto:mavjuda.nigmatova@gmail.com)

**Mirzayeva Dilfuza Shavkatovna**

Senior Lecturer, Department of Preschool Education, Bukhara State University

[d.sh.mirzaeva@gmail.com](mailto:d.sh.mirzaeva@gmail.com)

**Hakimova Nargiza Supxonovna**

Lecturer, Department of Preschool Education, Bukhara State University

[Nargizahakimova23@gmail.com](mailto:Nargizahakimova23@gmail.com)

**Rajabova Lobar Choriyeвна**

Lecturer, Department of Preschool Education, Bukhara State University

[lbrrajabova@gmail.com](mailto:lbrrajabova@gmail.com)

### ANNOTATION

This article about the organization of reading in presidential schools on the basis of the STEAM educational program is radically different from secondary schools, with the fact that in 9-11 classes students also have the opportunity to acquire individual knowledge by choosing certain subjects depending on their interest. Because one of the main tasks of the presidential schools is the in – depth training of natural and Exact Sciences, the assimilation of innovative knowledge by students, the disclosure and development of their scientific and creative potential.

**Key words:** educational technology, organization of reading in presidential schools, certain subjects

### INTRODUCTION

STEAM educational technology is the methodology of teaching schoolchildren in a new way; it is different from traditional teaching methods. It is designed to educate students on four subjects (Science), Technology (Technology), Engineering, (Engineering), Fine Arts (Art), mathematics (Math) at the same time. STEAM is an integrated training system on topics, and not on science.

STEAM education is understood to apply scientific and technical knowledge in real life with the help of practical training.

The organization of reading in presidential schools on the basis of the STEAM educational program is radically different from secondary schools, with the fact that in 9-11 classes students also have the opportunity to acquire individual knowledge by choosing certain subjects depending on their interest. Because one of the main tasks of the presidential schools is the in – depth training of natural and Exact Sciences, the assimilation of innovative knowledge by students, the disclosure and development of their scientific and creative potential.

The Steam approach textbook and tutorials were published by prestigious publishers like Cambridge University Press, including Oxford University Press and Collins. The main advantage of the training program that Cambridge offers is to emphasize the formation of relevant modern knowledge and skills in students, proceeding from the principles of the world labor market.

In addition to qualified local teachers in teaching these subjects to the students, foreign teachers also give lessons in cooperation. Work is carried out in cooperation with the recruiting companies “Teachaway” (Canada) and “TIC Recruitment” (UK), which have many years of experience in this direction in the recruitment of highly qualified foreign specialists.

Depending on the interests and characteristics of students of 9-11 classes, Education in the presidential school is carried out in an individualized way.

Graduates of presidential schools, in accordance with the established procedure, prepare for admission to international prestigious higher educational institutions, in addition to the certificate, attestation, approved by the state.

STEAM technology, unlike education, provides for the transfer of knowledge not separately, but in a mutually exclusive way. The reader will be able to think in a non-standard way, find a few solutions to the problem and form creativity heart and this is very hand in his future career.

IT named after Al-Khwarizmi is also widely used in the educational process of the school using STEAM technology. The main purpose of this study is to create an opportunity for students to apply their knowledge gained in the lesson in practice and apply it to life.

The school also has rooms for robotics, technics, as well as a STEAM room, which includes a modern interactive platform, work guns, sewing machines, weaving machines, Arduino platforms and 5 different types of cutting and grading equipment. Interestingly, this equipment is redesigned by the students, allowing them to perform a different look and function. At school, STEAM and robotics classes are conducted in mutual harmony.

#### **MATERIALS AND METHODS**

In the current era of technology development, robotics is one of the promising areas. Special attention is also paid to this area at the IT School named after Al-Khorezmi.

Through robotics classes, students will acquire the following knowledge and skills:

- C programming language
- Fundamentals of electronics
- Make simple and complex schemes
- 3D design and 3D modeling
- Extraction of 3D models from a 3D printer
- Arduino programming
- Work with transistors and microchips
- Work with additional modules and sensors (RGB, WiFi, PIR, LCD display, RFID)
- Independently design various Arduino projects

All graders have a great interest in the subject of robotics, and so far they have developed several projects and are engaged in research on future projects.

