TECHNICAL SCIENCE
RESEARCH IN UZBEKISTAN
ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Cognitive processes and their description in psychology

Sitora Akbarovna Ikromova
Assistant Professor of Asian International University

Abstract: This article presents ideas about mental processes, formation, types and description of cognitive processes in the science of psychology.

Key words: Reflection of the universe. Mental processes. S e zgi. Perception. Thinking. Types of thinking. A memory. Imagination. Creative imagination (fantasy) and its importance.

include all processes related to reflecting the external world in the mind, responding to it . Sechenov considered the idea that mental processes arise in the mind and are completed in the mind itself as a wrong idea . A psychic phenomenon also indicates an unrealized result

Mental processes perform a signal or control function, serve to adapt to the situation or give a response .

Psychic flow, as you know, is not itself, but the essence of the brain, as a function of its relevant parts , it is the manager of the response reaction that shows where the information about the world goes , where it is stored and processed .

Mental processes, in turn, are studied in parts called cognitive processes, emotional processes, volitional states of a person and individual characteristics of a person

Psychic phenomena are generalizations of this effect that the activity is currently affecting (sensation , perception) or in the past, that is, in the form of a response to a stimulus that occurred in life experience (memory) . , they help predict the results (thought, imagination) that will lead to the final result , strengthen or weaken the activity (emotion, will) as a result of the same effects, generally activate and other they are permanent managers who brake it due to influences , identify differences in people's behavior (temperament , character , etc.).

By the processes that play a role in reflecting the external world, we understand sensation , perception , thinking, imagination. However, other mental processes are also affected .

In mental processes, in addition to the I signaling system, the II signaling system, which is typical for humans, is also important.

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

occurrence and continuation of the desired mental process depends on such a mental phenomenon that it participates in all processes and affects its effectiveness. This is attention. Attention is the focus of consciousness on one point , it characterizes the activity of a person and his selective attitude to things and events in the objective existence . If there is no attention , there will be no activity aimed at a specific goal. There are three types of attention: involuntary, voluntary, and the last type of attention. Attention has the following characteristics: attention span , duration, distribution, distraction, displacement, content, and attention is equally necessary for all professions. In order to gain knowledge, acquire a profession, produce high-quality products, and gain the respect of the country, it is necessary to concentrate the mind on one point . **Feelings** . _ _ Through our senses , we get information about the wealth of the world around us, about sounds and colors, smells and temperature, quantity and many other things . We say that certain qualities of things or events that are acting on our sense organs and certain **qualities** of events **are** reflected in our mind **.** We feel different colors, tastes, heavy - light , hot-cold, sounds . Sensory organs receive information, sort it, collect it and send it to the brain . The sense organs are the only way for the external world to enter the human mind . Sense organs allow a person to find a purpose in the surrounding world .

The following conditions must be met for the formation of sensations : First
, there must be something or an event that affects one of our sense organs. **Second,** the sensor must be in good condition . This apparatus consists of the following: 1. Sensing organ (r e ts e ptor). 2. Conductive path (aff e r e nt n e rv). 3. The center in the cerebral cortex 4. The path that transmits response impulses from the brain (eff e r e nt n e rv).

The parts that make up a single sensory apparatus were called by IP Pavlov **analyzer .**

Sensation is essentially a subjective image of the objective world . However , for the formation of sensations, it is not enough for the organism to be affected by a material stimulus , but the organism itself needs to do some work. Emotions are formed as a result of the transformation of the specific power of the stimulus affecting the receptor into the power of nerve processes . Many and multifaceted studies have been conducted to study the participation of processes that have a strong influence on the formation of emotions .

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Sensory organs not only perform the functions of flexibility and execution, but also are strongly connected with the organs of movement, which participate in the processes of information acquisition

Analyzer. Sensation is formed in the form of reactions of the nervous system affected by one or another stimulus and has the characteristic of reflection, like any mental phenomena . The nerve process formed as a result of the effect of the stimulus on the analyzer, which is similar to itself, is the physiological basis of sensation .

