PEDAGOGICAL EDUCATION CLUSTER AS A SCIENCE

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ABSTRACT

In this article, modern teaching technologies, methodological approaches related to them are considered to create favorable conditions for teachers to form necessary knowledge, important laws, and many fundamental concepts in a relatively light, deep and strong manner.

Keywords: Innovative cluster of pedagogical education, cluster model, cluster system, subjects of the cluster system, classical cluster, artistic cluster.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

In our republic, the innovations in the field of science and technology need to be quickly incorporated into the content of educational programs, and through this, the ground is prepared for the formation of modern knowledge. Including modern teaching technologies, methodological approaches related to them, create favorable conditions for teachers to form necessary knowledge, important laws, many fundamental concepts in a relatively easy, deep and solid way.

In order to increase the quality and efficiency of education, teachers' knowledge and professional skills should be adapted to the requirements of the times, their rational use of existing educational laboratory and technical equipment in the course of the lesson, the quality and efficiency of the organized practical laboratory training, and the use of advanced pedagogical technologies of each subject for the student to acquire knowledge at a high level. it is required to ensure that it is carried out.

Fundamental improvement of the education system, determination of target areas of training of qualified specialists, especially continuous improvement of professional qualifications and knowledge level of pedagogues should be one of the most urgent issues.

It is significant that in the Address of the President of the Republic of Uzbekistan to the Oliy Majlis on the most important priority tasks for 2019, special emphasis was placed on the relations between science and education, education and socio-economic life, among the current issues.

Therefore, the center of the education system is human capital, its proper distribution, its appropriate use and purposeful orientation, in which preschool, general secondary education and higher education system is integrated with all interested parties of society and all subjects of the educational process based on the requirements of the time. organization and achieving full continuity of education should be the main factor before us.

The sharp changes that have taken place in recent years require new innovative approaches to all spheres of society's life, the need to re-examine existing views, concepts and relations with the mirror of progress and efficiency criteria.

Honorable President Shavkat Mirziyoyev has begun to pay serious attention to the reform of the education system, the fundamental improvement of the quality of personnel training, including the application of the experience of developed foreign countries to the system. Reforms in this regard were reflected in the Presidential Decrees dated March 14, 2017 "On measures to further improve the activities of secondary special and vocational education institutions" and August 8, 2017 "On improving the activities of the Ministry of Public Education of the Republic of Uzbekistan".

The results of the analysis show that coordination of pedagogical education directions, perspective planning, lack of communication and mutual harmony between the stages of the educational system, dispersion in the activities of educational subjects caused the lack of full satisfaction of the need for pedagogic personnel in the region and a decrease in the quality of education.

Based on the initiatives of the Rector of Chirchik State Pedagogical University, scientist of the Republic of Uzbekistan G.I. Muhamedov, a new system related to the creation of an innovative cluster of pedagogical education at Chirchik State Pedagogical University has been defined as its priority strategic direction, and certain works are being carried out based on this system. This system should be implemented with the implementation of the cluster method, which is considered effective in light industry, a number of sectors of agriculture, and production sectors of the economy, into the educational process.

In fact, there is a chain of sequence of production, re-production and transformation of raw materials into a finished product and its realization in production networks, and this sequence is also present in the pedagogical education system in the form of human capital. This shows that it is theoretically possible to use the cluster model, which is effective in production, in the educational system.

Based on the high social importance of pedagogical education in the sustainable development of society, it is necessary to develop the educational system by transferring continuous pedagogical education to the system of innovative cluster development, ensuring interrelationship between science and educational systems in solving modern requirements, problems in the system and their solution.

Pedagogical education innovation cluster is a unity of all types of education, scientific research institutes and centers, practice bases, scientific and scientific-methodical structures in the continuous education system, and their shared tasks allow to achieve high quality by raising the result of the quality efficiency of the pedagogical education system to a new level. .

The main goal of the cluster is to implement the educational, scientific, and innovative potential of its members, not only with a high level of citizenship and professional competence, but also with competitiveness, the ability to accept innovations, and the ability to design and implement new educational programs and technologies. .

The cluster system of the development of pedagogical education and training carries out activities in the general directions related to education, creation of new educational literature, increase of scientific potential of pedagogic personnel, integration of education and training. Currently, these general directions are reflected in such directions as management and organization of education, ensuring coherence and integration between types and directions of education, and the use of teaching methods and tools.
The following participate as entities of the cluster system:

- preschool, general secondary, secondary specialized, higher and joint educational institutions, where students, masters, doctoral students undergo pedagogical practice, educational, scientific research, innovative and design activities, which serve as educational and experimental bases;
- in accordance with the updates at different levels of education, institutions of the joint educational system of adults, institutions of retraining and upgrading the qualifications of pedagogical personnel of preschool, general secondary, secondary special vocational education of children and adolescents;
- scientific and scientific-methodological structures, centers, scientific research institutes engaged in collaborative scientific research activity and defining it;
- pedagogical communities, initiative communities, public associations, state and non-state organizations;
- foreign higher education institutions and scientific centers.

