MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN

KHOJA AKHMET YASSAWI INTERNATIONAL KAZAKH-TURKISH UNIVERSITY

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FORMATION OF READINESS OF EDUCATION QUALITY DIAGNOSTICS

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ANNOTATION

Pedagogical diagnostics in the school is seen mainly as a practice of identifying the quality of educational activities, the reasons for its successes or failures. It can also be applied in the scientific direction to improve this practice.

In modern conditions of gradual transition to diversity in education and upbringing, to democratization of educational interactions, to the weakening of centralization and the increasing role of managerial decisions at the school and teacher level, accurate and comparable information about the strengths and weaknesses of the phenomena and processes occurring in the school.

Such information can be provided by pedagogical diagnostics, because its purpose in the school is expressed in the following basic functions: feedback, evaluation, management.

Completeness and objectivity of information in the initial diagnosis maximizes the planning of educational tasks to the real needs of the class and corresponds to the optimal development of children.

Key words: pupil, teacher, knowledge, qualities, diagnostics, monitoring, method, reception, pedagogy, evaluation.

АҢДАТПА

Мектептегі педагогикалық диагностика негізінен оқу-тәрбие қызметінің сапасын, оның жетістіктері немесе сәтсіздіктерінің себептерін анықтау тәжірибесі ретінде қарастырылады. Оны ғылыми бағытта тәжірибені жетілдіру үшін қолдануға болады

Заманауи жағдайында білім беру мен тәрбиелеудің алуан түрлілігіне біртіндеп көшуі, тәрбиенің өзара әрекеттесуін демократизациялауда, орталықтандырудың әлсіреуі мен мектеп және мұғалім деңгейінде басқарушылық шешімдердің рөлін арттыруда, мектепте орын алған құбылыстар мен процестердің күшті және әлсіз жақтары туралы дәл және салыстырмалы ақпарат үлкен маңызға ие болуда.

Мұндай ақпаратпен педагогикалық диагностика қамтамасыз етеді, себебі оның мектептегі мақсаты келесі негізгі функцияларда көрініс табады: кері байланыс, бағалау, басқару. Бастапқы диагностикадағы ақпараттың толықтығы мен объективтілігінің максимальды дәрежесі білім беру міндеттерін жоспарлауды сыныптың нақты қажеттіліктеріне жақындатады және балалардың оңтайлы дамуына сәйкес келеді.

Кілт сөздер: оқушы, мұғалім, білім, сапа, диагностика, мониторинг, әдіс, тәсіл, педагогика, бағалау.

АННОТАЦИЯ

Педагогическая диагностика в школе рассматривается в основном как практика выявления качества учебно-воспитательной деятельности, причин ее успехов или неудач. Можно ее применять и в научном направлении для совершенствования этой практики.

В современных условиях постепенного перехода к разнообразию в обучении и воспитании, к демократизации воспитательных взаимодействий, к ослаблению централизации и повышению роли управленческих решений на уровне школы и учителя все большее значение приобретает точная, сопоставимая информация о сильных и слабых сторонах явлений и процессов, происходящих в школе.

Такую информацию может предоставить педагогическая диагностика, потому что ее назначение в школе выражается в следующих основных функциях: обратной связи, оценочной, управленческой.

Полнота и объективность информации при начальной диагностике в максимальной степени приближает планирование воспитательных задач к реальным потребностям класса и соответствует оптимальному развитию детей.

Ключевые слова: ученик, учитель, знания, качества, диагностика, мониторинг, метод, прием, педагогика, оценка.

ÖZET

Okuldaki pedagojik teşhisler, temel olarak eğitim faaliyetlerinin kalitesini, başarılarının veya başarısızlıklarının nedenlerini belirleme pratiği olarak görülmektedir.

Bu uygulamayı geliştirmek için bilimsel yönde de uygulanabilir. merkezileşme zayıflamasına ve okul düzeyinde yönetim kararlarının rolü ve öğretmene eğitim etkileşimlerin demokratikleşmesine eğitim ve öğretim, çeşitlilik için kademeli geçiş Modern koşullarda okulda gerçekleşen güçlü ve olayların zayıflıklar ve süreçleri konusunda giderek daha önemli, doğru, karşılaştırılabilir bilgiyi haline geliyor.

Bu tür bilgiler pedagojik teşhis ile sağlanabilir, çünkü okuldaki amacı aşağıdaki temel işlevlerde ifade edilir: geribildirim, değerlendirme, yönetim. azami ölçüde tamlığı ve ilk tanı bilginin nesnelliği sınıfının gerçek ihtiyaçlarına eğitim hedeflerini planlama getiriyor ve çocukların optimal gelişimine karşılık gelir.

Anahtar kelimeler: öğrenci, öğretmen, bilgi, nitelikler, teşhis, izleme, yöntem, resepsiyon, pedagoji, değerlendirme.

CONTENTS

NORMATIVE REFERENCES

This master project has used links to the following standards:
- “Postgraduate education-master’s. Basic rules” State educational standards of the Republic of Kazakhstan 5.04.033-2008
- Typical rules of current control, midterm, final attestation of pupils’ progress in higher education institutions. Order of the Ministry of Education and Science of the Republic of Kazakhstan from 24.04.2008 № 5194.
- About higher scientific-pedagogical education. Regulation (master’s) of the Ministry of Education and Science of the Republic of Kazakhstan dated May 16, 2005 Order No. 303.
- Decree of the Government of the Republic of Kazakhstan of August 23, 2012 № 1080 "On approval of state educational standards of appropriate levels of education".
- Decree of the Government of the Republic of Kazakhstan dated May 17, 2013 No. 499 "Standard rules of activity of higher education institutions".
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DEFINITIONS, DENOTEMENTS AND ABBREVIATIONS

Educational diagnostics is the process of identifying educational outcomes of pupils with the aim of analysing, evaluating and correcting the learning process of teachers.
Diagnostics is a clear definition of the results of a didactic process.
Examination is the detection and measurement of knowledge, abilities, skills.The purpose of the examination is to determine the level of pupils' academic performance and the extent of their academic work.
Observation is the control over the process of knowledge, skill and ability acquisition.
Evaluation is the process of evaluating the quality of pupils or their achievements.
Assessment is the result of the evaluation process and it is given in numbers (points system)
Observation is primarily an active cognitive process, based on the work of a person's senses and his materialistic activity.
Comparison allows establishing similarities and differences in objects and phenomena of reality. Comparison leads to a generalization of two or more objects.
Experiment is an intervention for reading in special cases when certain aspects of objects and phenomena are made without complicating the natural conditions of objects or phenomena or the accompanying circumstances.
Analysis is a study of one element as a single element in general, separation of the research object or phenomenon into elements.
Synthesis is the inclusion of the elements of the research object into one object.
Prognosis is probable future comments on the status of the phenomenon.
Job interview is organized to determine the individual's personality, its causes and position.
Questionnaire is a method of requesting to fill a full form of the questionnaire (questionnaire) from the respondent, which is in accordance with the rules.
Interview is a method of conducting an interview in the form of an interview with a pre-arranged planned person or group of people; the answers to his questions are sources of information.
Method is a sequence of ways by which the recognition of a phenomenon is detected.
Pedagogical observation is the adoption by teachers of specially organized pedagogical phenomena in natural conditions.

DENOTEMENTS AND ABBREVIATIONS

RK-Republic of Kazakhstan
SS - State Standard
SKR - South Kazakhstan region
% - Percentage

INTRODUCTION

Relevance of research: Global changes in the information, communication, professional and other spheres of modern society require the revision of the content, methodological, technological aspects of education, revision of priorities, goals and pedagogical tools.

The country's educational system is aimed at preparing a competitive generation on the basis of achievements in education and science [1, -198-199b].

It involves the formation of strong systematic knowledge of children, the development of scientific research technologies, the development of skills in different fields of science and culture, the skills to overcome stereotypes, and the preparation for intellectual innovative activities.

The President said that "all conditions must be created and provided for it" [2, -11b].

The role of diagnostics of the quality and condition of industrial products in any field of professional activity is special as well as the teacher's professional pedagogical activity, activity of pedagogical collective.

However, pedagogical diagnostics of K.D Ushinsky has not yet become an organic part of the teacher's professional activity, and teachers do not take it at the level of significant relationships such as the psychodiagnosis of psychologists, medical diagnosis of doctors and technical diagnostics of technicians.

All theorists and practitioners acknowledge the truth of Ushinsky's saying, "If pedagogy wants to educate a versatile person, it must recognize the child from all sides." In addition, as a rule, pupil teaching is a function of psychology, not of pedagogy.

Each teacher checks the effectiveness of the learning, determines the reasons for low academic progress, but does not include the analytical activities on the diagnostic basis.

The school administration goes to the classroom, analyses and evaluates - it is called intra-school supervision, but not the diagnosis of the learning process.

Criteria for the quality of school services are generally not dependent on the diagnostics of certain relationships in the education system and are therefore developed beyond its principles and procedures.

It is unclear whether pedagogical diagnostics can be observed in any pedagogical process, from the interaction of a teacher and a pupil in the classroom to managing the education of the population[3, -4-7b].

It looks like control, and in any description of the pupil and the teacher, there is no realistic experimental research, and inspections are not consistent.

Many of these pedagogical phenomena are not the same as pedagogical diagnostics, they are richer and have the right to independence.

It's time to find out about them and other pedagogical objects related to the concept of "pedagogical diagnosis."

From the earliest times, teachers have been instructed to find ways to effectively teach children, to identify reasonable costs for teachers and pupils and

to define quick and qualitative teaching methods and technologies. Many things have been tested, and there is no clear path to which the teacher does not want to go.

The most valuable is that it is concentrated in the arena of scientific didactics, its practical task is to point out the most effective ways of early learning of the skills and knowledge developed by former teachers.

Modern education is a challenge for teachers and pupils: the participants of the educational process should, first of all, be able to master general education skills, work effectively with information, solve production and cognitive problems creatively.

The key problem in solving the problem of improving the proficiency and quality of the education, business, skill-oriented tendency of the pupil's future activities is to increase the awareness of learners.

Its exceptional value is the purpose of the reflexive-transformation action aimed at shaping the student's cognitive attitudes, apart from teaching, teaching material[4, -265-270b].

The changing nature of the service is always dependent on the subject's activity. The knowledge acquired in the ready state is typically difficult for pupils to explain phenomena and solve specific issues.

One of the major disadvantages of pupils' education is formality, which is evident in the fact that students are deprived of their ability to apply their theoretical principles.

Human activity is a very complex process of interaction between external and internal situations.

External influences play a key role in increasing the cognitive activity of the individual, but depending on the development of the human emotions, the role of personality, its role in the activity depends on the internal situation: experience, outlook, interests and needs[5, -119b].

These factors are the direction of human activity, which affects one another in a contradiction to the whole growth of human psychological processes.

During the study of pedagogical literature, there was a contradiction between the diagnostic work and the imperfection of the means of implementation of this process in biology lessons to determine the reasons for low pupil grades.

The search for a solution to the identified contradiction was the basis for the study of the theme "Formation of readiness for diagnostics of knowledge".

Object of research: organizational and pedagogical conditions of diagnostics of academic progress.

Purpose of work: definition and justification of methodical conditions of diagnostics of education quality in educational institutions.

Scientific novelty of research: taking into account the classroom and the potential of each pupil, scientifically-based organization of their cognitive services and the method of improving the quality of education have been created.

The criteria and levels of evaluation of the effectiveness and relevance of the diagnostic tools, the dynamics of the development of the diagnostic object, the

self-test as a component of the teacher's activity were experimentally determined and theoretically characterized.

Practical significance of research: The materials collected from the methodological activities for different levels of diagnostic skills will be widely used in the practice of biology teachers as the criteria for evaluating the readiness for diagnostic services in the process of improving professional training of future professionals.

Based on the subject, purpose and hypothesis of the study, the following tasks were put forward:

1. On the basis of theoretical analysis to determine the essence of diagnosis as an activity;
2. To characterize the features of diagnosis in the professional activities of teachers;
3. To determine the nature and composition of diagnostic skills of teachers;
4. Psycho-pedagogical conditions conducive to the formation of diagnostic knowledge and skills;
5. Theoretically substantiate and experimentally identify the evaluation criteria and the levels of formation of diagnostic skills as a component of a teacher's professional activity;
6. Develop a methodology for studying the development of diagnostic skills among teachers;
7. To prove the effectiveness of the program of formation of diagnostic skills;

The following provisions are to be defended:

1. Diagnostics is an area of knowledge, the result of which is an ascent from the phenomenological to the essential knowledge of the object or system under investigation by means of engaging both logical and technical diagnostic tools;
2. Diagnosis is an important component in the structure of the professional activity of a teacher of special education, since it is the basis of a personality-oriented approach, and also contributes to problem-solving in other types of professional activity;
3. Substantial characteristics of the teacher's diagnostic activities, goals, means, results of pedagogical influence;
4. Diagnostic skills in the process of professional training of future teachers act as a backbone factor, since in the course of their formation, humanistic professional attitudes of the personality of the individual are developed; theoretical knowledge in the field of special pedagogy and psychology is systematized, the formation of a large group of professional actions is activated, a system of general professional skills emerges: perceptual, constructive, communicative, research;
5. Psychological and pedagogical conditions for the formation of diagnostic skills consist in the presence of a positive, stable professional motivation that organically combines a rational and personal-emotional attitude while mastering these skills; development of an analytical mentality of students, a high level of development of

a number of other pedagogical skills; the gradual mastering by future special education teachers of the content, structure and technology of diagnostic activities;
6. The required level of development of diagnostic skills among pupils is achieved by upgrading the content of theoretical courses, a special organization of classroom training and psychological, medical and pedagogical practices, including active diagnostic activities, which allows the use of various forms and methods of theoretical and practical training of future teachers of special education to diagnostic activities.

To solve the tasks, the following research methods were used:
1. Theoretical: problem analysis, systematization of the received information, synthesis, modelling;
2. Empirical: observation of students' activities, questioning, testing, analysis of the products of students, the method of expert assessments, psychological and pedagogical experiment,
3. Statistical data processing: quantitative and qualitative analysis;

Methodological bases of research: The methodological basis of the study were: the materialist theory of knowledge; axiological approach that considers a person as the highest value of social development and allows to consider diagnostic activity as a psychological condition for the humanization of the educational and developmental process; personality-activity approach to diagnostic activities as a personality-oriented.

Publications. According to the results of research, 3 articles, including 2 conferences and 1 article were published in the media.

Structure and volume of the dissertation
The dissertation consists of the introduction, the methods and conditions of the experiment, the results of the practice, conclusion and the list of references. The dissertation consists of 16 tables, 1 Diagram, 2 graphs, 5 images

1 THEORETICAL BASES OF FORMATION OF DIAGNOSTIC SKILLS

1.1 Study of the problem of skill formation of knowledge quality diagnostics

The prerequisites of deep studying of the problems of monitoring and diagnostics were formed in the beginning of XX century and in the 90s were found in works of domestic pedagogics (V.I.Andreev, V.P. Bespalco, V.A. Kalnei, A.N. Mayorov, S.E. Shishov and others).