The analyzer consists of three parts: 1) peripheral part (r e ts e ptor), which is a special transformer that converts external power into a nerve process. 2) afferent and efferent nerves that connect the peripheral part of the analyzer with the central analyzer . 3) Subcortical and shell (ending with the brain itself) sections where the processing of nerve signals coming from peripheral sections of the analyzer takes place . Certain cells **of the analyzer** p e rif e ric sections correspond to some parts of the cells in the cerebral cortex. In particular, the image formed at different points of the retina reflects it at different points in the cerebral cortex ; we can observe the same process in hearing: echoes in the eardrum and brain.

analyzers need to work as a whole to create a feeling . The effect of the stimulus on the receptor leads to the occurrence of excitation .

The analyzer is the source and the most important part of the whole path of nerve processes or reflex arc . The reflex arc is composed of the r e ts e ptor , aff e r e nt nerve paths and eff e r e nt nerves that carry the effect to the brain . The interaction of the elements of the reflector arc provides the basis for the complex organism's proper targeting in the surrounding world , the activity in accordance with the living conditions of the organism **Classification of sounds** . Sensations are usually divided into three groups depending on the nature of reflection and **the** location of receptors : 1. Extrinsic **senses** that reflect the properties of objects and events from the external environment and whose receptors are located **on** the surface of the body ; 2. **Int e rots e ptiv** s e z ings located in the internal organs and tissues of the body and reflecting the condition of the internal organs ; 3. Proprioceptive nerves **whose** receptors **are** located in **muscles** and tendons ; they carry information about the movement and state of our body . The type **of** proprioceptive sense that perceives movement **is** also called **kinesthetic** , **and its** receptors are kinesthetic or kinesthetic receptors . _ _ _ _ _ _ _ _ _ _ _ Also called e b.

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

External sensors can be divided into two groups : **contact and remote** sensors . Sensations based on feeling through the skin are called tactile senses , and these can also be of several types according to their function, for example, sensing temperature , smooth or rough. feeling rough, hard or soft , etc.

General laws of waves . Waves consist of reflection forms of exactly the same stimuli . In particular, electro - magnetic radiation is the trigger of the visual sensation . The wavelength of this radiation is in the range of 380 to 770 millimicrons and is converted into a nerve process in the vision analyzer . Hearing sensations are the result of the reflection of sound waves whose frequency (frequency) is from 16 to 20 thousand hertz . Even if the force of impact is low or high, no sensation will appear. Tactile sensations are formed as a result of the effect of a mechanical stimulus on the surface of the skin .

Emotions have characteristics such as quality, intensity, duration, occurrence in places .

Quality is the main characteristic of this feeling , which distinguishes it from other types of feeling and changes within the same type of feeling . In particular, the sense of hearing differs by its low-highness, softness, intensity, the sense of sight differs by richness, the color of colors, and so on. **The speed of the sensation is a** feature that expresses its quantity , and the power of the influencing stimulus is determined by the functional state of the receptor .

the wave is its temporal characteristic. It is not formed as soon as the stimulus affects the sensory organ , but it is formed after some time. The lat e nt (hidden) period of this period is called d e b. The latency period is different for different types of sensations : for example, it is 130 milliseconds for tactile sensations , and 370 milliseconds for pain sensations . The sensation of taste is formed 50 milliseconds after applying a chemical stimulus on the tongue .

Emotions cannot be formed at the same time as the stimulus starts to act , and it cannot disappear suddenly when the effect stops. This kind of weakness of the feeling is manifested in the phenomenon called d e b .

twitching sensation is rather weak and does not disappear immediately as soon as the stimulus that provoked it ceases to act .

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Finally, sensations have the characteristic of the stimulus occurring in certain places . Spatial analysis carried out by remote sensors provides information about the occurrence of the stimulus in a certain place . Tactile sensations come into contact with the part of the body that is affected by the stimulus.

Sensitivity and its measurement . _ **The** sensitivity of sensory organs is determined using the weakest stimulus capable of generating sensation under certain conditions . The minimum power of the stimulus that creates an unknown sensation is called the lower absolute limit of sensitivity .