The cluster system unites the subjects, each of which carries out separate activities, around a common goal, and at the same time, each subject acts on the basis of private interest based on the common goal. The subjects of the cluster system support and control each other, each of them creates the spiritual and intellectual space of a separate cluster, expands its social influence and importance.

Pedagogical education innovation cluster is based on the principles of connection, coherence, consistency, modernity, orientation, mutual cooperation, like-mindedness, interest.
The main purpose of the activity of the pedagogical education cluster is as follows:

- promotion of the best students effective in the field of pedagogy to the profession of pedagogue;
- conducting professional training of pedagogues based on practice and intensively ensuring effective communication with interested parties;
- creating an environment for training future education specialists based on practices with innovative experience;
- shortening the period of acquisition of professional knowledge, skills, qualifications of young specialists;
- to ensure direct participation of students in today's rapid development processes;
- creation of a new generation of educational, educational-methodical, scientific literature, tools and didactic materials in the process of pedagogical education;
- increase the effectiveness of scientific, scientific-pedagogical potential of pedagogical education;
- integration of intellectual resources around current issues of pedagogical education development;

- search for different forms and types of education, science and pedagogical practice and apply them to education;
- development and improvement of mechanisms that ensure the integrity of education and training;
- to create an opportunity for quick reconnection with pre-school, secondary and higher education institutions and other applicants in the training of pedagogic personnel;
- scientific justification of the necessity of connection, dependence and cooperation in the process of pedagogical education.

Based on these goals, the innovative cluster of pedagogical education performs the following tasks:

- training of pedagogical personnel with modern knowledge, skills and qualifications for educational institutions in the region;
- effective use of innovative pedagogical technologies to improve the quality of education;
- consistent establishment of scientific activity in the field of pedagogy;
- ensuring consistency and continuity of the content of the main (textbook) and auxiliary (dictionaries, dictionaries, electronic resources, etc.) tools in the cross-section of educational stages in order to increase the effectiveness of education;
- in order to fill the gaps in the knowledge level of the teachers of educational institutions in the region, to organize temporary training courses in cooperation with the Department of Public Education of the region;
- to organize and implement scientific and practical seminars in cooperation with the Regional Department of Public Education in order to eliminate the problems related to the teaching of subjects in secondary schools;
- to strengthen scientific cooperation with scientific research institutes, scientific centers and basic higher education institutions in order to increase the scientific potential of professors and teachers at the institute and to establish experiments in accordance with international standards;
- focus on attracting teachers who have the ability to conduct scientific research in general education schools;
- implementation of internships in leading foreign higher education institutions in order to assimilate advanced foreign experiences in the field of pedagogy.

In this case, it is appropriate to ensure a continuous and continuous communication between educational institutions and other interested parties of the society, to create scientific, creative, spiritual, educational and economic opportunities for the final product of the educational process - to train all-round mature pedagogic personnel and benefit the society.

Because the level and competitiveness of personnel's knowledge, skills and qualifications is the basis of development and competitiveness of economic production, industry, agriculture and other areas of society. The experience of developed countries and life itself clearly shows that the quality and efficiency of every work we start is closely related to this issue.

Implementation of education based on the competence approach in teaching subjects, students' ability to apply their acquired knowledge in life, conscious choice of profession, development of independent learning skills using information and communication technologies are among the main priorities.

After all, in the process of education, it is important to form the basic knowledge, skills and competencies of students, such as communication, working with information, self-

development, socially active citizenship, national and general cultural, mathematical literacy, awareness and use of science and technology innovations.

After the independence of our republic, certain steps were taken to achieve the effectiveness of the innovative cluster of pedagogical education in all areas, including science branches and continuous education system. This radical reconstruction of the educational system expanded the possibilities of easy acquisition of knowledge by students. Methodologically defined a continuous system of training specialists capable of working in modern technologies.

Fundamentally reforming the education system, raising it to the level of modern requirements, establishing a new system of national personnel training, and raising a competent, potential generation for the future should be the current priority of state policy.

At the next stage of the national program, it is a priority to improve the quality of education, to introduce innovative pedagogical and information technologies in this process, and to achieve the quality and efficiency of education.

Qualification requirements of general secondary education in our republic consist of requirements for mandatory exams and final results of educational content in general education subjects, the volume of training loads and the quality of education, and it consists of the following (Table 1).
Carrying out the educational process with the use of innovative educational technologies, their effective use allows creating a new psychological environment for students, managing and organizing this process on a modern basis.