They created their own conclusions on the basis of theoretical base of knowledge management made by Y.V.Vasilev, Yu.A.Conarzhewski, V.S.Lazarev, A.M.Moiseyev, A.A.Orlov, V.P.Simonov, T.Tretyakov, T.I. Shamova and others. The findings of these scientists have identified the basis of the monitoring system, the management function and principles, and the content of management activities.

Recently, scientists such as: S.G.Vorovshchikov, S.A.Gilmanov,V.I. Zagvyazinsky, V.P.Panasyuk, M.M.Potashnik, D.T. Tatyanchenko, E.A.Yamburg and many others have studied the issues related to the quality of direct education, D.Sh.Matros, D.M. Polov and N.N.Melnikova, N.A.Koolym and others,developed a mechanism and technology of knowledge management based on monitoring[6, pp-88].

An effective model of monitoring was suggested by A.S.Belkin, N.K.Zhukova,T.A.Strokova,E.I.Terzioglo,L.V.Turkina,V.I.Gribanov,V.K.Muratov a,L.N Nazarov.

Educational situations describe actions that form a problem-solving experience - this is usually a role-playing game in practical situations, in classroom and in role-playing games. These issues were considered in the works of L.V.Rebrovoy,G.M.Murtazin,A.N.Myagkova,I.D.Zverev,L.N.Orlova,O. Yu.Trifonova,V.N.Simentsova, A.V.Kulev, G.S. Noga, G.V.Tatarnikov, E.P.Brunov.

It is well-known that the quality of education is determined by the cognitive level. Cognition is studied in several scientific disciplines.

Cognitive standards and norms, their correspondence to reality, sincerity and insincerity, cognitive attitudes and forms of attitude towards the world (religion, morality, art) are studied in a special section of philosophy - gnosiology. Mechanisms of the cognitive activity of the individual are studied in cognitive psychology.

Social and cultural context of cognitive activity is cognitive sociology and cultural science. Historical development of science as a special form of knowledge is studied in the history of science. Special problems of the organization of scientific knowledge are analysed in the methodology of logics and science[7, pp-286].

In the philosophic dictionary, the term "cognition" is regarded as the creative activity of the subject, which is aimed at gaining true knowledge of the world.

Cognition is a significant characteristic of the characteristics of culture and, depending on its functional purpose, the nature of education and its means and methods can be realized in the following forms: daily, mythological, religious, artistic, philosophical and scientific[8, pp-11-17].

In the psychological dictionary, "cognition" is associated with the mental processes of learning, processing, coding and education.

Cognition includes the perception, imagination, formation of concepts, thinking, formulation, and dreaming. Some definitions of knowledge are very narrow (for example, cognition is equivalent to the processing of information) and others are too broad (eg, Clerk's definition: "All processes above the reflectional level lead to behaviour change").

In psychoanalytic literature, the term "cognition" is usually restricted to the intellectual functions of the human being and is often referred to the processes of child development (in particular, genetic epistemology).

Recent forms of research in cognitive psychology, psychological reminiscences of the phenomenon, including preferential, iconic (verbal) and oral expression, gradually entered psychoanalytic theory.

The particular interest of psychoanalysts has always been the problem of speech development [9, pp-240].

In the pedagogical dictionary, "cognition" is the multiplication of objective reality (individual and collective) in mind. Cognition is a historic feature of social and cultural objects, and designs the more or less sensitive cognitive tools and techniques that are most often used.

There are different forms of cognition: cognition oriented towards true knowledge, individual(perception, thinking), cognition that is indivisible from the subject(for example, in the form of some texts or in the form of technogenic things aimed at obtaining objective knowledge outside of the individual: the identification of different forms of education is of cultural significance).

At present, the ideal of cognition is primarily related to the possibility of increasing cognitive phenomena with new experimental science, with artificial conditions and predictability.

We have seen cognitive actions that help to educate and lead to natural and social processes and to serve a person.

A special kind of cognition is education. A creative activity in the way of understanding the accumulated knowledge of humanity, in accordance with cognitive laws, discovering new, previously unknown, facing the problems and solving them is the dialogue (in this case this is the dialogue between the teacher and the student)

The theory of scientific cognition is studied by epistemology. In this sphere, the peculiarities and structure of cognition, its significance level is considered. Everything that a person does is to be portrayed, and its special kind is cognition. Being in the search through the goal and the real work in order to gain necessary knowledge is considered to be cognition.

Cognition consists of two stages: The first is sensual cognition. They are intuition, imagination and perception. The second is rational cognition. It includes understanding, argumentation and opinion.

And now speaking of the activity, in the pedagogical vocabulary, “activity” is associated with a person’s ability to take an active part in the world, to make socially significant changes in the material and spiritual environment, based on the development of human social-historical experience.

This is reflected in creativity, volunteer acts and relationships. The personality of a person is an active lifestyle of a person, in principle, a conservative view of his or her views, the unity of words and actions.

The activity of the individual creates moral values, determines the nature of his / her behaviour. Active activities may achieve humanism and humanist goals, socially useful and anti-informal directions.

The basis of morality for human activity is to resist all forms of evil. Being active depends on the individual's civil liberties, the availability of legal guarantees for initiatives in society[9, pp-240].

In the practice of education and upbringing there is often a lack of personality activity: the obedient, trained children are highly appreciated by the parents and teachers than the researcher, enthusiast, "unusual" child.

The point of view that students should learn the material and to increase the processed information in a timely manner (question-answer, exams), and that the public behaviour of students should be consistent with the task is not obsolete in pedagogical practice. However, such a viewpoint results led to negative consequences.

Scientists have come up with ideas to activate teaching before they are transformed into an independent science discipline during the formation and development of pedagogy.

The founders of the idea of the activation were Y.A.Komenskiy,Zh.Zh.Russo,I.G.Pestalotszi,G.Gegel,F.Froybell,A.Distillery,D.Dewi,K.D.Ushinsky.However, the most consistently described ideas in the works of these authors are derived from statements by scholars and thinkers of the ancient world[10, pp-168].

The whole history of pedagogy can be viewed as a struggle between two views on the pupil's point of view.

Teachers who took the first position considered the initial passivity of the learner as a form of pedagogical influence, and, in their opinion, the activity should be shown only by the teacher[11, pp-160].

Those who support the second position consider the pupil as a participant in the learning process, and the key role in his or her activity is his activeness.

The developer's function is aimed at developing individual psychological peculiarities of students: memory, attention, thinking, speech, observation, interest[12, pp-80].

Tracking students' knowledge is an integral part of the learning process. Identification control is the ratio of the results achieved with the planned learning objectives.

The effectiveness of the educational process management and the quality of the students' education depend on the proper organization of the process.
Testing knowledge should not only show that the final result of the action is correct or incorrect, but also: the form of the action should be reported at the current stage of the study.

Correctness of the pupil's learning activities allows the teacher to assess the knowledge and skills that he needs, provide timely assistance and achieve the learning goals.

All this creates favourable conditions for the development of cognitive abilities of pupils and their cognitive activity.
Well-arranged supervision allows the teacher not only to evaluate the degree of mastering the material studied, but also to see his achievements and failures. [13, pp-283].

Educational situations describe actions that form a problem-solving experience - this is usually a role-playing game in practical situations, in classroom and in role-playing games.

These issues were considered in the works of L.V.Rebrovoy,G.M.Murtazin,A.N.Myagkova,I.D.Zverev,L.N.Orlova,O.Yu.Trifonova,V.N.Simentsova, A.V.Kulev, G.S. Noga, G.V.Tatarnikov, E.P.Brunov.

The problem of diagnostics is widely covered in the pedagogical research of scientists and is examined in various aspects: Improvement of professional quality of teachers, improvement of teachers 'innovative and psychological and pedagogical training in the works of M.I.Dyachenko, G.G.Nurgalieva, K.Buzaubakova, improvement of teachers' scientific and methodical readiness, in the works of A.E. Abylkasymova, B.B.Baymukhanov, E I. Bidayabov, K.K. Zakiryanov, M.A. Kudakulov, K.Kabdikayirov, E.E. Medeuov, D. Rakhimbek, S.E. Shakilkova, B.Almukhanbetov; formation of their pedagogical competence in the works of O.A. Abdullina, S.I. Arkhangelsky, N.V.Kuzmina, V.A. Slasten, G.A. Umanov, N.D. Hmel and others. However, modern school-based diagnostic studies are insignificant[14, pp-9-18].

2. PEDAGOGICAL DIAGNOSTICS IN SCHOOL-EDUCATIONAL PROCESS

2.1. The essence and functions of pedagogical diagnostics

"Diagnostics is not a panacea but a tool to help solve the problem."

D. Dobson

Pedagogical diagnostics is the process of determining their status at a certain time based on the recognition of different pedagogical phenomena and the use of the necessary parameters for them.

The essence of pedagogical diagnostics is to study the effectiveness of the school curriculum on the basis of changes in pupils 'level of schoolchildren and the growth of teachers' pedagogical skills[15, pp-144].

Pedagogical diagnostics answers the following questions:

- what and why to read;
- according to what indicators;
- by what methods;
- in what cases (self-control, self-knowledge).

Criteria and effectiveness of pedagogical diagnostics:

Criteria:

1. Learning level
2. Quality of Study
3. Cognitive activity.

Expected result:

1. Increase pupils' cognitive activity
2. The level of learning is 100%
3. Increase the quality of education by 100%
4. Increase in the proportion of pupils engaged in research activities.

So, what is meant by the concept of diagnostics?

If we look at the etymology of this word, in Greek, "diagnostikos" - "diagnostics" is an assessment procedure aimed at clarifying the situation and defining a true level (for example, upbringing). In our case,study of the learning process and the results of education and upbringing[16, pp-118].

Diagnosis is a conclusion about the state of health, based on a special study of diseases and injuries (S.I. Ozhegov).

1.Diagnostics is a diagnosis
2.Theory of diagnosis methods
3. Making a diagnosis
(S.I. Ozhegov).

Diagnosis is recognizing any deviation from normal functioning or development and determining the condition of a particular object (group, student, family, particular person).

Diagnostics is a special area of knowledge that is achieved by individual or group-based approach for accurate assessment of the theory, methodology and qualifications.

Diagnostics (Greek "dia"-clear and" gnosis"- knowledge) - the general way of obtaining advanced information about the research object or process.(I.P. Podlasy) When working with children, the practitioner should be able to observe social and psychological changes in the group, and build children's relationships; value absorption, character adjustment, and characteristic achievement.

In order to regulate his / her professional activities, he / she should constantly review educational achievements, like a professional subject that compares the purpose of products and services[17, pp-156].

In the concept of *"pedagogical diagnostics"* let's take a look at the pedagogical criticism that describes the following peculiarities of this diagnostics:

- Firstly, the diagnostics is carried out for pedagogical purposes, i.e it is directed on receiving of new information on improvement of the quality of education (education, upbringing) and development of pupil's personality on the basis of analysis and interpretation of results;
- Secondly, the main thing is to provide completely new, informative information about the quality of the teacher's pedagogical activity;
- Thirdly, it is carried out by the methods that are organically compatible with the logic of pedagogical activity of the teacher;
- Fourthly, the functions of monitoring and evaluating the activities of teachers through pedagogical diagnostics will be strengthened;
- Fifthly, even some of the traditional means and methods can become tools and methods of pedagogical diagnostics.

Firstly, pedagogical diagnostics, like other diagnostics, requires preliminary structuring of the educational process and its components.

Secondly, the diagnostics is based on information about the specific parameters of the system.

Thirdly, making a decision is very difficult and this is the least developed aspect of pedagogical diagnostics.

Pedagogical diagnostics deals with the design of a modern and reliable device for the development of appropriate methodological recommendations for all participants in the teaching process (school administrations, teachers, parents and pupils), identifying important features, signs, algorithms and decision-making procedures[18, pp-189].

The leading function in pedagogical diagnostics is the feedback function in the process of education and upbringing. The essence of this function is the basic information about analysis of the past pedagogical experience and subsequent formation of the pedagogical process, which includes data of education and educational level of students at a certain stage of education.

Current systems of evaluating the educational activity of schools have some advantages (otherwise it would not be) but do not conform to the concept of self-governance.

For example, in the pedagogical theory, the actions of participants of the educational process (educators and students) are considered full, in practice, many modern pupils do not do very well in class, therefore the potential of the educational process is not used.

The main reason for this is the lack of information available to teachers and students for the learning outcomes.

The most important objective of *pedagogical diagnostics* is to obtain the necessary information for timely correction of learning achievements and results of each teacher and pupil[19, pp-46].

The assessment function is also equally important for pedagogical diagnostics. There are several aspects of complex and comprehensive assessment: value-oriented, regulatory-corrective, stimulating and measuring.

The value-oriented assessment enriches pupils' perceptions of themselves and people, makes it possible to compare their moral, labour, aesthetic and other qualities to society's requirements. Through the pedagogical evaluation, the pupil changes his or her value orientation.

The regulatory-corrective aspect of pedagogical evaluation - helps the pupil to harmonize his / her actions with the society's norms, build behaviour, and communicate with other people.

The stimulating value of pedagogical evaluation is especially high when it coincides with the actual development and behaviour of the student. As soon as the pupil is aware of the objectivity of the assessment, he begins to develop his positive aspects or overcome shortcomings.

The nature of the measuring pedagogical assessment also influences the motivation of the student to self-education.

The student increases his or her potential by comparing his qualities and achievements with others'. The pupil gets information about himself/herself from the evaluation of the class and the teacher. Thus, he knows himself through the information he receives from others.

This self-awareness process is not always carried out consciously.

But if the diagnostics is carried out purposefully, it becomes an instrument of self-knowledge. The objects of diagnostics: characteristics and quality turn into the values of self-discipline. It focuses on the moral, political, labor, aesthetic and other values of society[20, pp-112].

The managerial function of pedagogical diagnostics is associated with the main stages of managing the development of the pupil team and the pupil’s personality.

In accordance with this, three types of diagnostics are defined: initial, corrective (current) and generalizing (final).

Three major variants of the first diagnosis were identified:

- the first is when the team is formed for the first time and the teacher is also unfamiliar to students;
- the second is when the team is not new, but the teacher first starts working with the class;
- the third is when the team and the teacher have already worked together. Prior to determining educational objectives in the mid-term or in the academic year, the teacher studies the subject level of the pupil.

In the first variant, initial diagnostics is used for a comprehensive study of pupils.
In the second, the teacher considers not only the pupils, but also the team itself as a complex dynamic system[21, pp-8-9].
The third variant allows the teacher to conduct a select diagnosis of the team and the individual in addition to the information previously received.

A teacher who has been in contact with pupils and the team for several years does not need to carry out the initial diagnostics completely.

But since the process of education is controversial and leaping, continuous and dynamic, the teacher must necessarily be aware of changes and reflect them when planning his activities.

Current (corrective) diagnostics is carried out when organizing the activities of student groups that orient teachers to changes in students and groups.
The validity of previous decisions is also assessed.

The information obtained as a result of the current diagnostics helps the teacher to quickly and accurately correct his / her work and improve the style of communication with the child, and the method of educational work.