The stimuli with the lowest power and the lowest pitch do not create a sensation and do not transmit signals about them to the cerebral cortex. The lower limit of sensitivity indicates the level of absolute sensitivity . There is an inverse relationship between the absolute (absolute) sensitivity and the lower grain size : the smaller the lower grain size, the higher the sensitivity of a particular analyzer . ; E is the sensitivity, R is the effect of the stimulus . Our analyzers have different sensitivities . A human 's single olfactory cell does not contain more than 8 moles of odorants . It takes at least 25,000 times more energy to create a sense of taste than it takes to create a sense of smell .

sensitivity of vision and hearing analyzers is very high. As the experiments of SI Vavilov (1891-1951) showed , the human eyes can perceive light even if only 2-8 quanta of light falls on the retina . This means that we have the ability to see a burning candle at a distance of 27 km in total darkness. At the moment , in order for us to feel that something has touched our body, it requires 100 or even 10 million times more energy than it takes to create the sensations of sight and hearing .

The absolute high sensitivity of the sense is said to affect the stimulus with the greatest force . In this case, a sensation is created that is exactly similar to the stimulus that is affecting it . (For example, a loud sound, strong light causes pain) .

The minimal difference between 2 stimuli that creates an unknowable difference between the sensations is called the separation threshold . Discrimination sensitivity or differentiation sensitivity is inversely related to the size of the differentiation gap : the larger the differentiation gap, the lower the differentiation sensitivity . ladi (When the load is 100 g, the difference is 3.4 g, when it is 1000 g, it is 33.3 g). **Adaptation.** The sensitivity of the analyzers, which is determined by the absolute value of the sensitivity limit, is not stable and changes under the influence of a number of physiological and psychological conditions. Among these

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

conditions, the phenomenon of adaptation plays a special role. **Adaptation** means the change of the sensitivity of the sensory organs under the influence of the stimulus . 3 types of adaptation phenomenon can be shown separately :

1. A type that resembles the complete loss of sensation during long-term exposure to the stimulus . For example, a light load placed on the skin will not be felt immediately . It is also a common phenomenon that the sense of smell disappears completely soon after an unpleasant smell spreads to the environment (from dark to light and vice versa) .

2. Adaptation also refers to one more phenomenon, which is expressed as a weakening of the sensation under the influence of a strong stimulus , which is closer to the phenomena described above . For example, the intensity of the sensation produced by a cold stimulus decreases when the hand is immersed in cold water. When we go out of a half-dark room into a brightly lit place, our eyes are closed and we can't notice the difference in anything around us . Adaptation is also a decrease in the sensitivity of the analyzer .

3. Finally, the increase in sensitivity under the influence of a weak stimulus is called adaptation . This type of adaptation , characteristic of certain types of emotions, can be described as positive adaptation . For example, under the influence of being in the dark for a long time, the sensitivity of the eye increases. A similar form of listening skill is silence adaptation. For example, those who work in the noise section do not like to talk to each other easily .

Interaction of emotions . The intensity of sensations depends not only on the strength of the stimulus and the level of adaptation of the receptor, but also on the stimuli affecting other sensory organs at a certain time . The change of the sensitivity of the analyzer under the influence of the excitation of other sensory organs is called the interaction of the senses . As a result of this, its sensitivity changes . In particular, the sensitivity of the hearing analyzer changes under the influence of the hearing monitor. SV Kravkov (1893–1951) showed that this change depends on the height of auditory stimuli . Or the sensitivity of vision increases under the influence of odor triggers. **S e nsibilization.** An increase in sensitivity as a result of the interaction of analyzers and training is called sensitization . As a result of the propagation (irradiation) of the excitation process, the sensitivity of the other analyzer increases . When a strong stimulus acts, a process of the opposite accumulation of excitation

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

occurs . According to the law of mutual induction, this leads to the braking of other analyzers in the central sections and the weakening of their sensitivity .

sensitivity of the analyzers can also change under the influence of stimuli belonging to the second sensitivity . In particular, it is observed that in response to the words "sour like a lemon" heard by the testers, the electrical sensitivity of the falls changed.