Table 1: **Basic requirements**

№	Name	Content
1.	Knowledge	Remembering and re-explaining the information learned in the educational process
2.	Skill	Ability to apply knowledge learned in practice in familiar situations.
3.	Qualification	To be able to apply the knowledge and skills learned in work in unfamiliar situations and create new knowledge.
4.	Competence	The ability to apply existing knowledge, skills and abilities in daily activities in any situation.

Conducting the educational process with the use of innovative educational technologies, their effective use allows to create a new psychological environment for students, manage and organize this process on a modern basis.

It is important to use the innovative cluster of pedagogical education in order to improve the content of the educational process.

The term "cluster" is a French word, and the Uzbek translation means "connection", "group", "gathering". "Cluster" is the basis of the theoretical art, and it is Alfred Marshall's opinion about the combination of specialized industries in separate areas in his book "Principles of Economics" (1890), written at the end of the 19th century.

Cluster is a pedagogical method that develops the variability of thinking, the ability to establish comprehensive connections of the studied topic (concept, phenomenon). The main goal is to prepare students to perceive new information

Given that a cluster is a system that includes a whole region from planting to production of finished products, it can be used in all areas of agriculture.

A cluster is a collection of work. For example, cotton was grown. It must now be converted into fiber to produce a product. In the next step, the fiber is turned into yarn and the yarn into fabric. In the last step, a fabric product is produced.

A cluster is a group of enterprises united in a specific field and closely related to each other.

A cluster is a group of manufacturing enterprises located in one geographical area and forming one network.

A cluster is a group of related and complementary organizations and institutions operating in one geographical area in special fields.

A cluster is a group of enterprises that are functionally related horizontally and vertically.

A cluster is a group of related and complementary enterprises, research and development institutions in collective, private and semi-collective form.

A cluster is a group of commercial and non-commercial organizations, which serves to ensure the competitiveness of each enterprise operating in the group.

A cluster is an industrialized complex that unites suppliers of goods and raw materials, main manufacturers, based on territorial concentration and connected to a technological chain. The cluster diagram is shown in Figure 3 below:

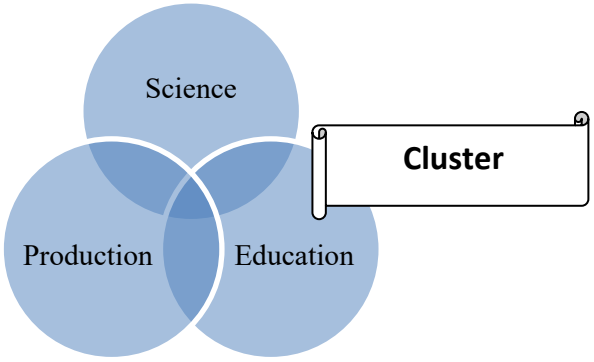

Figure 3. Cluster diagram

There are different types of clusters: classic cluster; paper cluster; cluster with numbering of words to make a story; a cluster that used individual or story pictures instead of writing words; group clusters using different parts of the same topic in each group to create a collective story; reverse cluster; grammatical cluster.

Classic cluster. At the beginning of the lesson, the teacher writes the topic (key word) in the middle of the board and asks the students to write in their notebooks, think about this topic and write down everything related to this topic. After a few minutes, she invites students to brainstorm, then share them with the whole class and write them on the board. For example: metal, tin and copper alloy, bronze age, stronger than copper, tools. For more complex topics, students can be helped, for example, by major categories. Bronze Age, culture, periods, classes, population. The teacher either gives additional categories, or helps students with leading questions, helping students to formulate them independently.

Paper cluster. It can serve as a tool to develop not only writing, but also reading skills. In this case, students receive individual words, sentences, or even small text cards on a given topic. The reader reads them, arranges them, if necessary, pastes them on the sheet in a certain order around the key word. Clusters are then examined, discussed and graded - at the teacher's

discretion. Preparing a paper cluster does not necessarily have to be the task of the teacher. This work can be a great homework for students.

Cluster with word numbering. It is appropriate to use such a cluster when it is necessary to determine the sequence of events when composing a story or verbally presenting a topic. This method is very suitable for working with those who are learning a foreign language, because it is most difficult for them to determine the sentence order in the text: where to start the presentation of events, how to develop it and how to end it. A word-numbered cluster is created as a team in the following way: the topic (key word) is written in the middle of the board, and then students name all the words and phrases that come to mind in connection with this topic. After all the vocabulary words suggested by the students are written on the board, the class begins to discuss the sequence of events in the story.