Through corrective diagnostics, the teacher quickly responds to changes in student learning and, thus, gives them the opportunity to actively, independently and creatively participate in the teamwork[20, pp-112].

When planning educational work, the teacher cannot always foresee its outcomes. It is especially difficult to predict the choice of effective methods and tools for individual influences.

Current diagnostics can help to make quick decisions on improving pedagogical services as operational information.

2.2. CONTENTS, FORMS AND METHODS OF EDUCATIONAL DIAGNOSTICS

Principles and stages of pedagogical diagnostics

In order to successfully carry out pedagogical diagnostics, it is necessary to take into account its main features. The main things are basic principles, levels, stages and technologies, methods and techniques[23, pp-44-46].

1.Principle of systematicity
The systematic approach consists in the fact that all students of a class, group, creative association during the whole academic period according to the program are subjects to regular diagnosis; diagnosis is carried out at all stages of the pedagogical process - from the initial perception of knowledge to their practical application.
2. Principle of objectivity
Objectivity lies in the scientifically based content of diagnostic tools (assignments, questions, etc.), a friendly attitude of the teacher towards all pupils.
3. Principle of visibility
This principle means that the diagnosis is carried out for all pupils openly by the same criteria. A necessary condition for the implementation of the principle is the announcement of the results of diagnostic sections, their discussion and analysis.
4. Principle of optimality (in the choice of method, volume, etc.) - for example, the diagnosis of children's cognitive abilities is considered expedient to analyse only 5-6 skills.
5 .Principle of complex methods - that is, when diagnosing each specific ability, it is necessary to see the system, for example, diagnosing observation can talk about memory, attention, flexibility of thinking, features of perception, and, of course, about the features of speech, etc.
6. Principle of accounting and continuity between ages
Information obtained as a result of diagnosis can be used in the planning and organization of educational work with children in both age and homogeneous groups.
In the diagnostic activity of a teacher, as an educator, the following aspects of diagnostics can be distinguished:
1. Studying
a) Data collection
b) Comparison
c) Interpretation
d) Analysis.
2. Forecasting
3.Delivery of the results of the diagnostic work to pupils
4. Planning for further educational work[24, pp-307].
Stages of pedagogical diagnostics according to I.U.Gutnik

If technology is regarded as a system of "ordinal" stages, then pedagogical diagnostics technology will be as follows:
1. Determination of object, purpose and tasks of pedagogical diagnostics.
2. Planning for future diagnostics.
3. Selection of Diagnostic Tools (Criteria, Levels, Methods).
4. Collecting information about a diagnostic object.
5. Processing, analysis, systematization of information obtained as a result of diagnostics.
6. Synthesis of object components diagnosed by the new unit based on the analysis of reliable information
7. Prospects for the further development of the object.
Justification and evaluation of pedagogical diagnostics.
8. Practicing results of pedagogical diagnostics.
The introduction of the correction of the pedagogical process to change the object[24, pp-40-45].
Tasks of diagnostics:
1. To determine the development status according to features.
2. To determine the dynamics of its development and transformation over a certain period of time.
3. To identify the real changes that have occurred under the influence of organized educational impact.
4. To determine the prospects for the development of features.
5. The divide the researchers (children or groups) into different categories of work based on the results.
6. To develop recommendations (child or group of children).
7. To determine the child's talent, individual abilities with the purpose of timely measures for his development.
8. To develop a comparative analysis of the educational impact of various education and training systems with the aim of developing recommendations for improving the child's developmental function[25, pp-81].
The above tasks are common in pedagogical diagnostics.

Pedagogical diagnostics answers the following questions:
- what and why to learn in the spiritual world of teachers and pupils, by what indicators to do it?
- what methods to use?
- where and how to use the results of information about the quality of pedagogical activity?
- under what conditions the diagnosis is organically included in the holistic educational process?
- how to teach teachers self-control and how to teach pupils self-knowledge?

The essence of pedagogical diagnostics is determined by its subject: whom to educate in accordance with the goals and objectives of education (object of upbringing, criteria of education), under what conditions (educational situation), who and what should do (definition of the functions of society, family, school,

collective, the child himself), by what means, ways, methods to influence educators and pupils (activities of the subjects of education).

Diagnostics is based on the materialistic understanding of human relations with the environment. The person consciously or unconsciously adapts to the social environment, to the conditions of life and educational requirements.

This process is called adaptation. But there is a conscious change in oneself and in circumstances. The higher the level of social development, the closer the relationship of the individual with society, the more active its impact on history, on social progress[26, pp-26-29].

Types of diagnostics in terms of volume are: full and partial.

According to the sequence algorithm:

• preliminary (introductory),
• intermediate,
• final (conclusive).

The purpose of the introductory diagnostics **is to** determine the initial level, the state of children for the preparation of a child development program, a work plan.

The purpose of the intermediate diagnostics is to evaluate the effectiveness of pedagogical education, to make timely corrections of the development program.

The purpose of the final diagnosis is to determine the level of developmental abilities, to make urgent necessary corrections for children of graduation groups, to provide a comprehensive assessment of the pedagogical activity.

How to study students and class as a group? Science offers the teacher a large arsenal of diagnostic methods - simple, easy to use, interesting for students and at the same time reliable[27, pp-3-6].

Forms of pedagogical diagnostics are very diverse, the most frequently used ones in modern diagnostics education systems are:

• observation
• conversation
• survey
• modelling,
• sociometric and projective methods
• analysis of documents and works of pupils
• method of incomplete sentences,
•drawing,
• method of collision of views, positions
• knowledge control
• tests
• keeping a diary of observations of the child
• contests
• exhibitions of creative works of children, etc.

The study of the development process of each pupil should be carried out throughout all the years of his study[26, pp-160].

Diagnostics should cover all students without exception and be carried out through systematic diagnostic sections for each of the developmental parameters. If it is impossible to conduct knowledge control for any pupil at a fixed time (due to illness or for other reasons), this slice should be made as soon as possible, but in no case is not missed. Only in this case it is possible to effectively use the results of diagnostic activities[26, pp-27].

In order for pedagogical diagnostics to be scientific, it must meet the following requirements:

1. Purposefulness - diagnostic actions are carried out relatively not for the student in general, but for the manifestation of specific personal characteristics, for example, indicators of upbringing, etc.
2. Plan - prior to the start of diagnostics, it is necessary to outline certain tasks (what to diagnose), make a plan (terms and facilities). Indicators (what to fix), possible miscalculations (errors) and ways to prevent them, the expected results.
3. Independence - diagnosis should be an independent, not a passing task. For example, a trip to the forest on a tour will not be the best way to ascertain the quality of pupils, because the information obtained in this way will be random, since the main efforts of attention will be directed at solving organizational problems.
4. Naturalness - the diagnosis should be carried out in natural conditions for the student.
5. Systematicity - diagnosis should be conducted not on a case by case basis, but systematically, in accordance with the plan.
6. Objectivity - the teacher should fix not what he “wants to see” to confirm his assumption, but objective facts.
7. Fixation - the data should be recorded during the observation or immediately after it[27, pp-5].

Rules for diagnostics:

1.The establishment of a contact between the teacher and the child. Confidential atmosphere, friendly attitude, attention, genuine interest.
2. The survey is conducted within 15-30 minutes (depending on the age of the children and the objectives of the study).
3. The objects must be put in the same conditions.
4. The child must be accepted as the way he is. Do not evaluate him, do not comment on his answers, do not express bewilderment, joy or blame.
5. The results of the survey must be recorded.
6. Diagnostics ends with a thorough analysis of the results of the survey, which will build an effective program of the educational process.
7. The criteria of pedagogical activity in the methods of diagnostics of educational and training quality of pupils: its content, direction, quality of performance are influenced on any child. This is unproductive: to study the child and the process of his upbringing on different indicators and different methods.

The education of the student is the main indicator of the effectiveness of the pedagogical activity.

This installation is the starting point in the theory of modern pedagogical diagnostics. In the field of education, such a technique is still being planned.

8. Finally, the diagnosis should be carried out by people who are prepared for this. Otherwise, inevitably, unnecessary nervousness, the desire to conceal faults, shortcomings or exaggerate their significance is introduced into the process of studying the school's work.

The criteria are always the actual implementation of this or that work, the quality of the pedagogical activity itself. Such qualitative indicators are the correct formulation of the tasks of working with children in these conditions, the choice of content and methods of influence on them[29, pp-86].

It is important to identify the main directions of diagnostics of objects and to define the criteria for monitoring the quality of teaching activities.

As a specific result of certain work, the quality of pedagogical service is always a criterion.

Such qualitative indicators are, in certain cases, the tasks of working with children, the choice of the content and the ways to influence them.

Therefore, it is possible to find optimistic technologies that contribute to solving tasks for teachers and students. Use of technology in education allows reducing management efficiency and increasing its effectiveness[30, pp-80].

Any technology determines the sequence of individual action steps. It depends on a particular type of service and requires the exact duplication of its stages.

Technological procedures are as follows:

1. Targeting, i.e clear and consistent development of learning objectives;
2. Selecting content, i.e structuring information that needs to be learned;
3.Choosing the counterparts – from traditional teaching methods to modern technologies;
4. Controlling the material acquisition;
5. Diagnosing, getting feedback through specific diagnostic procedures.

As you can see, one of the components of educational technology is the control of knowledge quality and diagnostics.

Quality control of education is carried out using different methods and approaches in accordance with educational objectives.

For instance, testing, replying to questions, creative projects etc. Assessment is a means of identifying the quality of education. Evaluation is one of the key driving factors in the learning process.

During the assessment, not only teachers are involved, but school students.

The assessment and interaction of the teacher and the pupil in this process teach to form the school, classroom microclimate, cooperation and mutual aid, reduce conflict situations, impartially assess students' knowledge, respond correctly to all the points of view, and understand the mistakes made when performing various types of work[31, pp-67].

2.3. PEDAGOGICAL DIAGNOSTICS IN THE WORK OF THE SUPERVISING TEACHER

Pedagogical diagnostics and assessment of the quality of education

These two concepts are closely related to each other. There are no state standards in supplementary education. This is clearly defined in additional educational institutions.

Therefore, the standard for each teacher is the result of the learning of their pupils' educational programs, and the effectiveness of the diagnostics is a method of assessing the quality of education. In supplementary education, there are no established school journals than in the school curriculum. In this case, how can knowledge be determined?

For this purpose, there are different ways of evaluating the quality of education and assessing child personality change.

Through each pupil's diagnostic cards, it is possible to track the individual achievement of each child and evaluate the quality of the whole group and the progress of the educational program. [32, pp-49].

Methods of assessment of the universal education quality of pedagogical diagnostics and special direction.

Pedagogical diagnosis is an integral part of pedagogical activity because it requires evaluation, analysis and accounting of learning outcomes.

What do we need to know about pedagogical diagnostics?

The definition of "Pedagogical diagnostics" was presented by K. Ingenkamp in 1968 (this day is considered as the official birthday of the term "pedagogical diagnostics")[33, pp-73].

In his opinion, pedagogical diagnostics provides a study of the educational process, helps identify the preconditions for the optimization of the situation and results of the teaching process and justify its results for the development of the society.

Pedagogical diagnostics is based on the study of the effectiveness of the educational process.

Diagnostic activity is the process of handling the results of the control with the aim of observing the children, conducting surveys, describing characteristics, explaining the reasons or predicting the future behaviour, while maintaining the required scientific criteria during the process.

In the system of predicting outcomes, general diagnostics is conducted at the end of each school year. In the next academic year, key data is provided to adjust the pedagogical impact.

Final diagnostics in the system of predicting outcomes of educational work is carried out at the end of each school year. In the next academic year, key data is provided to adjust the pedagogical impact.

Unfortunately, diagnostics in school practice is still not perceived as an integral part of the pedagogical process. This will inevitably lead to not only the children's education but also the average level of all pedagogical requirements and attitudes, the personality of modern pupils, the standard of education and upbringing.

That is why teachers are dissatisfied with their students, who, in turn, are dissatisfied with the school.

Ushinsky said that it is necessary to know in detail about the pupil, his education, professional training, as well as the culture of the parents, the possibilities and characteristics of the group, the positive and negative influence of the region on children[34].

One of the main objects of the educational process diagnostics is the educational effectiveness of educational classes, identified in documents of school reform and in didactic studies: effective use of diagnostics, means and methods of management of children's mental development, their self-awareness, responsibility, self-determination.

The word "diagnostics" does not intimidate us now. We get familiar with it we go to the doctor: he makes a diagnosis before being cured.

Diagnostics is performed by the auto mechanic before the vehicle is repaired. Diagnostics is the study of the body, the machine, any complex system.

Modern pedagogy considers the educational process as subject of a pupil and a teacher associated with each other, within the framework of the system consisting of elements, forms, forms and methods of work.

Modern pedagogy considers the educational process as the subject of a pupil and a teacher associated with each other, within the framework of the system consisting of elements of forms, contents and methods of work.

The science suggests comparing the school graduate with any product, preparing the educational process through technological point of view.

A technology-based approach to the teacher's work is an algorithm,i.e the division of work stages:

1. Identifying and realizing the specific responsibilities of the pupil;
2. Business planning;
3. Implementation of the project;
4. Analysis and evaluation of work results;
5. Setting up new tasks if the previous ones are completed

Of course, most of us do not work hard with this algorithm, but at the beginning of the year or semester, we have to think about what we did with pupils and what we will do next. At this point, we often plan to conduct extracurricular activities, such as cognitive activities, parties and rarely think about our students, what they were like, what we want them to be[35, pp-63].

Most people believe that the teacher knows his pupil since they interact with each other every day, but this is not true.

The teachers think that they have a good relationship with the pupil, that they are doing everything right.

At this point, though students are satisfied with the teacher's relationship with them, they want the teacher to pay more attention and want the relationship to be informal, in a different way.

Many mistakes in class and education process are made by teachers because they do not know their own students[36, pp-56].

Pedagogical diagnostics is carried out in educational and upbringing process. In many cases, teachers are well aware of their pupils and think that special research is not needed.

But when this knowledge is deeply analysed, it is determined that they are superficial and insufficient.

Teachers and educators often know their pupils through the effects of their previous experiences. Sometimes some pupils are considered unfairly referred to as "difficult" pupils, but the truly corrected teenager has long been unaware of the teacher's uncertain look at himself.

The result of the diagnostics must be a chart, diagram, diary, portfolio, i.e documentary evidence of the pedagogical activity[37].

The following types of the effectiveness of the pedagogical process can be distinguished:

1. Retention of contingency.
2. Determination of a pupil's personal growth, prediction of creativity development
3. The attitude of a pupil towards the lesson, the class and the teacher.
4. Successful learning of children's educational programs.
5. Correspondence of service results with the purpose
6. Development of educational and training programs capable of attracting interested children
7. Results, examinations, competitions, etc.
8. Expert estimation of specialists.

Verbal assessment.

The results of many scientific studies indicate that it is important for pupils of different grades to be in psychological atmosphere than adults.

