

# PRACTICAL SIGNIFICANCE OF THE “I HEARD-I SAW-I DID” PRINCIPLE IN THE “PEDAGOGICAL EDUCATION INNOVATION CLUSTER” IN TEACHING NATURAL SCIENCES

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## Abstract

this article discusses the methodology of the approach to the student’s personality through the “I heard-I saw-I did” principle in the teaching of natural sciences according to the pedagogical education innovation cluster, and the effectiveness of its application in practice is based on it.

**Keywords:** pedagogical education innovation cluster, individual approach, “I heard-I saw-I did”, teaching natural sciences, personal development, education and upbringing.

## TABIY FANLARNI O’QITISHDA "PEDAGOGIK TA'LIM INNOVATSION KLASTERI" DOIRASIDA “ESHITDIM-KO’RDIM-BAJARDIM” TAMOYILINING AMALIY AHAMIYATI

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**Annotatsiya:** ushbu maqola tabiiy fanlarni o’qitishda pedagogik ta’lim innovatsion klasteriga binoan talaba shaxsiga "eshitdim-ko'rdim-bajardim" tamoyili orqali yondashuv metodologiyasi yoritilgan bo'lib, amaliyotda qo'llash samaradorligi asoslangan.

**Kalit so'zlar:** pedagogik ta'lim innovatsion klasteri, individual yondashuv, "eshitdim-ko'rdim-bajardim", tabiiy fanlarni o'qitish, shaxsiy rivojlanish, ta'lim va tarbiya.

## Introduction

Today, the creation of a new mechanism in the higher education system has become a vital necessity, in which it is necessary to ensure mutual control, competition, and satisfaction of interests between types of education. Based on the high social importance of higher education in the sustainable development of society, modern requirements, problems in the system and the fragmentation between the educational, scientific and industrial sectors in solving them, today necessitate the transition of continuous pedagogical education to a cluster development model.

The first steps in this regard have been taken at Chirchik State Pedagogical University. The "Innovative Cluster of Pedagogical Education" has been identified as the main strategic research direction of the university. The scientific theoretical foundations of the clustering of pedagogical education and its practical aspects are being studied.



The main product of the pedagogical education cluster is educational services. The cluster should be aimed, first of all, not at the implementation of educational services, but at providing competitive education in changing market conditions. Competitive education requires constant innovation, modernity and balance between supply and demand. In this process, the activity directed towards educational services shows growth indicators.

In this regard, the theoretical foundations of the educational cluster have been developed as the "Chirchik Model", and its extensive scientific and practical development is being applied to all areas of education.

In international practice, the spread of cluster initiatives and the formation of national policies in the field of cluster development began in the mid-2000s and became widespread in 2010. In this regard, in countries such as the USA, Denmark, Norway, Finland, Sweden, China, Russia, India, Belarus, Kazakhstan, the process of clustering education, science and production is actively being continued, specialized information and analytical infrastructures are being created. According to the European Cluster Cooperation Platform, in 2017 there were 460 educational and production clusters in the European Union.

This pedagogical project was developed with the aim of achieving specific pedagogical results and strengthening the links between educational efficiency and the distance learning platform in practice with its solution. The process of developing a pedagogical principle and its implementation proceeds in stages:

- 1) analyzing the initial results of the educational process,
- 2) taking into account personnel assessment and material and technical conditions,
- 3) identifying problems and contradictions in educational practice,
- 4) formulating and theoretically substantiating an idea that will serve as a basis for changing the components of the educational process,
- 5) building an online learning model of the educational process based on a modern electronic platform;
- 6) connecting students' theoretical knowledge with practice through creative laboratories and independent work;
- 7) achieving the expected result through the principle of gradual changes in the educational process.

The development and implementation of a pedagogical-innovative principle model allows students to consolidate their theoretical knowledge through practice. During the learning process, students first master a part of the topic through a lecture given by a science teacher, then they see this process being carried out in the laboratory, and then they independently perform these experiments, gaining a complete understanding and skills about the topic.

The principle is implemented in three stages:

1. Information is provided by the teacher based on a lecture;
2. Laboratory work is demonstrated using a video lesson;
3. This laboratory work is performed independently by students, and the effectiveness of achieving the predetermined goals is analyzed based on statistical data;

This principle in education contributes to the full functioning of "Lecture + practical work + laboratory + independent learning".

Since the main emphasis in the credit module system is on independent learning, in this regard,



the principle of “I heard-I saw-I did” effectively benefits students’ independent work and the formation of personal competencies in subjects.

When developing a model of the innovative pedagogical principle, it is important to understand the essence of the process of achieving the educational goal (predicted, intended result) due to the interdependence of the factors of the educational process. The goal of the educational process determines the specific features of the content of education and the methods of activity for its mastery.

The innovative cluster of pedagogical education is based on the principle of “I heard-I saw-I did”; providing methodological support to general education schools (teaching natural sciences) of a higher educational institution, improving the quality of education, and continuous professional development of teachers;

To increase the coverage of higher education by organizing the “Electronic Platform of Continuous Vocational Education” and directing graduates to the profession, developing skills in effectively organizing classes and the educational process based on innovative pedagogical technologies;

to conduct scientific research on ensuring integration, innovation, coherence, continuity, consistency, and effective succession in the field of pedagogical education;

to organize pilot-testing processes of scientifically based innovative principles, to create the opportunity for rapid reconnection with preschool, secondary education, higher education institutions, and other applicants in the training of pedagogical personnel;

to integrate intellectual resources around topical issues of the development of pedagogical education;

The structure (model) of the roadmap of the innovative pedagogical principle “I heard-I saw-I did” is considered the basis for the effective organization and implementation of the educational process. The implementation of the principle includes psychological-pedagogical, socio-pedagogical, and methodological work.