Such as USA, Singapore, Korea, Australia, China, United Kingdom, Israel in many countries implemented state programs in the field of STEAM-education being.

Every day from new to New-new types of work, as well as new areas of specialization it turns out that this should force today's educators to think.

The knowledge and skills of the students they are teaching are on the current demand is it compatible?

In many countries, STEAM education is higher for the following reasons

priced: in years, IT professionals, top programmers, engineers, close friends in the world specialists in technological production and other similar there is a sharp shortage of specialties; now it is difficult to imagine the future of the profession in the future, the future of the subject matter, all of them have a high level of technology in connection with the Natural Sciences refers to technological production. Especially bio-and nanotechnology the need for specialists increases;

future professionals who have comprehensive training and are different areas of education: from Natural Sciences, Engineering and technology they are required to have knowledge. STEAM training to master the knowledge with real skills teaches. It is not the only thing that readers think about, the main thing is to allow his thoughts to be realized in reality.

Today, all spheres of life in New Uzbekistan have become an arena of deep reforms. It is impossible not to wave about the changes in the educational system, which is considered the basis of the social sphere in this process. In recent years, practical work on the organization of all stages of the educational system on the basis of modern requirements has entered a decisive stage in our country.

As noted by the president: "the more educated our children come out of school, the faster the economy sectors based on high technologies develop, the more social problems they can be solved. Therefore, if I say that the threshold of the New Uzbekistan begins with the school, I think that all our people will support this idea."

The main part of the reforms carried out in the field of education, of course, is the reforms in the higher education system. In particular, the establishment of priority directions of the structural reform of higher education in the Republic of Uzbekistan, qualitatively upgrading the process of training highly qualified personnel who think independently, modernization of Higher Education, the conference on the development of the higher education system of the Republic of Uzbekistan until 2030, approved by the decree of the head of our state on October 8, 2019, in order to develop social and economic sectors based on advanced educational technologies, serves as a debouche for new reforms in the field.

This document was based on such tasks as accelerating development, training of competitive personnel, effective organization of scientific and innovative activities and development of integration of Science, Education and production in order to strengthen international cooperation.

The content of the conference reflects the priorities of the reform of the higher education system of our country. It includes the expansion of the level of coverage in higher educational institutions, the improvement of the quality of education, the introduction of digital technologies and educational platforms, the involvement of young people in scientific activities, the formation of innovative structures, the commercialization of the results of scientific research, the achievement of international prestige and many other specific directions. All this serves to raise the educational process to a new level of quality.

It is no secret to anyone that today the world-famous institutions of higher education are considered major centers of science. Now new universities, branches of leading universities of the world are being established. For

example, in the last 5 years, 47 new higher education institutions, including branches of foreign universities, have been established in our country and the number of higher educational institutions has reached 125.

On the basis of the system of Public-Private Partnership, the activities of non-governmental higher education institutions are launched. Having studied the opinion of the population, correspondence and evening forms of Education have been restored; quotas for admission are being increased. The level of coverage of school graduates in higher education reached from 9 percent in 2016 to 25 percent in 2020.

It was created to ensure the professional development and internship of professors and teachers in higher education and research institutions abroad. Their monthly salary amount.

On average, it has increased by 2,5 times compared to 2018 year. Since this year, 10 higher educational institutions have been transferred to the system of self-financing.

The fact that the number of state grants allocated to higher education was increased by at least 25 percent, the number of grants for girls of families in need of admission to higher education increased by 2 times and reached to 2 thousand further increased the scope of coverage for higher education.

One of the most important innovations in the education system was the transfer of 65 academic lyceums to the disposal of higher educational institutions with the aim of increasing the unity between higher education institutions and the lower sections of the education system, as well as the attachment of 187 technical schools to the universities and Network Enterprises.