Hence a simple conclusion: to encourage the student to show his personal achievements in the formulation of the microclimate by encouraging a friendly word for his small achievement in the study of biological science and cooperation in the classroom and mutual assistance in the classroom.

2.4. METHODOLOGY OF CONTROLLING THE QUALITY OF EDUCATION DIAGNOSTICS AND MONITORING CURRICULUM

Peculiarities of monitoring and diagnostics of quality of education in the educational process

DIAGNOSTICS is a procedure aimed at identifying the real state of an object or phenomenon (using research methods)
Diagnostic Requirements:
1. validity (compliance)
Theoretical is the compliance of the results of one diagnostics with the results of another diagnostics.
Empirical is the compliance of the results of diagnostics with the observation
2. regularity (threefold repetition, perhaps more often)
3. complexity (consistency)

Each teacher must have a package of diagnostics.

Diagnostics helps to consider the results in connection with ways to achieve them, to identify trends, the dynamics of the educational process and its results. Diagnostics includes checking, evaluating, accumulating statistical data, analyzing them, and predicting further methods of pedagogical interaction between the teacher and the pupil[24, pp-307].

The essence and content of diagnostics of the subject teaching diagnostics are components of pedagogical monitoring. The main consumers of information about the results of the educational process are all of its participants: teachers, pupils and parents.

MONITORING

Monitoring is a continuous action in the "teacher-pupil" system, which allows observing (and adjust as necessary) the progress of the pupil from ignorance to knowledge. Monitoring is a regular tracking of the quality of learning and skills in the learning process.

Pedagogical monitoring allows the teacher to achieve more significant results and a higher quality of teaching at lower costs.

This, in turn, positively affects the professional development of the teacher, brings satisfaction and enhances authority among colleagues and parents[31, pp-67].

Monitoring allows the pupil to monitor his rankings, gain positive motivation and achieve learning goals successfully.

Parents constantly see the real accomplishments of their children, know the true value of their teaching activities, and participate in its development because they are informed about their children's psychological barriers.
School principals are given the opportunity to accurately plan and coordinate collaborative activities of teachers and pupils, to make objective comparative analysis of the educational process, to set a goal, and most importantly, a targeted plan of methodical work at school based on the diagnostic analysis of teacher and pupil difficulties. And, as a result, competently and more effectively manage the educational process.

Analysis of the minimum content of education and curriculum shows that today only knowledge and skills are classified. Generalized qualifications correspond to the development of skills.

Diagnostic diagrams database are classified according to the logical sequence that they investigate[18, pp-189].

The minimum content of training content and a review of curricula in the disciplines today show only the classification of knowledge and skills.

Diagnostics of the discipline consists of several stages:

1) Initial (preliminary) knowledge and skills. Their diagnostics is carried out at the beginning of the school year to determine what was learned last year, to identify the child's readiness for education in the next academic year.
2) Thematic. Diagnosed in the process of learning each topic.
3) Periodic. Diagnosed by section or a significant topic in order to determine the quality of assimilation of the relationship between the structural elements of educational material. The purpose of such diagnostics is systematization and generalization of knowledge.
4) The final knowledge, skills and abilities acquired at all stages of the educational process.

Diagnostics is carried out at the end of each semester and at the end of the school year in order to determine the quality of the actual training in accordance with the goal set at this stage.

Methods of pedagogical diagnostics
Research methods of pupil's personality and the team according to L.M.Friedman:
Participation in research (passive and active).
Depending on the time of monitoring (single, long-term).
Depending on the location (classroom, laboratory).
Depending on the purpose of the study of personality (non-experimental, diagnostic, phenomenon explanation, definition of the possibility of development).

Methods of pedagogical diagnostics: control, pedagogical experiment, questionnaire, interviews, tests, study of pedagogical documents (program, professional activity portfolio) [22, pp-126].

2.5. Selection of tasks for diagnostic works

A tool for detailed and reliable determination of the degree of formation of subject skills and abilities are the texts of diagnostic tasks (works) compiled by the teacher.

1. Determining the timing of diagnostic tasks execution
Diagnostic tasks should take into account the degree of difficulty, calculate the time of their execution. They can be performed in one lesson or in several classes. It is important that each diagnostic work is not monitored and evaluated at the traditional level, since important diagnostic tools for teaching are: accurate assessment, consistency, visibility and transparency[16, pp-158].
2. Checking pupils' work
Student work is carefully checked by the teacher: mistakes made by each student are classified according to predetermined criteria.
3. Analysis of diagnostic results.
At this stage, the number of pupils who have gaps in their specific knowledge and skills in a particular period of study is calculated. At the same time, statistical conclusions are given for all indicators, which allow the teacher to analyse the results obtained and identify the degree of formation of the required skills of pupils in the classroom. To increase the informativeness of the analysis of diagnostic work, we consider it necessary to calculate the indicators of quality, performance and degree of student learning[29, pp-86].
4. Diagnostic comparison of educational process efficiency
In this diagnostic part of teachers' pedagogical monitoring, we have identified two components:
• individual pedagogical monitoring of the subject;
• pedagogical monitoring of the class by subject.
According to individual monitoring, graphs are developed to reflect pupils' dynamics and effectiveness of the educational process. Individual pedagogical supervision is based on pedagogical monitoring of the class on the subject.

This component of pedagogical monitoring was divided by us into the following components:
• monitoring the quality of the educational process by periods of study;
• dynamics of the quality of the educational process by years of study;
• preservation of the quality of the educational process when changing the content of programs and textbooks.

This type of pedagogical monitoring allows tracking the learning outcomes of the academic year and, if necessary, make necessary corrections to the educational process quality management system.

The comparison of the results of the educational process by years of study allows finding out how the teacher works, whether the process is deteriorating or improving.

Monitoring is a process of systematic monitoring of the educational process, the data of which are used to correct the educational process.

It is important to know for monitoring:

- what is going to be tracked;
- what possible results are expected to get;
- how to influence those results;
- what are the ways to correct the results obtained taking into account the goals set during the training process.

The basis of educational monitoring is the levels of planned educational results formulated as a system of tasks:

- minimum level (a set of sample tasks that are mandatory for all to solve);
- general level (tasks representing combinations of subtasks of the minimum level with explicit associative links);
- advanced level (tasks that are combinations of subtasks of the minimum and general levels, connected by explicit and latent associative links).

The basic methodological unit of discipline educational monitoring is the analysis of educational work results[15, pp-144].

A subject teacher within the framework of subject monitoring can:

• analyse individual results of each pupil, summary results for the whole class or for an arbitrary group of students;
• analyse the degree of mastering of specific educational elements or the average degree of mastering of arbitrary sets of educational elements;
• get a list of those learning elements that pupils have currently learned the worst of or with which they have not worked yet;
• analyse the dynamics of learning course by each pupil;
• view the results of the control tests, evaluate the distribution of errors among the training elements that entered these tests, compare the results of several control tests performed by the class as a whole (for example, before and after correction);
• create their own analysis schemes that will be adapted to the conditions of individual pedagogical activity.

Based on subject monitoring, the subject teacher can:

• form training groups;
• make recommendations to pupils and their parents on the organization of independent work, taking into account existing knowledge gaps;
• make temporary or permanent changes to the daily practice of teaching a subject in order to increase its effectiveness[21, pp-8-9].

Methods of monitoring pupils' knowledge are diverse: forms of oral questioning and conducting written tests, materials - tests.

The teacher's preparation for the lesson is divided into three stages: diagnostics, forecasting, modelling.

In this case, the teacher is well aware of the training material and is considered to be oriented towards the subject.

The teacher introduces problem questions and tasks, as well as test materials that arise during the study of the subject, which he / she provides for a thematic folder or workbook.

The preparatory work allows to adapt educational information to the capabilities of the class, to evaluate and select the scheme of cognitive and collective cooperation, which gives the best results. It is based on the class preparation algorithm, consistent with steps that take into account all key factors and circumstances, as well as the effectiveness of the lesson[6, pp-88].

The implementation of the algorithm begins with the diagnosis of specific cases.

Diagnostics (related to the design of the educational work) reflects all the circumstances of the lesson: students' abilities, actions, reasons of behaviour, needs and attitudes, interests and skills, level of training, character of the learning material, its features and practical significance, structure, as well as the time spent in the educational process, careful analysis of original knowledge, acquisition of new information, systematization, observation and correction of knowledge and skills.

This stage ends with obtaining a diagnostic classroom card that clearly identifies the effect of factors that determine the effectiveness of the lesson. High-quality factors are expected to occur in the optimal environment.

Estimation is aimed at evaluating the various options for future lessons and choosing the best out of the accepted effective criterion. Modern 'predictive' technology allows demonstrating the effectiveness of the lesson by quantitative assessment[17, pp-156].

The aim of the lesson: the amount of knowledge (skills) is 100% accepted. The effect of the barriers undoubtedly reduces this ideal indicator.

The amount of loss (determined by the special method) is taken from the ideal result and the teacher determines the actual performance of the lesson according to the scheme he / she has anticipated.

If the indicator satisfies the teacher, he/she moves on to the final stage of planning, and if it is not so, the teacher will have to look for a good scheme for organizing lessons, guiding the factors that can be changed.

Disadvantages of the existing assessment system:

• The assessment procedure is subjective because the classroom classification has a significant impact on the level assessment;

• The assessment procedure has a determining nature: did not learn - "a negative", learned - "a positive mark";

• Learners' results are recorded periodically, that is, not all absolute marks (for doing homework, work in class, prospective work, etc.) are logged in the journal.

For example, in the biology lesson, students of the middle classes get several grades for homework. Which grade does the teacher give?

The data obtained are practically not used for the correction of the learning process and the construction of individual learning trajectories, that is, there is no graphical analysis of the mastering of each topic on the subject, there is no possibility to repeat with the student again who did not understand the topic, because the level of students in the class is different.

• The reasons for the results achieved are often evaluated and monitored based on intuitive life and professional experience at the end of the study period;

• The results of an individual pupil is evaluated within the class result, of course, students with “satisfactory” level of knowledge will be highly evaluated, even if they do not make any efforts and smart ones can reduce their potential.

It is extremely important that the teacher’s assessment activities are carried out in the interests of the child’s development. Therefore, the teacher must be adequate, fair and objective.

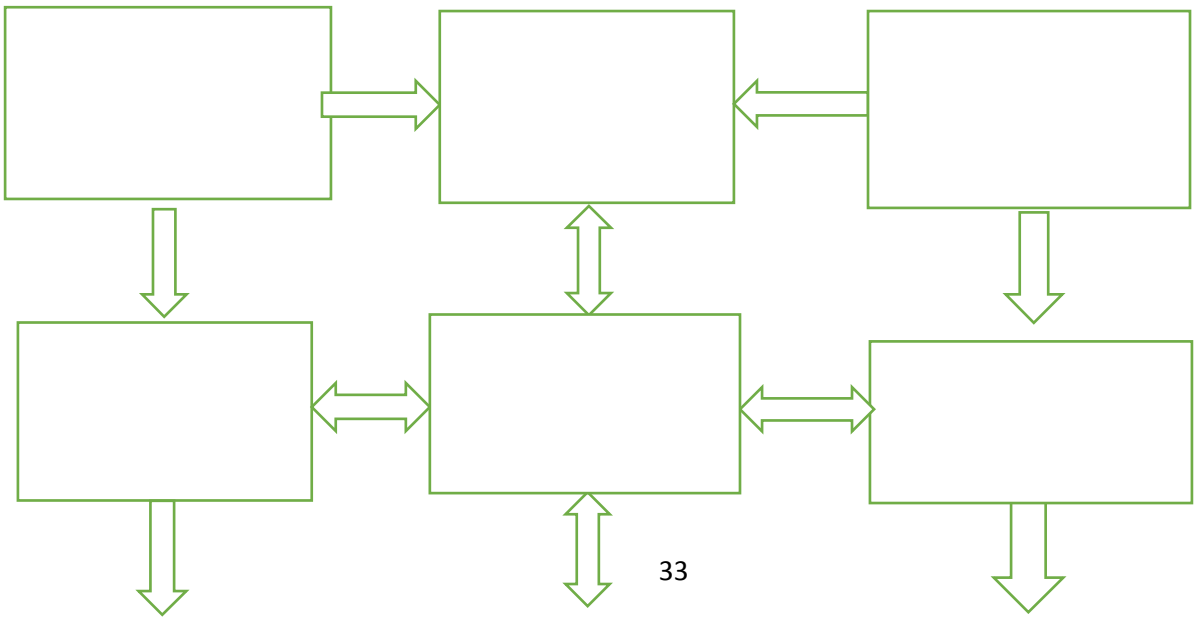
The most common types of evaluation mistakes are: mistakes of generosity, halo, central tendency, contrast, proximity, logical mistakes. "Generosity" mistakes are manifested in the teacher's over-grading.

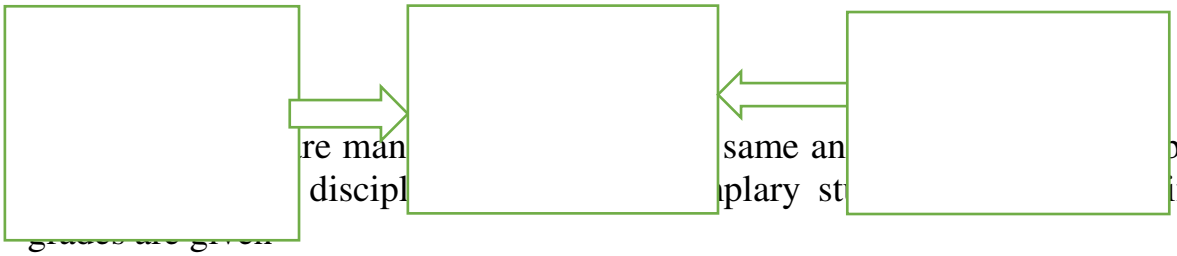
In the mistakes of the "central tendency" a teacher tries to avoid extreme assessment. For instance, not giving excellent or bad marks.

The “halo” mistake is associated with a certain bias of the subject teachers and is manifested in the tendency to evaluate positively those schoolchildren to whom they personally relate positively, and accordingly negatively evaluate those to whom personal attitude is negative[38, pp-173].

Mistakes of "contrast" in the assessment of others are rated higher or lower, depending on whether the level of knowledge, personality, behaviour of a student are higher or lower and whether a teacher's own qualities are higher or lower. For example, a less assembled and organized teacher highly appreciates pupils who differ with their organization, accuracy and hardworking.

