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PROSPECTS FOR THE INTRODUCTION OF INNOVATIVE CLUSTER METHODS IN TEACHING COMPUTER SCIENCE IN THE GENERAL SECONDARY EDUCATION SYSTEM OF TASHKENT REGION

Abstract: *The article provides that the provision of potential staff related to improving the quality of teaching in the system of general secondary education can be achieved through the formation of partnerships between the relevant facilities in the joint to provide teaching and methodological resources related to the disciplines. Ways to further develop pedagogical cooperation through the introduction of modern innovative models in the system to implement these reforms are described.*

In addition, the Chirchik State Pedagogical Institute of Tashkent region is working to create an innovative cluster of pedagogical education in the regional general secondary education system in order to study and analyze the existing shortcomings in the education system of Tashkent region and to integrate and develop the system to address these problems. The model distributes specialists in general education subjects taught in general secondary schools, including the prospects for the development of the subject "Informatics and Information Technology" in the region.

Prospects for the introduction of innovative cluster methods in teaching computer science in the general secondary education system of Tashkent region

Key words: education, computer science, Informatics.

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Introduction

The general secondary education system is the first link in the chain of training a healthy generation and potential personnel for the society. The development of the system will also directly increase the quality of education. However, the education system depends not only on the material and technical base, but also on the potential of teachers who can use this supply. Today, the need for such personnel remains high. Because there is no link between preschool, secondary education, higher education, master's degree and other academic education. In general, knowledge in the secondary education system should grow from simple to complex, and in higher education, this knowledge should be further updated

and strengthened. But no matter what subject you take in secondary education today, you can observe disparities in curriculum, plan, and content. A simple example is that the information in textbooks in the field of computer science is spiritually outdated. Alternatively, general secondary schools lack staff who can fully use the computer provided to computer classes. Because information communications, information technologies are being rapidly updated. For some reason, science lags behind the opinions and practical experiences of members of society. Therefore, textbooks, visual aids, e-textbooks will have a positive effect only if prepared in cooperation with the Ministry of Public Education, the Ministry of

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Higher and Secondary Special Education and leading teachers of general secondary schools.

The main part. Chirchik State Pedagogical Institute of Tashkent region is working to study and analyze the existing shortcomings in the system of general secondary education in Tashkent region, to create an innovative cluster of pedagogical education in the regional system of general secondary education.

Through the use of this innovative approach, it is possible to coordinate the directions of pedagogical education in the region, plan for the future, ensure communication and integration between stages of education, eliminate disparities in the activities of educational entities, meet the needs of teachers in the region. Currently, the developing countries are using the "Cluster" model to address shortcomings in various areas. This tested method is being used in agriculture, manufacturing and other industries of the country and giving its results. Therefore, the Chirchik State Pedagogical Institute of Tashkent region has identified the creation of an innovative cluster of pedagogical education as its priority strategic direction.

To increase the effectiveness of the integration of general secondary schools and higher education institutions in the region can be achieved by ensuring the interaction that increases the competitiveness of educational institutions within the cluster .

The education system is one of the areas that is more prone to various reforms. This is due to the fact that the demand for specialists in various fields is constantly growing, the emergence of new professions, which also means the need to improve the quality of education. By quality of education we should mean that not only students but also teachers as participants in the learning process achieve certain results. Different stages of the education system in our country are divided into sections, these stages are inextricably linked with each other. The general secondary education system is the foundation of education from the earliest stages of the system. Therefore, in order to improve the quality of education, it is necessary to pay special attention to this stage, to use the experience of developed countries in order to identify and address shortcomings, to introduce innovative methods as in other areas.

The training of highly qualified, mature specialists who will contribute to the socio-economic development of the country is directly related to the development of the education system.

There are a number of pressing issues in the development of young people in the regions in the development of all-round intellectual, moral, aesthetic and physical abilities in the field of providing educational institutions with qualified teaching staff. As a solution to these issues, the Chirchik State Pedagogical Institute of Tashkent region was established on the basis of the Decree of the President

of the Republic of Uzbekistan dated July 27, 2017 No PP-3152. In addition to the establishment of this educational institution, the main tasks are set out in the provisions of the resolution. One of these tasks is to solve the scientific and methodological problems of the development of pedagogical education in the region, to conduct research aimed at the introduction of advanced foreign pedagogical technologies and the wide involvement of talented students in scientific activities.

Various normative documents reflecting the state policy in the field of education have been adopted by our government. Every country needs to start with the development of the education sector for future social and economic development.

At present, the education system of our country is going through a very important transition period, as it is connected to the technologies used in the European education system, which requires the solution of urgent tasks such as the formation of a new type of education. World experience shows that it is impossible to build a national innovation system without establishing and developing cooperation between educational institutions, all institutions operating in the field of education, research centers, public authorities and local governments, institutional investors, the private sector.

The interaction of a new species in the education system, such as social dialogue and social partnership, is now perceived as an education cluster. An education cluster is a teaching based on a chain of science-technology- business innovations on a horizontal link within the education system and the tools of peer-to-peer and self-learning .

As a result of the analysis of integration processes in the secondary education system, the need for an "innovative cluster" in the development of effective methods of teaching a particular subject, the solution of existing problems and the implementation of the necessary measures is highlighted.

At the initial stages of organizing the activity of the innovative cluster of pedagogical education created by the Chirchik State Pedagogical Institute of Tashkent region, the institution was designated as a cluster center and all the disciplines in the system were divided into appropriate departments. The department of "Informatics" of the Institute is working on an innovative cluster on the subject of Informatics and Information Technology, one of the leading disciplines in the system of general secondary education.