The purpose of the principle of "Hear, See, Do" is to create results that are capable of achieving a specific and measurable goal within a certain period of time. A clearly defined goal is the key to the perfect and effective implementation of the task. The three pillars of the principle are considered to be the leading ones.

The pedagogical-innovative principle is organized in three stages, providing an opportunity to connect and consolidate theory with practice. If at the 1st stage it is determined that students have mastered 40-50% of the knowledge that needs to be mastered, and at the 2nd stage it is determined that students have mastered 60-70% of the knowledge, then at the last stage the educational effectiveness indicator is predicted to reach 80-100%. The coefficient of knowledge acquired by students participating in the practical implementation of the principle is proven on the basis of statistical data.





PTIKning “ESHITDIM-KO’RDIM-BAJARDIM” tamoyili

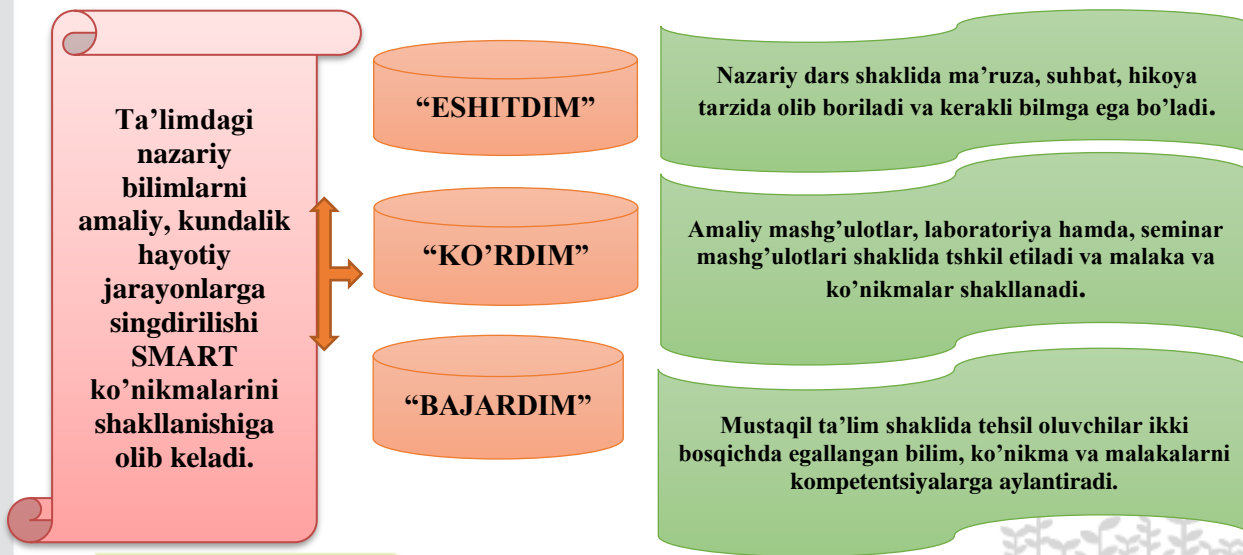


Figure 1. Methodological structure of the "Heard-Seen-Do" principle of PTK.

It leads to the integration of theoretical knowledge in education into practical, everyday life processes and the formation of practical skills.

"I heard" - Theoretical lessons are conducted in the form of lectures, conversations, stories and acquire the necessary knowledge.

"I saw" - Practical classes are organized in the form of laboratory and seminar classes and skills and abilities are formed.

"I did" - In the form of independent education, students transform the knowledge, skills and abilities acquired in two stages into competencies.

**ZOOLOGIYA DARSLARIDA “ESHITDIM-KO’RDIM-BAJARDIM” TAMOYILINING QO’LLANILISHI**

«SUVA HAM QURUQDAYASHOVCHILAR SINFI»

**ESHITDIM - BOSQICHIDA EGALLANADIGAN BILIMNI NAZARIY DARS SHAKLIDA - MA’RUZA, SUHBAT TARZIDA ESHITIB O’RGANADI.**

**KO’RDIM - BOSQICHIDA NAZARIY BILIMLARNI AMALIY VA LABORATORIYA MASHG’ULOTLARIDA KO’RIB O’RGANADI.**

**BAJARDIM – BOSQICHIDA TALABA ESHITIB , KO’RIB O’RGANGANINI AMALIYOTGA O’ZI MUSTAQIL BAJARIB JORIY ETADI.**

*Qurbaga misolida tuzilishi va hayotiy faoliyati*

*Ayitish tizimi. baliy singari, ikkita magnitral buyrak bilan idrolanadi, ularning xarakteridagi xarakter xususiyatlaridir. Ajratilishning asosiy mohiridir. Kalkuletsida. Sog'lik pufkagida ayitish kimbogaga, o'ziga ayitish pufkaga kiradi. Ular k'f'ingandan ko'ng, ayitish yana kimbogaga, keyin esa tashqariga chiqibadi. Eritiladi under (pufkaga) tashqari yoni bir funktsiyani bajaradi. Ayitishni, ayitishni o'ziga chiqibadi.*

Figure 2. Didactic structure of the "I heard-I saw-I did" principle.

In conclusion, it can be said that the implementation of the cluster model in the education system activates the mechanisms of activity related to all of the above-mentioned forms of innovation. The cluster covers the most important areas in the education system, such as the management system, integration processes between educational entities, areas of scientific research and the development of educational tools, and requires the application of modern approaches to them. Therefore, the pedagogical education cluster model, with its relevance to the entire system and its comprehensiveness, long-term design, and updated approach to activity, can be considered as an innovation related to the field. The principle of “Hear-See-Do”, which is a special principle of the pedagogical education innovation cluster in teaching natural sciences, is widely studied and applied in the scientific works of masters and researchers.

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