Graph 1. Accounting of the impact of learning environment components





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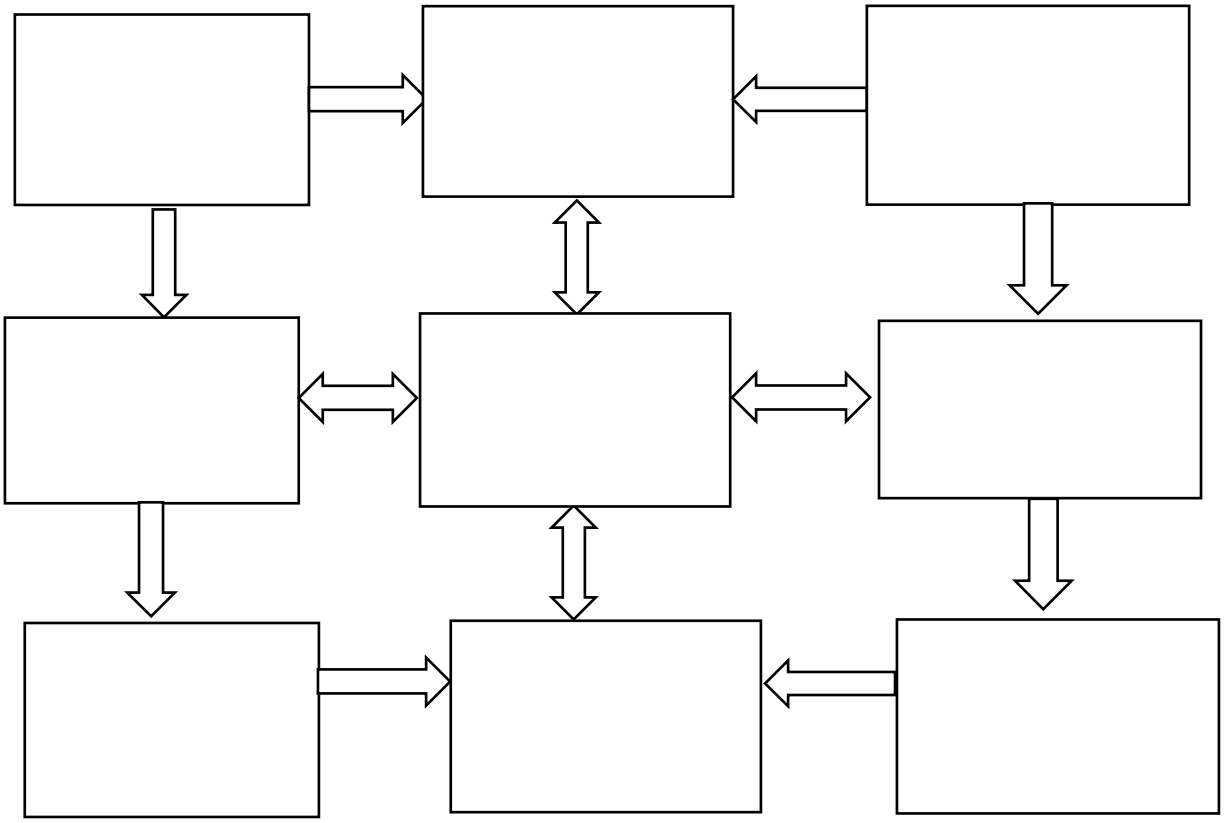
Graph 2.Accounting of the impact of learning environment components



"Proximity" mistakes are reflected in the fact that it is difficult for the teacher to give an excellent mark right after a bad one.

With an unsatisfactory answer from the “excellent pupil”, he is inclined to reconsider his mark towards over assessment.

The listed typical errors of student assessment are often made unconsciously by all teachers. Sometimes conscious, deliberate distortion of grades is considered as a way to stimulate the learner[39, pp-176].

Teachers, making an assessment, must each time justify it, guided by logic and existing criteria.

Experienced teachers are aware of this and constantly turn to this rationale, which protects them from conflicts with learners

2.6.Variety of diagnostic methods used in the inductive process

In the inductive process many diagnostic methods are used. They can be divided into several types:
1. Methods of diagnostics of changes of a child's personality:
"Interest Card" (for children aged 6-11 and 12-16)
"Need for education" (children aged 6-11 and 12-16)
"Value direction" (for children aged 12-16)
"Program Implementation Evaluation card"
"Diary of pedagogical observation"
Methodology of "aphorisms"
Complete the "sentences" methodology
Methodology of studying the individual student's socialization
Fidler test
Ketella test
Pedagogical expert evaluation cards of the student's self-assessment, theoretical information perception, competency and creative experience of practical activity[20, pp-112].

2. Methods of diagnostics of changes in the system of communication:
Methodology of "Parent's position in the educational process"
Methodology of "Pedagogical observations diary"
Technique of "mood colours."
Sociometry
Fidler test
Ketella test

3. Methods of diagnostics of changes of a teacher's personal qualities:
Methodology of "Labour values"
Methodology of "Professional Values Rating"
Methodology of "Professional Activity Indicator"
Fidler test
Ketella test
Self-assessment card and the evaluation of additional education teacher's competency.
4. Methods of diagnostics of the subjective level changes:
Achievements of children:
Pupil self-assessment card and the teacher's evaluation of pupils' competency(for children aged 12 to 16)
"Diary of pedagogical observation"

Informational card of children's participation in competitions, festivals and competitions of different levels[26, pp-26-29].
Pedagogical Achievements:
Methods of analysis of students' composition
Methodology "Level of software and methodological support"
Information card of pedagogical and professional competitions, festivals, results of participation in various tournaments
Informational card "Knowledge of students' educational programs" etc.

Learners who are unable to actively solve cognitive tasks fall into a stalemate, that is, they should avoid solutions that they know. This, in particular, explains the frequently encountered failures of excellent students in admission exams in higher education institutions because even though the exam questions are structured in accordance with the curriculum material, different ways of solving tasks are required[40, pp-34].

The content of disciplines of natural sciences, new scientific facts, various teaching aids, features of a teacher's personality and his/her communicative skills can stimulate students.

The use of problem-based learning in the biology method is related to research assignments aimed at the development of individual stages of problem-solving: tasks describing a particular situation, a problem should be formulated;
work with missing or redundant data; tasks that require defining the purpose of future activities based on the concept of the task; evaluation of student performance in terms of achievements.

In the pedagogical practice and methodical literature, in tradition, the vocabulary of the teaching method: (story, lecture, report, interpretation), visual (natural, other visual aids, experiments) and practical (laboratory and practical works)[41, pp-321].
Each of them can be active or inactive, passive.
Verbal methods

Verbal methods take a leading place in the teaching system. It allows delivering large amounts of information in a very short time, to help students solve problems and showing ways of solving them. Words fill imagination, stimulates students' feelings. Verbal methods are divided into the following types: conversation, interpretation, narration, discussion, lecture, work with books, and work with didactic materials.

Conversation is an introduction of the material in oral and short form. In contrast to the interpretation of educational materials, the method of interpretation is explicit and is used to inform students about facts, examples, events, phenomena that characterize historical figures and scholars.

Conversation can be combined with other methods: explanation, talk, exercises. A conversation is often accompanied by visual aids, experiments, movie tapes and movie clips, photographic documents.

Conversation is a dialogue teaching method that leads students to understand the new material through an elaborate system of questions formed by a teacher and to criticize the previous material.

Explanation is the basic qualities of the research object, individual concepts, vocabulary analysis and explanation of phenomena and legalities.

Explanation is a monologue form of narrative. An explanation is motivated to reveal the essential aspects of objects and phenomena, the nature and sequence of events, the disclosure of the meaning of individual concepts, rules and laws.

Lecture is an interpretation of problems as a method of teaching in which the theoretical principles, laws are defined, the facts are presented, the events are analysed and relationships between them are revealed.

Discussion is used to make pupils free to express their opinion and to listen attentively to the speakers' opinions. [42, pp-270].

Self-study method by learning ***tools*** is minimal informational text: in order to better define the logical structure of the new material, it is instructed to create a conversation plan or a plan-abstract: minimum text-maximum information.

Using a plan-abstract, students constantly increase the content of the theme when checking their homework.

Creating a plan-abstract, writing a story plan, finding answers, giving examples the read books, distributing the main chapter, working with detectors, working with scientific and popular literature promotes the development of theoretical, figurative and objective thinking of students in the analysis and synthesis of natural laws. [43, pp-159].

Self-study method with didactic materials

Self-works are organized in the following forms: the class is assigned a special research task. The teacher tries to convey to every student's mind. Requirements:

-the text should be seen (heard is quickly forgotten, so the students have to ask again);

- it is necessary to spend less time writing the text of the task.

Many teachers use didactic materials as a self-work in biology classes.

They are conditionally divided into three types:

1. Didactic materials for understanding and perceiving new knowledge without a teacher's explanation:

- cards with the task of transforming the text into a schedule or plan;
- cards with the task of turning images, schemes into oral replies;
- cards with the task of self-control, demonstrative visual aids control

2. Didactic materials for students' self-work for the purpose of fixing and applying knowledge and skills:

- cards with reflection questions;
- cards with calculation tasks;
- cards with drawing tasks

3. Didactic materials for self-study of pupils to control knowledge and skills.

- cards with pictures;
- test tasks.

Recently, textual tasks are more effective. They have disadvantages, and sometimes students try to find the right answer.

Methods of introducing the problem

The basis of these methods is to create a problematic situation in the classroom. Pupils do not have any education that explains facts and phenomena, they offer predictions for the situation. This method promotes the formation of pupils' psychological activity, the connection of causes, analysis, synthesis, comparison, generalization. [44, pp-214].

Depending on the level of cognitive activity of pupils, the degree of complexity of problem situations and ways to solve them the following methods of problem-based education are distributed:

Definite information with problematic elements. This method involves only one minor problematic situation.

The teacher creates a problematic situation for the students at some stages of the lesson in order to draw their attention to the words and actions increasing their interest. The problem is solved when presenting the teacher's new material. The role of students in teaching this method is very passive.

Cognitive-problematic reporting

The essence of this method is that the teacher sets out specific educational and cognitive problems as the problematic situation, and exponentially solves problems in the learning process. Here the teacher shows the pupils what methods they use and in what logical sequence to solve this situation.

In such classes, the teacher uses a wide range of methodological approaches: visual aids, explanation, conversation, technical means to solve educational and cognitive problems[45, pp-185].

Dialogue-problematic reporting

The teacher creates a problem. The problem is solved by the cooperation of teachers and pupils. The most active role of pupils is seen in the use of well-known knowledge during the period of solving the problem. This method provides great opportunities for active creative, self-cognitive activity of pupils, a strong feedback in the learning process, teaches pupils to express, prove and defend their opinions out loud, make their positions in life active.

The heuristic or partial search method is used when the teacher aims to teach pupils the individual elements of the problem and organizes the learner's partial search for new knowledge. The search for a solution to a problem is carried out in the form of specific experimental actions or through visual-abstract thinking based on information obtained from the teacher’s personal control or from written sources.

Research method

There is a slight difference between the actions of the teacher when using heuristic methods. In terms of structure, the contents of both methods are the same. Both heuristic and research methods suppose identifying educational problems and problem tasks. A teacher manages the cognitive activity of learners, and learners solve problematic tasks in both of these situations[46, pp-183].

Practical teaching method

- Based on the practical work of pupils. These methods create practical skills. Practical methods include exercises, laboratory and practical works.

Exercises

This method is a repeated (several times) performance of mental or practical actions to acquire knowledge or to improve its quality.

Creative work

Performing creative work is an important tool for developing pupils' creative abilities, developing targeted self-help skills, expanding and deepening knowledge, and using them in specific tasks.

Laboratory work is an experiment with the help of equipment and other technical facilities on the instructions of the teacher, i.e studying any phenomenon with special equipment. A practical lesson is the main form of training aimed at the formation of learning and practical skills.

Activation of the cognitive activity can be done in extracurricular activities.[47, pp-23-26].

Visual methods of teaching

Visual methods of teaching are methods that depend on the visual aids and technical tools used in the learning process. Visual methods used with verbal and practical methods of teaching. Visual methods of teaching can be divided into two major groups: illustration and demonstration methods.

Illustration method provides pupils with illustrated guides such as posters, tables, pictures, maps, pictures on board etc.

Demonstration method is usually used to demonstrate demonstration aids, experiments, technical installations, films, etc[48, pp-43-46].

In addition to the methods, the following ways of managing pupils' cognitive activity are also used:

1) Students' activity and interest in perceiving the study material:

- News perception- incorporation of historical information on the content of interesting information, facts, educational materials;
- Awakening of interest through the semantic sense of words based on the method of semantization;
- dynamic method - creation of a device for studying dynamics and development of phenomena;
- method of importance - the study of material depending on biological, economic and aesthetic values;

2) Methods of increasing pupils' activity at the stage of development of research materials:

- Heuristic perception leads to asking difficult questions and to the answers by leading questions;
- Socrates acceptance - discussion of controversial issues, which allows pupils to prove and defend their opinion;
- Research method analyses the control of pupils, experiments, literature, solves cognitive tasks, makes conclusions;

3) Methods of activation of the cognitive activity at the stage of knowledge modernization:

- Naturalization method - execution of tasks by using natural objects, collections.

Various options can be used to evaluate pupils' performance in the classroom. Maintaining high cognitive activity in the classroom:

1) Competent and independent jury (a teacher from another group and pupils of other classes are consultants)

2) The teacher distributes the tasks according to the rules, otherwise weak pupils will not be interested in solving complicated tasks, and strong pupils will not be interested in solving simple ones.

3) Individual assessment of each pupil and group actions

5) Giving creative homework for the final lesson. Then pupils, who are not visible among activists, can show themselves. The cognitive activity can also be activated during extracurricular activities[49, pp-192].

When choosing different methods of learning, first of all, it is necessary to strive for productive results. A student is required to not only understand, remember and deepen the gained knowledge but also apply and develop it in practical activity. It is important not only to understand and remember, but also to have knowledge that is practically acquired, and cognitive activity of learners should not be limited to listening, accepting and approving the learning material. Again, the learner tries to use the new knowledge wisely and relying on his experience forms a new image of professional activity. The more active this thinking and practical learning process, the more effective they will be.

Learners begin to form new beliefs and their professional education abounds. Therefore, it is important to activate educational and cognitive activities in the education process[50, pp-191].

Along with methods, there are principles for activating pupils' cognitive activity. Choosing them as well as choosing teaching methods should be determined taking into account the peculiarities learning process.

Principles of activation of cognitive activity

1. The problematic position is basic.

It lies in the fact that by tasks and questions that get complicated it creates a problem situation in the child's mind, acquired knowledge is insufficient to get out of it and based on the mistakes of his own or classmates, with the help of a teacher, classmates, he has to actively get knowledge.

Thus, students acquire new knowledge not in the ready form, but through the active cognitive activity. The peculiarity of using this approach is its focus on real learning goals: elimination of false stereotypes, progressive and economic thinking.

Most importantly, the content of the problem material should be selected taking into account the interests of pupils. One of the main objectives of education is to be able to apply new knowledge, including skills, development and improvement. [9, pp-240].

2. The principle of ensuring the equivalence of educational and cognitive activities depending on the nature of practical tasks.

Practical tasks have always been an integral part of the training of pupils.

The essence of this principle is to organize as much as possible the concrete actions of pupils, depending on the nature of learning and cognitive activities. It should provide a transition to practical understanding from a theoretical understanding of new knowledge, combined with the principle of problem-based learning.

3. The principle of mutual teaching in the organization of pupils' educational and cognitive activities is no less important. In the process of learning, students learn and share knowledge. Successful self-study requires not only a theoretical base, but also analysis and synthesis of research phenomena, facts and information, creative use of acquired knowledge, the ability to draw conclusions from others' and own mistakes, develop knowledge and skills, as well as update knowledge[23, pp-44-46].