The teacher helps with the leading questions and together with the students puts the sequence numbers next to the words written on the board: next to the words that should be used in the first sentence, he puts the number 1, and the second - the number 2. Recommendation: to make it easier for students to move in the cluster and not to skip words when writing a story, you can write numbers with colored pencils.

For example: 4 delicious cakes, drink tea, music, gifts, treatment. "Birthday" theme. Eat, invite, games, dance, congratulations, flowers, birthday, guests, fun, salads, sandwiches, birthday boy, sing, friends.

1. Aziz's birthday is today.
2. He invited his friends.
3. They congratulated the birthday person, gave him flowers and gifts.
4. First they ate salad and sandwiches, then they drank tea and ate delicious cakes.
5. After the meal, the guests listened to music, danced, sang and played various games.
6. Everyone had a lot of fun.

Artistic cluster (cluster with pictures). Clustering using story pictures instead of writing words is an effective way to work with students and learn a large topic when learning a foreign language for the first time. The principle of creation is the same. A picture on a certain topic is pasted in the middle of the sheet, around which students stick or draw its components. Ready-made pictures can contain only one object (object, living creature, some color, etc.) or the whole plot (natural phenomena, human activity, etc.).

Theme art cluster. For example, the topic "Vegetable salad". A bowl of salad is drawn or stuck in the center of the sheet. Students should choose vegetables from the pictures offered to them and paste (draw) them around the main theme. Students then tell the cluster what their salad consists of. Studying feudal society from the perspective of history, a similar cluster can be formed along the feudal caravan.

Theme art cluster. For example, the topic of occupation of people at different times of the year. In the center there are 4 people dressed according to the seasons. There are 4 signs of seasons around: snow, rain, snow drop, sun. Behind them are several pictures of students sledding or skiing, swimming and sunbathing, picking vegetables in the fields. 2-3 pictures for each season. History can be used to study the occupation of people in different periods.

Group cluster. It involves dividing fragments of the same topic into groups and creating a collective story. For example, on the subject of "Saki". One group includes the cluster "Saka

groups and their habitats", the second - "Saka professions", the third - "Saka social system", the fourth - "Saka wars for independence", the fifth - Saka culture.

On large sheets, finished clusters are glued around the main subject. Each group tells a part of the story in their cluster (or another part in someone else's cluster - according to the teacher's decision), the rest help, fill in, and then each of them writes a separate story about the saks.

Back cluster. This type of cluster is used in the test phase in order to arouse interest among students, to activate them and to determine the topic of the lesson or for lexical work at other stages, and at the same time to clarify the main idea and essence. content, idea (at the stage of reflection - generalization, conclusion) It is structured as follows: additional categories or main components are recorded, a question mark is placed in the center or an empty frame is marked, the key word, topic, topic of discussion is recorded. For example, at a difficult stage, the teacher shows the students the following cluster and asks them to name the topic of the lesson: 550 BC e., Cyrus the Great, 525 BC Egypt, Darius - the most powerful ruler, 538 BC Babylon e. Royal Road, Capital Persepolis.

Students must decide for themselves that the subject of the lesson will be the Ancient Kingdom of Persia. At other stages, they can create reverse clusters for their classmates or other students - while they are reading the text or from memory. This will help them to review and reinforce the topic, activate their vocabulary, and further use of student clusters will help the teacher to test the students' knowledge of the topic content and their vocabulary. Each of them contains a specific type of question.

Simple questions: questions that need to name, remember and repeat some facts. What?, When?, Where?, How?.

Clarify questions. Such questions usually begin with the following words: So, you mean ...?, If I understood correctly, then ...?, I may be wrong, but, in my opinion, you ... ?. The purpose of these questions is to provide an opportunity for the student to reflect on what has just been said. Sometimes they are asked for information that is not known but implied.

Explanation questions. They usually ask, Why? and aimed at establishing causal relationships. Why do leaves on trees turn yellow in autumn? If the answer to this question is known, it becomes simple from interpretation. Consequently, these types of questions work when there is an element of independence in the answer.

Creative questions. Includes control of the order of questions, convention elements, controls. What will change ..., What if?. How do you think the plot will develop? Then in the story...?.

Assessment questions. These questions are aimed at clarifying the criteria for evaluating the identified events, events, and facts. Why is something good, but something bad? What is the difference between one lesson and another? How do you feel about the character's actions? and others.

Practical questions. This type of questions is aimed at establishing a relationship between theory and practice. How can you apply...?. What can be done from ...?. Where can you observe in everyday life ...?. How would you be in the place of the hero of the story?

Summary. Different techniques, methods, technologies are not the goal. The result is important. The teacher must measure his achievement against the student's achievement.

Confucius said: He who turns to the old can discover new things, he deserves to be a teacher. Therefore, when setting goals, it is necessary to look at what has already been done.

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