In order to improve the quality of education in the system, modern innovative pedagogical technologies are being created, creating a cluster method that requires the integration of resources (science teacher, district, city, regional, national education department, specialists in the relevant ministries) and the formation of educational clusters that act as regional structures.

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An innovative education cluster is a flexible system that includes interconnected objects (educational institutions, organizations, scientific schools, higher education institutions, research institutes, private sector, etc.) in the field of innovative educational activities in order to solve specific problems and achieve tangible results.

The purpose, content and need to improve the teaching methods, of computer science and information technology imposes a huge responsibility on specialists and officials in this field. The main purpose of teaching this subject at school is to pay more attention to the initial level of the field of information technology, which makes a significant contribution to the economic development of the fastest growing country in the world.

The peculiarity of the innovative cluster model in teaching the subject "Informatics and Information Technology" is the formation of an integrated system within the science in the region.

The main process in the application of the cluster model in science teaching is planned to be as follows.

• Identification of innovative cluster participants in teaching the subject "Informatics and Information Technology";

• Develop a road map

• study and analysis of existing shortcomings in the teaching of science by participants;

• Defining the integrity and sustainability of the development of science teaching as the most important priorities;

• Transformation of the integrated scheme of development of science teaching in the system into a unified system;

• implementation of cluster projects;

• organization of a source of information;

The applied method is an innovative approach to the organization of interaction between schools and universities, based on the nature of the basic principles of interaction between schools and universities, to describe specific examples of the pedagogical group as a means of cooperation between school and university.

In this way, in order to introduce an integrated system of school and higher education, many factors are set, in particular, new requirements for changes in basic education programs. As a result of the changes, there will be a modernization of the pedagogical

mechanism, updated requirements for students studying in the field of "Pedagogical Education".

According to the above plan, the direction of interaction in the science education cluster in the formation of the list of cluster participants in the field of informatics and information technology in the region and the organization of the structure of interaction is to establish mutually beneficial relationships between individual cluster elements.

The participants were specialists of the regional department of public education of the department "Informatics", heads of public education of the district on science and teachers of science of exemplary schools in the districts.

The participants of the organized cluster will analyze the following features in the teaching of computer science and information technology in secondary schools in the region:

• The problem of human resources in science;

• Level of knowledge of science teachers;

• Determining the level of knowledge of students in science (as a result of competitions in the field of science in the districts);

• Preparation of methodical materials and manuals on science;

• Material and technical base. (computer technology and Internet connections)

Based on the experience and new ideas of developed countries in the implementation of cluster projects, a school laboratory on computer science and information technology was established in the region on the basis of a bilateral agreement with the regional secondary schools and the Department of Informatics of Chirchik State Pedagogical Institute. A special room was set aside in the school and the room was equipped with visual aids belonging to the cluster model. A plan has been developed in the established school laboratory to establish an integral link between the school and the higher education institution. Practical work is being carried out on the basis of this plan. As an example, seminars are organized at the school by professors and students of the department.

The innovative cluster model in the teaching of "Computer Science and Information Technology" in the general secondary education system is an important way to work with any structures that have goals and interests in the development of the teaching process of this subject.

References:

1. (n.d.). Retrieved from <http://lex.uz>
2. Stenyakova, N.YE., & Gruzdova, O.G. (2017). Klasternaya model organizatsii partnerstva

obrazovatelnix uchrejeniy. *Internet-jurnal «Mir nauki»*, Tom 5, p.3.

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3. (2016). *Pasport. Innovatsionniy «Obrazovatelnyy klaster: «Investitsii v budusheyey» Sankt-Peterburga na 2016 - 2020 godi*, p.7.
4. Ivanovna, Y.YE. (2017). Obrazovatelnyy klaster kak resurs innovatsionnogo razvitiya regiona, *Sankt-Peterburgskiy obrazovatelnyy vestnik*, pp.9-10. UDK 377.
5. Pudenko, T.I. (2014). Obrazovatelniye klasteri kak model upravleniya razvitiyem obrazovaniya na munitsipalnom urovne, povishayushaya dostupnost kachestvennix obrazovatelnix uslug. *Institut upravleniya obrazovaniyem RAO. Upravleniye obrazovaniyem: teoriya i praktika*, Moskva, № 3.
6. Parshin, N.M., & Kalistru, N.A. (2015). Sovremenniye problemi dopolnitelnogo obrazovaniya kadrov na proizvodstvennix predpriyatiyax. *Organizator proizvodstva*, № 2, p. 65.
7. (2013). *Pilotniye innovatsionniye territorialniye klasteri v Rossiyskoy Federatsii*. Pod red. L. M. Goxberga, A. YE. Shadrina. (p.9). Moscow: Natsionalnyy issledovatel'skiy universitet VSHE.
8. Porter, M., et al. (2010). The Massachusetts Higher Education and Knowledge Cluster: The Microeconomics of Competitiveness.
9. Sokolova, YE. I. (2014). Termin «Obrazovatelnyy klaster» v ponyatnom pole sovremennoy pedagogiki. *Neprerivnoye obrazovaniye: XXI vek.*, № 2 (6), pp.153-160.
10. Tuberozova, M. V. (2015). Razvitiye yedinogo pravovogo obrazovatel'nogo prostranstvav klastera obrazovatel'nix organizatsiy. M. V. Tuberozova. *Tvorcheskoye naslediyeye A.S. Posnikova i sovremennost*, № 8, pp.129-132.
11. Korchagin, YE. A. (2007). Sotsialnoye partnerstvo kak mexanizm upravleniya obrazovatel'nim klasterom. *Innovatsii v obrazovanii*, № 6, pp. 43-51.