4 .The principle of studying learning problems

It is important that the educational and cognitive activities of pupils include creative, exploratory and optimal analysis and generalization elements. The process of investigating a particular phenomenon or problem must be of a research nature in all its features.

5. The principle of personalization is important for any learning process

This principle is of particular importance in learning because there are many psychophysical features:

- audience composition (division into groups)
- Adaptation to the educational process
- the ability to receive news etc.

All of this requires the use of forms and methods of teaching that involve taking into account individual characteristics of each student, that is, the principle of personalization of the learning process.

6. The principle of self-education

This principle allows each pupil to acquire knowledge and cognitive activity on the basis of his/her individual aspirations to improve his/her own knowledge and skills, read additional literature, and get advice.

7. The principle of motivation

Pupils ' personal and collective actions are only possible if there is a stimulus. Therefore, among activation principles, the motivation of educational and cognitive activities plays an important role.

The most important thing is not to oblige to engage in intensive activities, but to encourage pupils to solve problems, learn, prove, restore something

Apart from the principles and methods, there are factors that encourage pupils to become active, they can be teachers' motivations to make pupils more active. [36, pp-56].

Obviously, in order to achieve a high level of solved tasks, it is necessary to follow the ways of integration and use of teaching methods.

At each stage of the learning process, some methods are dominant, while others are subordinate. Some methods provide educational solutions more, but some methods less.

In addition, when solving problems of the lesson, not including at least one of the methods will significantly reduce its effectiveness even in subordinate situations. Perhaps this is comparable with the absence of any component, even in very small doses, with the absence of a remedy (which reduces or completely changes the medicinal properties).

Thus, the main methods that promote pupils' cognitive activity in biology classes are:

- discussion method;
- self-study method of students;
- method of cognitive problem;
- heuristic or partial search method;
- research method of teaching;
- method of creative work;
- practical method;
- laboratory method;
- visual method.

Problematic teaching

It is based on the teacher's ability to create trouble situations and independently search for them:

1. Creating a problem situation;
2. Forming the hypothesis of solution;
3. Checking a solution by systematizing the received information. The key condition is to encourage students.

The greatest effect of activation in the classroom is determined by the circumstances in which the pupils work:

• protecting opinions;
• participating in discussions and debates;
• asking friends and teachers questions;
• considerating responses from comrades;
• evaluating responses and written works of friends;
•explaining incomprehensible materials to pupils with poor academic performance;
• selecting an individual task;
• finding several options for cognitive tasks (problems);
• creating self-assessment, analysis of individual cognitive and practical actions;
• cognitive problems can be solved using complex methods. [52, pp-121].

The structure of activity is divided into component parts:

- preparation for the implementation of educational tasks
- desire for an independent activity;
- conscious understanding of the tasks;

- systematic teaching;
- desire to improve the individual level.

Student activity management is traditionally called activation. Activity can be found in energetic, purposeful training of pupils, overcoming passive and stereotypical activity, as well as in the process of crisis and mental decline.

The main goal of activation is the formation of pupils' activity and improvement of the quality of the educational process.

An actively managed process is aimed at providing deep knowledge of all pupils and enhancing feedback.

It is necessary to take into account the active management of pupils' personal qualities, the modelling of the educational process, its forecasting, specific planning, training and development of each pupil. [53, pp-288].

During the study, the pupil can show passive and active cognitive activity.

There are different opinions about cognitive activity of pupils.

B.P. Esipov believes that enhancing cognitive activity is the conscious, purposeful performance of mental or physical work necessary to acquire knowledge, skills and abilities.

G.M. Lebedev noted that "cognitive activity is a reflection of pupils' mastering of knowledge, as well as interest, self-actualization and diligence in learning."

In the first case, we are talking about self-activities of teachers and pupils, and in the second - about the activities of pupils.

In the second case, the author adds interest, independence and constant efforts of pupils in the concept of cognitive activity. Attitude of pupils towards the learning process is usually active.

Activity (learning, development, content, etc.). determines the degree of intensity (strength) of the interaction of pupils with the service object.

Today there is no doubt that the cognitive interest of schoolchildren can largely determine the quality of the development of knowledge, objectivity and general competence, thinking and creativity.

The cognitive interest in pedagogy and the methodology of biology are still relevant.

The goal is a positive emotional attitude to education, their acquisition, further expansion and deepening, in other words, cognitive interest is the basis of educational activities.

In turn, in the course of activity, pupils can develop a cognitive interest, develop creativity and independence.

The active intellectual work of the pupil in the lesson, self-knowledge is key to the successful study. The higher the cognitive activity of the pupils, the greater the interest in the subject. How can this interest be formed?

There are a lot of methods and techniques used in the lesson. But that is not enough.

The atmosphere of the lesson, being with children, joy and excitement in their eyes - for this, you go to classes to meet with children. [54, pp-110].

In the development of interest in biology, it is not enough to follow the teaching material. Science, of course, interests pupils. But how can you help them master complex material?

What can be done to make it easier for a child to move on to active cognitive activity from simple thinking? When planning a lesson, the teacher aims that knowledge will be useful in competitions, olympiads, universities, and ordinary daily life.

Pupils strive to learn basic legitimacies from simple ones, and simple legitimacies from complex ones.

It is important not to look for keys to solve the problem, but to work in the search for knowledge, not satisfying ready-made facts.

Therefore, the main goal of our methodological activity is to create conditions for the development of pupils' creative, communicative and cognitive abilities.

In order to achieve this goal, it is necessary to use various technological elements: games, problem-based learning, group self-study.

An effective tool for the development of pupils' creative abilities can be taught in problem, partial, and heuristic situations.

Of course, an experiment that requires finding ways to learn about life helps to develop a sense of interest in the topic. [55, pp-311].

Of course, when it is of interest to the research topic, it is necessary to change the ways in which children are influenced by the level of their creative activity, psychological and age differences, personality development.

In grades 5-7 the emotional component of cognitive interest prevails, during this period, pedagogical influence is mainly based on the cognitive process, optimal emotional communication for the educational process[42, pp-270].

In adult children (the 8-9th forms), interest in relationships and relations between objects and phenomena increases. In this case, we must encourage children to explore biological phenomena, processes, problems and explore the meaning and phenomenon of nature.

The intellectual component of cognitive interest is in the first place.

Although we work with any age group, the main task is to show the importance of biological education in the life of every person and society; relationship with nature, the role of man and the responsibility for the preservation of life on earth.

Children need a more comprehensive and effective way of thinking.

It is much more interesting when the work of children is different in the classroom.

This means that the types of classes should be different depending on the methods used and the materials presented. Each lesson has its own "feature".

And then there will be a sincere interest in the eyes of children, the desire for knowledge, the desire for action and self-esteem[56, pp-61].

Table 1. – Activity of a teacher and a student in problem situations

A way to create an important problem situation	A teacher's role in creating problem situations	Students' actions during problem situations	General actions of students and teachers
Using literary text, including biological mistakes and inaccuracies	Studying literary texts carefully and emotionally	Showing your opinion, experience by text	Classification of comments, formation of conflicts
Visualizing videos, pictures, situations	Students are offered to imagine the appearance and address, etc. of animals with their eyes closed	Description of internal images, pictures	Discussion of pictures and descriptions, formation of conflicts
Describing a situation with a teacher's statement	Students are asked to compare lives of animals, structural features, habitat, comparison of animals.	Description of the problem, illustration and explanation of their own pictures	Discussion of proposed videos and pictures, conflict resolution
Playing in the theatre or in situations	Performing a situation	Writing a script, dividing roles	Discussion of what was seen, formation of conflicts
Showing live objects	The task of investigating animal behaviour is given	Trying to complete the task	Complicated reflection, conflict formation
Reflection	A discussion topic is given, personal opinions are expressed	Expression of their impressions about the topic and attitude towards it	Identification of the theme and their own attitudes towards it

2.7. Innovative methods and diagnostic tasks for increasing students' cognitive interest

Various techniques can be used to increase cognitive interest at different stages of study. Here are some of them.

1. Class 6.Theme: "Biology is a science about living organisms". Period of education modernization.

A Creative task (work in pairs): writings on the board: science about living organisms, wildlife, biology, plants, nutrition, nature, metabolism, animals, growth, fungus, reproduction, bacteria, cell structure, breathing, biosphere. Use these words to describe what you know from biology.

2.Class 8. Theme: "Muscles". Period of strengthening knowledge. Working with terms. The "hot chair" method is used. The student sits on a chair with his back to the blackboard[57, pp-150].

The teacher writes on the blackboard: muscles, muscle tissue, beginning of muscle, skeletal muscle tissue. The student describes the terms without using a keyword. The student must identify it.

3.Class 8. Theme: "Arthropods" . Period of concluding knowledge(game)

"Write a greeting letter"

Each child is given a leaflet with the name of an arthropod. Within one minute, students write signs of insects, exchanging leaflets with each other. Wins that team whose answer is complete.

Table 2 - Compare the quality of water and structure of the fish by looking at the fish's outer structure, find matching.

Properties of the aquatic environment	Adaptation to environmental factors
a) high density	Streamlined body shape (head, torso, tail), slime (mucous glands), lamellar flakes, fins (pectoral, abdominal,dorsal,tail,anal)
b) transparency	Protective coloration, eyes (cornea,lens)
c) low oxygen,dissolves other things too	Breathe with gills,sense of smell(nostrils)
d) stream	Literal line feels the flow and power of water

d) high pressure at large depth	from a streamlined shape to tape and disc-shaped
e) strongly absorbs light rays	Fish,living in deep water have big eyes.

4. "Third wheel" Three-word examples are written on the blackboard. Find the odd one out and explain.
wild wasp –duck -shrimp
scabies –scorpion -crab
wasp –ant -fly
blue grasshopper- chirping grasshopper-beetle
Taiga tick – ground beetle
5.Class 7. Theme "Amphibians" External structure features." Period of acquisition of new knowledge.

Task: Fill the table, connecting the external structure of the toad with aquatic life
Glass 7.Theme«External structure of fish» Period of acquisition of a new lesson.

Images 1 - Group evaluation period

Table 3.- Signs of adaptation of amphibians

Terrestrial	Aquatic
Development of lungs	Presence of gills

Development of eyes	Presence of the membrane between the toes

Table 4.- If the element or structure of the indicated cells corresponds to the name of the animal, fill it with a "+" sign, if not, with a "-" sign.

	Shark	alligator	octopus	Tubifex (annelid worms)	Scarabaeus
Eyelids	-	+	+	-	-
hemoglobin	+	+	-	+	-
Capillary	+	+	+	+	-
Lungs	-	+	-	-	-
Cerebellum	+	+	-	-	-
Bladder	-	+	-	-	-
nerve clusters	+	+	+	+	+
Atrium	+	+	+	-	-

Table 5.- Describe comparing representatives of flatworms.

Signs	***Turbellaria***	***Class of flukes***	***Cestoda***
Habitat	Moves freely in water	Endoparasites	Endoparasites
Body shape	Leaf-shaped flat	Leaf-shaped flat	Elongated and divided into segments.
Attachment	Absence of suckers	Presence of oral and ventral suckers	Presence of suckers and hooks
Skin covering	Absence of cuticle, skin is covered with ciliated epithelium	Dense cuticle Absence of cilia	Dense cuticle Absence of cilia
Digestive system	Presence of intestines	Presence of intestines	Absence of intestines

Senses	Present in adults	Absent in the majority	Absent in the majority
Development	Simple	Complex	Complex
Common types	White planarian	Liver fluke, cat liver fluke,fluke etc.	Beef tapeworm,pork tapeworm,cestoda, echinococcus etc.

Table 6. - Describe the main types of parasitic flatworms

Types	Adult body size	Intermediate owner	Final owner
Liver fluke	3 – 4 cm	Pond snail	Cattle
Beef tapeworm	4 – 10 m	Cattle,sheep, goat	Person
Pork tapeworm	2 – 3 m	Pig, dog, cat etc.	Person
Flat cestoda	8 - 10 m and more	Small crayfish, fish	Person,dog, cat
Echinococcus	3 – 5 mm	Cow,sheep, pig,person	Dog, wolf

Table 7.- Describe the structure and life characteristics of molluscs species of individual classes.

Signs, peculiarities of life	Classes		
	Gastropods (105,000 species)	Bivalves (about 20,000 species)	Cephalopods (about 730 species)
Habitat	Water bottom,land	Water bottom	Water depth,closer to the bottom
Shell	Full, spiral	Consists of two hinged parts	Not developed
Parts of the body	Head, torso , leg	Torso , leg	Head, torso, leg changed, turned into tentacles
Organs of movement ,movement	Moves slowly with muscular legs	The leg is wedge-shaped, moves drafting the water bottom.	Moves with tentacles reactively or using tentacles
Vital	Moves very slowly	Moves very slowly	Swims actively

activity			
Types of food	Eats the organs of plants scraping	Filters organisms entering with water from mantle cavity	Predators:catch by chasing or hunting
Respiration	Trachea and lungs, atmospheric air, some types using gills	Gills, dissolved in water with oxygen	Gills, dissolved in water with oxygen

Images 2 - Poster defense training

Task 1.
Morphological characteristics of plants.
1.Plants-Rose hip.2. Plants- Trollius
Description plan:
1. Life form of plants
2. Underground organs
3. Kidneys
a) function;
b) structure;
c) by location in space;
4. Stalk (shape and edge);
5. Location of a leaf;

6. Leaf:
a) pedicellate, sedentary;
b) presence of leaf parts;
c) simple or complex;
d) venation;
7. Types of inflorescence;
8. Characteristics of the flower;
9. Formula and diagram of the flower;
10. Determine family memberships; [54, pp-110].
Table 8. - Give a comparative description of widespread types of ringed worms.

Signs	Oligochaets	Polychaetes	Leech class
Habitat	Fresh water, soil, few species in the seas	Swim freely in the seas	Ectoparasites
Shape of the body	The head is not clearly visible	The head is clearly visible	The head is not clearly visible
Bristles	Few bristles in each segment	Lots of bristles	Absence of bristles, few body segments
Reproductive system	Hermaphrodite	Dioecious	Hermaphrodite
Reproductive glands	Presence in several segments	Presence in all segments	Presence in few segments
Fertilization	Cross	External	Cross
Egg features	Lays in cocoons	Absence of cocoons	Lays in cocoons
Larvae	Direct development	Larvae are called trochophora	Direct Development
Main types	Earthworms etc.	Nereidae, sandworm etc.	Big and small horse leech, medicinal leech etc.

3. METHODOLOGY OF FORMATION OF DIAGNOSTIC SKILLS

3.1. Experimental work on formation of diagnostic skills

Research base: Turkestan, school-gymnasium *№15 named after Magzhan Zhumabayev.*

The presence and relevance of scientific preconditions for solving the problem of determining the reasons for the quality of education and the progress of students on the basis of biological knowledge led to the choice of research theme "Formation of readiness for education quality diagnostics".