Sensitization of this or that r e t s e ptor by using specially selected additional stimuli , i.e. its s e sensitivity can be increased.

Sensitization can also be achieved through practice. For example, we know how the ability to hear low and high tones develops in children who play music. **Sin e st e ziya.** The interaction of feelings is manifested in another phenomenon called synesthesia . Sin e st e ziya is the formation of a characteristic tone of another analyzer under the influence of the stimulation of one analyzer . Syn e st e zia is observed in different types of s e z es. When visual images appear in the subject under the influence of sound stimuli, visual-auditory syndrome is often encountered. NA Rimsky-Korsakov, AN Scriabin and others "had the ability to hear color."

In recent times, the creation of color-musical (tsv e tomuzika) words that turn the sound image into a color image and the intensive research of color music are based on the phenomenon of syne st e ziya . Synergistic phenomena are another proof of the integrity of the emotional reflection of the objective world , that they are constantly interconnected with the analyzer systems of the human body .

Sensitivity and exercise . _ _ Sensory organs can be sensitized not only by the use of additional stimuli, but also by exercise . It is possible to distinguish 2 areas that lead to an increase in the sensitivity of sensory organs: 1) sensitization arising spontaneously from the need to compensate for sensory defects (blindness, old age) ; 2) sensitization resulting from the specific requirements of the profession due to the activity of the subject (turner's sensitivity , tester-d e taster 's sensitivity , etc.).

The loss of sight and hearing is compensated to a certain extent by the development of other types of sensitivity . (Development of sense of touch in blind people , reading with fingers, ability to separate money, tendency to sculpt; Deaf people can understand meaning from breathing in the air; Olga Skorokhodova (blind and deaf) puts her hand on her interlocutor's throat "Hear" the sentence by bringing it close , etc.).

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Perception . Definition of perception and its characteristics. The whole reflection of things and events in the mind of a person is called perception . The difference between perception and sense is that things are reflected together with all their properties in general. The important features of perception are its primordiality , integrity , structure, permanence (constancy) and understanding. The primacy of perception is expressed in the so-called phenomenon of objectification , that is , in the belonging of the information received from the outside world to that thing.

Pr e dm e tliy as a sign of perception plays a special role in behavior management. We judge things not according to their appearance , but according to how we use them in practice, or according to their main characteristics. Premeditation also plays a role in the further formation of perceptive processes themselves , that is , perceptual processes .

Another feature of perception is its integrity. In contrast to sensations, which reflect certain characteristics of the object that affects the sense organs, perception is a holistic image of the object . The overall image consists in summarizing the knowledge obtained in the form of different sensations about some features and signs of the object .

The integrity of perception is connected with its structure. Perception is not to some extent a response to our momentary sensations , nor is it a simple summation of them. From these sensations we perceive a generalized structure that is practically abstracted and formed over time. If a person is listening to a song , it seems as if the melody that he heard earlier is playing in his ears even after the new one is played .

are the specific properties of reflected objects , and on the other hand, they are embodied in the concrete activity of a person, that is, the result of the reflective activity of analyzers .

The permanence and constancy of perception is the uniform reflection of the size, shape, color and other characteristics of the object in our perception , despite the change in the conditions of perception of the object. For example, despite the change in the level of illumination, we perceive snow as white and coal as black . Even if the page of a book looks red under a red light, we perceive it as white , and even if people and things on the ground seem small from an airplane, we perceive them as normal size . No matter how the book looks , we perceive it as a square , and even if the spoon in the glass looks broken, we perceive it as a whole.

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Perceiving the shape, size, and color of things in the same way is extremely important from a practical point of view. Constancy of perception allows to objectively know the surrounding things as they really are .

The active influence of the perceptual system is the real source of perceptual constancy. The fact that something has several appearances is called its invariance , i.e. image invariance, diversity .

and constancy of perception depends on a person's past experience, and this feature is called perception .

So , perception depends not only on things, but also on the perceiving subject . Perception always reflects the characteristics of the perceiver's personality, his attitude to perceived objects, his needs, interests, aspirations, desires and feelings in one way or another (some forms are called "triangle", "circle", "mug " b perception).