In conclusion, the work in the field of education is not inferior to the reforms in other areas, with the forthcoming tasks, its relevance and practical importance. Because the continuation of the reforms in this sphere on a wider scale is a period demand.

In the XXI century, which was called the age of Information Technology, the development of Science in all spheres of life – industry, construction, chemistry, agriculture, textile, mechanical engineering and other spheres, the creation of innovations in this regard became a vital necessity. This process is now recognized in all countries of the world that are on the path of development. Special attention is paid to this process in our republic.

It is not surprising that the president of our country, his activity as a leader, began with a meeting with academicians, leading scientists of our country, in general, people of science, aimed at harmonizing the development of Science with the development of production in our country.

After that, the head of our state issued a decree on the development of "the Congress on the development of Science up to 2030", on the establishment of the International Center of Imam Termini and on the implementation of the strategy of actions for the further development of the country, on the improvement of the health care system, on the development of the, the fact that the upgrade of Science in their decrees was defined as one of the main issues was also a practical expression of this principle.

Of particular importance is the reliable protection of property in the process of developing science and innovation, turning their achievements into a product with high added value.

## **RESULTS AND DISCUSSIONS**

According to data, the share of intellectual property is 45 percent of gross domestic product in Europe, 12 in China, 7 in Russia. The meeting, which was chaired by the president of our country on October 12, 2020, was also dedicated to the topic "protection of property – will serve as a reliable foundation for the third period of awakening". Then the head of our state paid special attention to the need to ensure cooperation between patent holders and entrepreneurs.

In particular, one of the most important documents adopted in the education system was the adoption of the law "on education «in the new edition. According to this law, the main printing materials in the field of education, the educational system, types and forms are clearly defined.

Also, according to the law, the state Higher Education, Secondary specialized, professional educational institutions and their branches, Higher, Secondary specialized, professional educational organizations with state participation and their branches were established by the decisions of the president or the government. It was established that the establishment of non-state educational institutions was carried out by their founders. The license to non-state educational organizations has been issued by the state agency for quality control of Education.

Accordingly, we can say that the adoption and introduction of this law into practice has also become one of the most important documents adopted in the field of Education.

The reforms carried out in the field of education in Uzbekistan in recent years have been consistently carried out at the Namangan State University. Consequently, in the next three years the number of faculties reached from 9 to 15, 27 to 46, 31 to 52, and 12 to 26, respectively, the number of Master's specialties. Accordingly, the number of student youth of the University wishing for knowledge has grown from 5100 to 21000 people.

The number of professors and teachers reached from 470 to 710. Until the 2018-2019 academic year, the university had 26% of scientific potential and no specialized Council of any specialty was functioning. In the following years, great attention was paid to the issue of training scientific pedagogical personnel, the scientific potential exceeded 37 per cent, to ensure the quality of Education 9 specialized councils of 12 specialties are functioning today. Of course, in this regard, the purpose of filling the ranks of scientific and pedagogical personnel

of the University with potential personnel was determined from the account of doctoral students studying in 17 base doctorates.

Until recently, the university was preparing specialists mainly for the pedagogical sphere. At present, the university has established and managed the institutions of Archeology, culture and art, sociology, jurisprudence (by types of activity), Library-Information activity (by types of activity), Zooincenery: fishery, fruit and viticulture, technology of cultivation and processing of medicinal plants, vegetable production, gardening and potatoes, organization and maintenance of the greenhouse farm, Social Work (by different spheres of activity), organization and management of the hotel, And the fact that from 2021 year began to train personnel in such directions as therapeutic work, pediatric work shows that our university in a real sense is becoming the center of reason of our region.

#### CONCLUSION

As a major research center of the University, the university participates in major international scientific projects such as the establishment of a media center at Namangan State University, the organization of educational-practical training on aquaculture, "preparation of medicinal drinks from medicinal plants", the technology of production of medicinal prophylactic sumac, the creation of a rare and endangered and living collection of ended species.

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