During the pedagogical experiment, the effectiveness of the students' individual, group forms of teaching, the quality of diagnostics was determined during the study of biology lessons.

During our experimental work, we relied on the works of researchers such as: V.I. Andreev, V.P. Bespalko, V.A. Kalnei, A.N.Mayorov, S.E.Shishov, Yu.V.Vasilyev, Yu.A.Konarzhevsky, V.S.Lazarev, A. M.Moiseev, A.A. Orlov, V.P. Simonov, P.I. Tretyakov, T.I. Shamova etc, who studied the monitoring and diagnostics issues accumulated in domestic and foreign publications.

The findings of these scientists have identified the basis of the monitoring system, management function and principles, and the content of management activities.

The purpose and objectives of the work determined the logic and stages of the study:

At the first stage, the relevance of the research topic was determined and the literature review of the problem was carried out with psychological, pedagogical, philosophical and methodological literature.

The methods of forming experiments were defined, the purpose of the work, problems and assumptions and object of research, the scientific theoretical basis of the topic were considered. The results of the defining experiment were obtained.

At the second stage, the status and conditions of the formation of students' knowledge quality diagnostics in the biology lessons were identified and the methods and forms of their development were selected.

The diagnostic methodology for the progress and quality of students' learning has been adjusted. Through the forms of teaching in biology lessons,

diagnostics and experimental verification of the individual, group quality of students were carried out.

At the third stage, the analysis, systematization and generalization of pedagogical researches and results, data obtained during the formation were carried out. At the third stage the forming experiment was continued.

The effectiveness of the selected method was checked in practice. Finally, the dissertation work was completed, the results were analysed, and the benefits and advantages were determined.

Scientific and methodological recommendations for the formation of the skills of diagnosing the quality of education in biology lessons have been developed. In the biology class, it was proposed to study the theory and practice of organizing the diagnostic work of students' knowledge quality, to introduce the research experiment into the learning process.

Experimental works were carried out in the school-gymnasium №15 named after Magzhan Zhumabaev in Turkestan in 2017 - 2018 academic year.

52 students from grades 6-9 of the secondary school №15 took part in the experiment. In order not to carry out the experiment, students were divided into two groups: the experimental group (EG) - 26 students and the control group (CG) - 26 students.

Experimental work was carried out in three stages:

1. Defining experiment (September-November 2017);
2. Forming experiment (April-May 2018);
3. Observing experiment - checking the results of the research (October 2018).

Diagnosis considers the results in relation to ways and means of achieving it, and determines the trends in the same field and the dynamics of pupil formation [58, pp-9-18].

As K.N.Narybaev noted, “any change, especially in the field of education and its system, must first be scientifically justified. Otherwise, it is unknown where this will lead to. This does not exclude the role of work in education and changes or reforming the system.

This is the need to improve the efficiency, reliability and effectiveness of the education reform issue of public importance. "

Many special literary sources prove that diagnostics traditionally has a wider and deeper view than testing knowledge and skills.

It distinguishes teaching, learning success, expertise of learning outcomes.

The lesson efficiency formula consists of two components: thorough preparation of the lesson and the way of carrying it out.

A lesson that is poorly planned, insufficiently thought out, designed in a hurry and inconsistent with the capabilities of the students, cannot be of high quality.

3.2. ANALYSIS OF WORK RESULTS ON FORMATION OF DIAGNOSTIC SKILLS

Materials and methods of research

During the identification experiment, the following tasks were performed:

1. Analysis of pedagogical, psychological and methodological literature on the research topic.
2. Study and analysis of the state of the problem of monitoring and diagnostics in the history of the national school.
3. Pedagogical control, interview with teachers, personal training.
4. Identification, search and exercise experimentation.
5. Analysis of quantitative and qualitative results of experiment.

Table 9.- Content of questionnaire questions

Subjects		1	2	3	4	5	6	7	8
Questions :									
1. What kind of subjects do you like? (Please,select one or more responses and fill in the cells)									
2. I like this subject because	a) I like the subject teacher								
	b)I like studying this subject								
	c)it is easy to study								
3. How often do you study this subject?	a)often								
	б)sometimes								
	в) seldom								
4. Do you study additional material on the subject that you like?	a)much, always								
	б) sometimes								
	в)little, never								
5. Do you try to understand its meaning deeply?	a) all the time								
	б) sometimes								
	в) seldom								

6.Do you go to extra courses on this subject to expand your worldview?	а) in gymnasium								
	б) in another place								
	в) do not go								
7. Where do you get the information that interests you on this subject?	а)from books,magazines								
	б) from the Internet								
	в) only from books								
8. Do you as questions on the subject you like?	а) often								
	б) sometimes								
	в) rarely								

Several methods have been used in the research to form the skills of knowledge diagnostics.

At this stage of the study, we followed a system of general and specially oriented approaches in science, which links theory and practice with the general requirements of the organization of experimental work[60, pp-195].

By analysing the work of pedagogical scientists, we have summarized the indicators, which allow to clearly defining the effective forms of the methodology of the formation of diagnostic skills of students' knowledge quality:

The cognitive definition: By the method of G.I.Schukina we have identified cognitive interests of students.

We have identified the cognitive activity of students in solving vital problems and the intensity and thinking skills of cognitive interest.

These works were based on a questionnaire of eight questions.

Processing results.

The number of chosen disciplines should not be less than 5 and not more than 9 in this method, depending on the purpose.

For example:

- maths
- foreign language
- Kazakh language
- literature
- biology

If a student chooses one subject, the cognitive activity will be low, if he chooses 2-3 subjects, the cognitive activity will be average, if 4 or more subjects are chosen it will be high, but if the choice is too much the student cannot concentrate and will give negative results.

By analysing the results of the survey, the following conclusion was drawn: 98% of students liked biology and only 2% looked carelessly to biology[61, pp-313-318].

Children like studying biology, because they learn a lot from the subject, study the structure and diversity of living organisms, follow the laboratory work and work with a microscope.

They like talking to a biology teacher. The subject is very interesting. Many pupils love animals and therefore are interested in biology.

Therefore, at present, it is concluded that education should be designed not only to educate a creative, well-educated person, but also to educate a person who is adapted to the changing reality and is ready to learn new directions and types of activities.

In this regard, research and development of cognitive activities are of particular importance. In cognitive activity recognition, content can also be used with a well-structured questionnaire.

Images 3- Analysis of results in group work

In the course of the study, the first diagnostics of cognitive activity, identification of problems, development of activity directions and creation of a recommendation base were planned, measures on increase of cognitive activity in this direction, dynamics of observer, diagnostics were defined.

It should be noted that this stage is the collection of actual materials. If the student has no planning skills, there is no need to talk about the effectiveness of the research and the impact of creative search.

Even in the case of positive results (as seen in the practice of cognitive independence of the average student), organizational deficiencies in the planning process can weaken the teacher's influence on the student's side and, conversely,

can lead to the formation of negative qualities of behaviour (negligence, irresponsibility, carelessness, etc.).

It was determined that a research lesson has an impact that can increase cognitive activity of students, encourage pupils to study hard. All grade students worked with big interest and enthusiasm.

A teacher's personality, erudition and teaching skills are a very effective factor that can form students' learning needs and encourage their cognitive activity.

Only when a teacher masters his / her subject he/she works with interesting data and facts in the learning process, makes pupils admire by his/her wide worldview. In this case, the psychological mechanism of imitation will begin, and the pupils' desire to learn appears[61, pp-313-318].

In the framework of the proposed practice in accordance with the goals and objectives of the pedagogical activity, the organization of the educational process in the educational-cognitive activity is based on the following methods of providing students:

Pedagogical and methodological researches were conducted by the following methods:

Materials and methods of research

Several methods have been used in the research to form the skills of knowledge diagnostics:

1. Determination of cognitive interest (author G.I Schukina)
2. "Limit of activity" (author T.L Romanova), its purpose is to determine the possibility of cognitive activity;
3. Determination of intelligence, swiftness through the method of determining the intensity of cognitive interest(author V.S. Yurkevich);

1. Methods of determining the level of communicative competence

The version of the research tool is based on the methodology of R.V. Ovcharova and allows determining the level of communicative motivation of middle school students.

Purpose: to determine the level of communicative inclination of students.

Process of instruction: Students will be asked the following questions: "You have to answer 20 questions. Express you opinion on each of them and answer "yes" or "no". If the answer is positive, put "+" on the corresponding cell of the sheet, and if it is negative, it will be "-". Consider it as a usual situation and give quick responses.

Questions:

1. Can you often persuade many of your comrades to accept your opinion?
2. Are you always confused in critical situations?
3. Do you like public work?
4. If you have any obstacles to realize your intentions, do you really want to give up your plans?
5. Do you like creating or organizing various games and entertainment activities with your friends?
6. Do you often put off things that can be done today for another day?

7. Do you try to make your friends act according to your opinion?
8. Is it true that you and your comrades do not have conflicts because you have not fulfilled your promises, duties or obligations?
9. Do you take the initiative to solve important issues frequently?
10. Do you feel uncomfortable in unfamiliar situations?
11. Does it make you sad when you don't finish important tasks?
12. Are you tired of talking to your friends too often?
13. Do you often take the initiative in solving problems that affect the interests of your peers?
14. Is it true that you immediately try to prove your point?
15. Do you participate in social activities of the school (class)?
16. If your comrades do not admit your opinion, do you try to defend your opinion or decision?
17. Are you willing to make arrangements for your comrades?
18. Are you often late for meetings and other gatherings?
19. Are you often under the attention of your friends?
20. Is it true that you don't feel confident among large groups of friends? [62, pp-35-40].

Processing results. The level of communicative competence is determined by a total of 20 positive answers to all odd questions and negative answers to even questions. Thus, the level of development of communicative competence of a child can be evaluated on the basis of this indicator:

• low level - 0,1-0,55;
• average level -0,56-0,75;
• high level - 0.76-1.

Based on these techniques, a survey of several contents was conducted through questionnaires.

Stages of the survey:

• the first diagnosis of cognitive activity, identification of problems, development of activity and creation of a recommendation base.

Carrying out activities to increase cognitive activity.

• observer, diagnostics, dynamics determination
• Determining the effectiveness of the service

The purpose of our study was to determine the pedagogical conditions and level of development of cognitive activity in biology classes [61, pp-313-318].

We have developed a questionnaire diagnostic tool for the 7th grade.

The content of the questionnaire was based on the following questions.(8questions)

1. Attitudes of the students towards the subject "Biology"
2.The importance of studying biology among students
3. The use of additional literature by students in the implementation of homework assignments on biology
4. The choice of pupils' favourite form of work in biology classes
5. Evaluation of students' biological knowledge
6. Attitudes of students towards improving the quality of biological education

7. Achievements of students in biology
8 .Students' interest in biology outside the curriculum

Research results and their analysis

Analysing questionnaires of the 7"A"class, it was concluded that 82% of whole pupils liked biology and 12% did not care. 56% of schoolchildren think that biology is needed to expand intellectual thinking, while 26% believe that biology can be useful in the future[62, pp-35-40].

There are pupils who think that biology is needed to study other subjects.

There are also pupils who presented their answers such as: "Biology is necessary for admission to a medical university", "It is necessary to know the origin and structure of living organisms". Many pupils want to handle laboratory tasks, test tasks, creative tasks in biology classes, discuss problems together , make presentations and take part in excursions.

A number of experiments were conducted among the 6^{th} form students in the study to consolidate the principles put to the defence. The study was divided into the following stages:

1. Defining stage

The goal is to determine the level of pupils' cognitive potential.

In order to achieve this goal, the following methods were used:

- supervision of pupils during the lesson;
- analysis of the execution of assigned tasks; [61, pp-313-318].

2.Forming stage

The goal is to motivate pupils to increase their cognitive potential.

Within this stage, the following forms of study were conducted: competition-lesson, quiz, six hats, molecule and other non-traditional lessons like that.

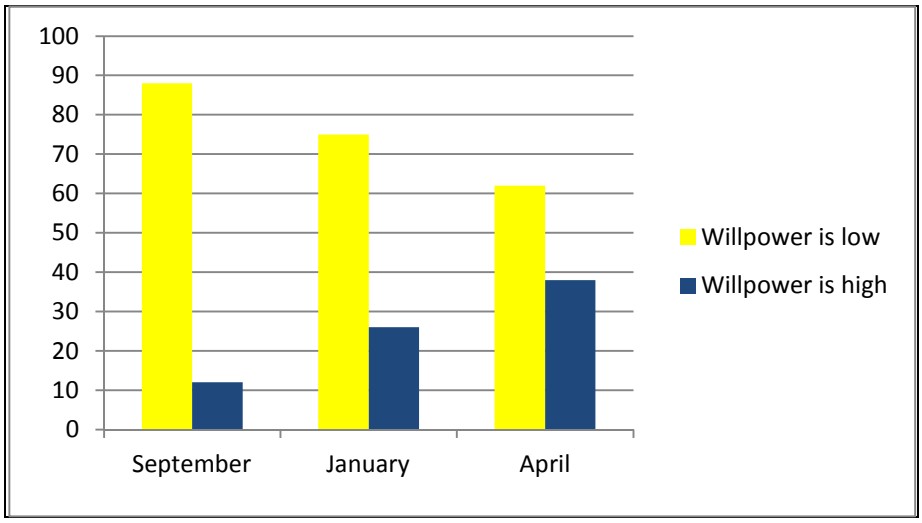
3.Observing Stage

The goal is to achieve the result of determining the increase of willpower of middle school students in increasing cognitive activity. During this period, questionnaires, tests were conducted and their results were analysed.

The concept of diagnostics includes monitoring, checking, evaluating, collecting and analysing statistical data, defining the dynamics and trends, and predicting future outcomes.

Thus, pedagogical diagnostics aims to provide objective information about, firstly, optimization of the individual learning process; secondly, about determining education outcomes in terms of the public interest and the quality of learners' readiness in the quality of education, pupils' training at all levels of the continuous education system.

1- diagram. Indicators of the results of the diagnostics performed by the method of "Self-control"



As it can be seen from the diagram, the results of the first diagnosis showed that willpower in increasing cognitive potential was not well-developed in experimental and supervisory classes, and in each class there were children whose willpower was low and not fully developed.

Their emotional environment is unpleasant.

The results of the study showed that the results of the questionnaire analysis were emotionally improved. 25% (4 children) of pupils have improved willpower, but and the remaining children had problems.

Now, it was determined that 38% (6 children) of students had low willpower , 44% (7 children) of pupils had signs of fear, 25% had secondary symptoms of aggression, and 12% (2 children) pupils' willpower was not developed[62, pp-35-40].

Through monitoring, it is possible to analyse many problems in educational institutions, work with teachers and improve the quality of work with pupils.

Taking into account the experience of future monitoring studies, only digital data is used in the work.

In addition, pedagogical analysis and systematic planning of the right path will encourage pupils and teachers to succeed and improve school rankings. A systematic analysis will increase the level of attendance, minimize causeless absence of pupils[61, pp-313-318].

Instead of the outer interest in learning, there is a strong and sustained incentive that creates and deepens the inner interest among them, there is a discrepancy between knowledge, ability, skill, success, and the lack of understanding of the social significance of successful learning that shapes the need for cognitive activity.

These driving forces, when entering into force, give rise to deep cognitive interest

Direct and inner interest can be the same and vice versa. One of them is the "cognitive reflex," and the other is pedagogical hard labour.

The first is the short-term mental condition of the cognitive direction, and the second is characteristic of behaviour caused by stable cognitive activity.
Form of work: group
Material: questionnaires
By disseminating questionnaires, each student will be able to work independently during testing.
After processing the data, the test results are recorded in the matrix.
Questionnaire №1. Study of cognitive activity of students
Name Tulip . Form 6 a. Date 9. 10.2018.
Guidance: Children, you will be asked to submit a questionnaire consisting of 8 questions. When answering the questions in the questionnaire, select one or more subjects and mark the "+" underneath. When you answer the following questions, just fill"+" next to the selected subjects.
Working with the questionnaire in increasing cognitive activity
We studied pupils' cognitive interest in biology (motivation-value criterion) through a questionnaire[61, pp-313-318].

Questionnaire "Cognitive interest of students in biology"
1. Are you interested in biology as a science?
2. Do you use additional literature when preparing for biology lessons?
3. Do you often want to see popular science films on biology topics?
4. Can you deepen your knowledge in biology courses?
5. Will you need biological knowledge in life?
6. Are you interested in books about the structure and functions of the human body?
7. Did your knowledge about the negative impact of alcohol and smoking on the human body help you to resist these bad habits?
8. How often do you use biological knowledge?
9. Do you want to take an exam in biology?

Table 10. - Indicators for problem solving

Name	Activity in the group	Ability to see the problem in different ways	Ability to accept other opinions	Ability to apply biological knowledge in practice
Dias	high	high	Average	Good
Aiaru	average		Average	Low
Zhandos	Good	low	Good	Average
Zhansaya	average	good	good	Good
Askhat	Good	average	good	High

Diana	low	average	High	Average
Aibar	Low	low	average	Low

We have evaluated the ability to solve life situations using biological knowledge (problem criteria) through the "Six hats of thinking" method.
The table is filled out according to the results of the group observation.
We use the “Arguments” method to evaluate the ability to build a system of arguments. On the basis of the results, by the ability to create arguments a creative thinking assessment table is filled.
In assessing this, we used three estimates: high (h), average (a), low (l).
We use the method "Insert" to search for sources of information, understanding the read and sorting information (size of information).
According to the results, a table is filled. [62, pp-35-40].

Images 4- From the time of argumentation and proof

We explored the possibility of formulating ideas (social criteria) based on the self-assessment of pupils in the group. Pupils answer questions and evaluate themselves in a five-point system[62, pp-35-40].

Table 11. - Evaluation of the ability to create arguments

Name	Understanding the read	Ability to sort information	Ability to evaluate the read through creative thinking	Ability to create arguments	Ability to bring evidence of argument and make conclusions	Evaluation of the correctness or incorrectness of the argument
Askhat	high	High	High	high	High	high
Dinara	high	High	Average	high	High	average
Ardak	high	High	Average	high	Average	average
Indira	high	average	Low	Low	Average	
Aizhan	average	average	average		Low	Average
Aidyn	high	High	average	average	Low	High
Islam	high	average	high	average	Average	Low

Table 12. - Criteria of self-assessment

Name	Criteria of self-assessment of pupils	Self-assessment by five-point system
Aisha	I listen to others carefully	4
Daniyar	I respect all opinions.	4
Aiaru	I speak specifically and briefly on the topic.	
Ilyas	I look at the title and understand its meaning.	5
Miras	I can compare, analyse and summarize information.	5
Aisultan	I believe my classmates.	3

Questionnaire № 2 (for parents)

Methods of diagnostics of changes in the relationships system

Dear Parents! We present today's questionnaire to identify issues that worry you, your child, and educators. We are going to look at our work from your point and we will improve it with your requirements. Dear Parents! The school year will be over soon. It is important for us to know how it passed, what traces it has in your child's heart, how you estimate our work. Your s uggestions will help your child's future education and upbringing. If you have difficulty answering any question, you can leave the question unanswered.

1. Having seen the learning outcomes, were your expectations satisfied?
2. Does the child share the impressions about the classroom? What does he say?
3. What subject has benefited your child?
4. Does the program that our team offers satisfy you?
5. How does your child feel about workload?
6. Do you think that the teacher judges your child's learning results correctly?
7. How does collective work affect lessons at school?
8. Does your child like the teacher?
9. Why does your child show a steady interest in class or why is the interest so weak? What is the reason in your opinion?
10. What kind of challenges do you face with your children?

Relationships with the teacher, relationships with children, other difficulties in studying the program (define)

11. Has your child found interesting friends among his classmates?
12. Do you want your child to study in another class or with another teacher?
13. Would you agree to pay for the lesson if we talked about it?
14. What is your opinion about activities, demonstrative lessons, holidays and concerts at school?
15. Your wishes to the parent committee:
16. Write your full name, please.

Thank you for your cooperation. [62, pp-35-40].

Table 13.- Monitoring of disciplines for the 2017-2018 academic year

Discipline	Form	Preliminary			Interim			Final			Knowledge quality %			Score		
Indicator		5	4	3	5	4	3	5	4	3	Preliminary	Interim	Final	Preliminary	Interim	Final
Biology	6A	9	15	4	7	13	8	7	12	9	85,71	71,42	67,85	4,17	3,85	3,78
Biology	6B	10	13	5	9	11	8	8	12	8	82,14	71,42	71,42	4,07	4,03	3,85
Biology	7A	12	12	4	10	13	5	10	16	2	85,71	82,14	92,85	4.28	4,5	4,28
Biology	7B	8	15	5	6	13	9	10	12	6	82,14	67,85	78,57	4,1	3,8	4,14
History	7A	11	13	4	9	1	8	9	5	1	85,7	75	50	4,2	4.3	3,5

						1				1	1					
Kazakh languag e	7B	8	14	4	7	1 2	9	8	8	1 2	75	67 ,8 5	57, 14	3,8	3,9	3,8

As it is seen from the table, at the beginning of the school year, there was no problem with the material read before. At the start of the school year children were tired and the quality of education has decreased. At the end of the academic year, the level of knowledge of Kazakh language in the 7th b form has declined.

There is an increase in the quality of education in biology because many experimental events were conducted in this experimental class. That is why it is conclude that the interest in the subject has increased.

Decline in the education quality
DEPENDENT ON THE PUPIL, TEACHER AND PARENTAL SUPERVISION
Causes:
- poor parental supervision of a child;
- absence of a child without any reasons;
- inequality of teachers' requirements for pupils' learning;
- absence of motivation to study
- pupils do not see the future of their knowledge;
- Passive forms of teaching (massive, collective teaching) are dominant than active forms (group, pair, design method, discussion, contest) [62, pp-35-40].

Table 14. - A set of self-assessment of pupils in mastering the theme
Discipline: biology. Class: 7A Teacher: Karimzhan. D
Topic: Nervous System Date: 10/21/2018

Name	Ability to find information from books	Using additional literature	Interest and desire	Self-working ability	Ability to make abstracts	Making conclusions	Using logic thinking	Working with schemes	Level of learning the theme	*Conclusion*	
										Pupil	Teacher
1.Kenbayev Aslan										5	5
2.Kalzhan Zhansaya										3	2

3.Nurzhigit Balausa										5	4
4. Pazylbek Dias										4	3
5.Bakhytzhan Amina										3	4
6. Aikynbek Askhat										3	4

Comments:

very good

good

average

correction is required

This table allows the teacher to determine the pupil's ability to evaluate his / her learning skills and to define the level of knowledge in a particular topic. In accordance with the assessment model presented in the table, the teacher will be able to correct gaps in pupils' education[61, pp-313-318].

Self-assessment allows the pupil to realise self-control, as far as possible, to be able to evaluate his / her own knowledge and skills, as well as to become the subject that is able learn, development and improve himself/herself. Self-assessment of the educational service allows the pupil not only to carry out any work in his / her educational work, but also to help shape responsibility for the outcome.

Self-assessment in Biology classes is conducted in two forms: Critical and Reflex

Table 15.- Self-assessment in group work

	Very good	Good	Average	Correction is required
Distribution of tasks in the group		good		
Unity within the group	good			
Oral presentation			Average	
Presentation of scientific material				should be improved
A set of necessary answers				should be improved

Theme: Respiratory system.
Discipline: Biology.
Name: Rose. Class:7b. Date: 20. 10.2018№
Evaluate the work of your team and mark the corresponding column

Images 5 - During group work

Table 16 - Evaluate your contribution to the group work and answer the following questions

	Very good	Good	Average	Correction is required
Understanding tasks and instructions	Very good			
My activity in the group work		Good		
My hard work			average	
My concentration on the group work				should be improved
Participation in the presentation			good	
I was helpful to my team	Very good			
I was(in what role)			average	
Sum up your work today What should you do?		Good		

During the defining experiment, pupils and teachers were interviewed and their results were analysed.

The results of the experiment demonstrated low outcome of the content of the communication mentioned in these terms.

Factors influencing the students' quality of education are: self-reflection activities, organization of cognitive, collective-project research and ways of their descriptions, formalities, preparation of corresponding documents[62, pp-35-40].

During the experiment, pupils of classes 6-9 of the secondary school, based on pedagogical technology, have trained many classes with innovative teaching methods, combining them with mixed learning and comparing them with post-performance outcomes in a multi-tracked classroom.

Comparative nature of the educational indicators of the classroom was analysed.

Work experience has shown that monitoring is a process that requires complex and extensive work.

The most effective educational criteria were taken into account for reducing complexity and widely use of teachers' pedagogical monitoring and diagnostics methods, in accordance with its advanced organizational and pedagogical conditions, a complex model that provides effective interaction between the subjects of the educational process has been developed on the basis of interactive feedback.

CONCLUSION

Work experience has shown that monitoring is a process that requires complex and extensive work. The most effective educational criteria were taken into account for reducing complexity and widely use of teachers' pedagogical monitoring and diagnostics methods, in accordance with its advanced organizational and pedagogical conditions, a complex model that provides effective interaction between the subjects of the educational process has been developed on the basis of interactive feedback.

The results theoretical and experimental researches have confirmed the hypothesis of our work and are as follows:

1 Monitoring is an essential condition of effective management of educational organizations oriented at the achievement of new quality of education.

2. It is the working system, which allows collecting, storing, differentiating and disseminating the information about the activity of the educational system, and to monitor it continuously, forecast the development prospects. The quality of education reflects the modern social demand in the education system as a pedagogical phenomenon and meets the educational needs of society and individual.

3. The content of monitoring and diagnostics, its organization and implementation should submit to the practical implementation of the requirements arising from the research principles such as purposefulness, continuity, integrity and versatility, to coordination and clarity of activities of monitoring subjects.

Modern requirements for any field, including pedagogics, are quite high. The problem of using pedagogical diagnostics depends on the professionalism of the teacher, the improvement of his/her professional activity. Today it is important in both social and theoretical point, also in practice.

Pedagogical diagnostics is one of the directions of modern pedagogical science, which allows teachers to develop their professional activity, including biologists, on a scientific basis. Moreover, this is an improvement of actions.

1. The material was collected on the basis of pedagogical scientific analysis, the study of methodical and psychological literature.
2. A review of the works of scholars and teachers who studied the issue of organising the cognitive activity of learners in schools was conducted.
3. The problem of research has identified the main directions of organising the cognitive activity and teaching: cognitive activity has been formed in accordance with individual abilities of pupils, and independence of pupils' creative development has increased.
4. During the study, the main aspects of the problem of organising students' cognitive activity in learning were identified.

- the work of schoolchildren can be activated by integrating teachers with their own work system, including other forms of education;
- It has been proven that collective learning and cognitive activity of pupils affects the independence of information pupils as well as the goals and contents of the learning process affect the development of pupils

5. As a result of the experiment, teaching with innovative methods was found to be effective the influence of methods such as dialogue, individual, group methods, schemes, six hats, flare circle, molecule on the education quality was defined.

It has been found that it is more effective than traditional teaching (explanatory and visual teaching). It is based on self-study of pupils, and also allows integrating productive and creative cognitive activity of pupils.

Analysing questionnaires of the 7”A” class, it was concluded that 82% of whole pupils liked biology and 12% did not care. 56% of schoolchildren think that biology is needed to expand intellectual thinking, while 26% believe that biology can be useful in the future.

There are pupils who think that biology is needed to study other subjects. There are also pupils who presented their answers such as: "Biology is necessary for admission to a medical university", "It is necessary to know the origin and structure of living organisms".

Many pupils want to handle laboratory tasks, test tasks, creative tasks in biology classes, discuss problems together , make presentations and take part in excursions.

Children like studying biology, because they learn a lot from the subject, study the structure and diversity of living organisms, follow the laboratory work and work with a microscope.

They like talking to a biology teacher. The subject is very interesting. Many pupils love animals and therefore are interested in biology.

Through monitoring, it is possible to analyse many problems in educational institutions, work with teachers and improve the quality of work with pupils.

Taking into account the experience of future monitoring studies, only digital data is used in the work.

In addition, pedagogical analysis and systematic planning of the right path will encourage pupils and teachers to succeed and improve school rankings. A systematic analysis will increase the level of attendance, minimize causeless absence of pupils.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫ БІЛІМ ЖӘНЕ ҒЫЛЫМ МИНИСТРЛІГІ

ТҮРКІСТАН ҚАЛАЛЫҚ БІЛІМ БАСҚАРМАСЫ

№15 МАҒЖАН ЖҰМАБАЕВ АТЫНДАҒЫ ЖАЛПЫ ОРТА МЕКТЕП

Бекітемін
Мектеп директоры
Т.М.Ирімжанова
_____2019 ж

ЕНДІРУ АКТІСІ

Біз, төменде қол қоюшылар, Қожа Ахмет Ясауи атындағы Халықаралық қазақ-түрік университеті, Жаратылыстану факультеті, Биология кафедрасы 6М011300-Биология мамандығының магистранты, Кәрімжан Дана Сәкенқызының «Білім сапасын диагностикалау дайындығын қалыптастыру» тақырыбында магистрлік диссертация жұмысының зерттеу нәтижелерін жоғарыда аталған мектептің 6-11 сыныптарында биология сабақтары бойынша оқу үрдісіне енгізілгенін растаймыз.

Ғылыми жетекшісі, х.ғ.к., доцент міндетін атқарушы Алия Мақұлбеккызы Дуйсебекованың жетекшілігімен орындалған бұл ғылыми-әдістемелік жұмыс нәтижелері биология сабақтарында: оқушылардың танымдық әлеуетін белсендіруде, сабақ үлгерім себептерін талдауда, сабақ сапасын диагностикалау мен мониторинг жұмыстарын жүргізуде практикалық тұрғыда құндылығы зор еңбек болып табылады. Магистранттың ғылыми-әдістемелік жұмысын оқу үрдісіне енгізу болашақ биологтардың білімі мен біліктілігін қалыптастыруда педагогикалық шеберлігін шыңдауда тиімділігін көрсетті.

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