Thus, the integrity and constancy of perception is also due to the fact that it is a unique self-regulating phenomenon that has a different communication mechanism and adapts to the characteristics of the perceived object and its life conditions. explained. **Awareness of perception** . Although they are formed as a result of the effect of the stimulus on the receptors , perceptive images always have a certain meaning. A person's perception is related to his thinking, understanding the essence of a thing , knowing its many properties . To understand something means to give it a name , that is, to include the perceived thing in a certain group and class of things, and to summarize it by means of words . From this point of view, sometimes the form, sometimes the background is alternately perceived, the so-called "double content" paintings are noteworthy (how many cubes ?, vases or people looking at each other? and so on).

Thus, perception depends on the subject 's previous experience . The richer a person's experience , the richer his knowledge, the more complete his perception, the more he can see in an object. The content of perception is determined by the task set before a person and the reasons for his activity . Both the subject 's attitude (guidance) and emotions affect the content of perception.

Perception, like sensation, is a reflective process . Conditioned reflexes , temporary connections in the cerebral cortex form the physiological basis of perception . The emergence of the strongest, dominant excitation areas in the brain cortex is the physiological basis of the direction of perception related to the

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

characteristics or state of the individual . The physiological basis of perception consists of two types of nerve connections - connections formed within one analyzer and connections between analyzers. (Perception with one r e ts e ptor and one n e cha r e ts e ptor). The classification of perception is based on the existing differences in the analyzers involved in perception, as in sensations . According to which analyzer is superior in perception , perception is distinguished by sight-hearing, touch, kinesthetic , smell and taste . The perception process usually takes place by means of several analyzers . Movement signals are involved in all types of perception to one degree or another.

to the classification (classification) of the forms of existence of matter-space, time and motion perception, separate types such as perception of space , perception of time and perception of motion are distinguished.

As a system of perception-pr e ts e ptive actions, its mastery requires special training and experience. An important form of voluntary perception is observation , which is the ability to see, know, and systematically perceive things or the surrounding phenomena . The success of observation largely depends on the accuracy of the task, the experience and knowledge of the observer. **Space perception** to **do** Perception of space is one of the inevitable conditions of a person's perception of the surrounding environment , and plays a major role in his interaction with this environment. Perception of space includes the perception of the shape, size and mutual location of objects, their level, distance and directions .

The motion analyzer plays a special role in space exploration. Among the special tools of space perception, in the activity of analyzers, nerve connections between both hemispheres should be included : binocular vision , binaural hearing, bimanual skin saturation, skin sense of smell, and the like.

of the eyes to clearly see things at different distances occurs with the help of 2 mechanisms - accommodation and convergence **Accommodation** means changing the ability of the eyeball to refract its reflection by changing its curvature . Accommodation is usually related to convergence , that is, the orientation of the visual axis to the object being recorded. Convergence angle is used as an indicator of motor distance, i.e. as a specific distance meter (dalnom e r). As a result of accommodation and convergence , the image of **two stimuli -objects on the** retina of the eye is a conditional reflection of the size of the perceived object, if the sizes of the muscles in the eye are matched . ε is an x-ray signal. (Perception of distance

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

and depth, movement of a crawling child under a glass bridge, how many stairs, how many cubes ? and other examples). **Visual illusions** : 1) bow arrow illusion; 2) appearance of the road surfaces; 3) the illusion of a different appearance of vertical lines (cylinder cap); 4) e lpig'ich illusion; 5) the illusion of swelling; 6) illusion of circles with a common center vb

Several circles drawn on a surface are perceived as twisted (spiral) lines . (Figure 24 on page 311 of the book General Psychology) .

Illusion is also observed in animals, some animals protect themselves by changing their color. Mimicry is an effective way to hide oneself. It is changing the color and shape of animals. (Animals change color depending on the seasons and place of residence).

common way people use illusion for a specific purpose is masking. The perception of weight can also be an illusion . Emotions and imagination may have influenced it.

Perception of time and motion . The perception of time means reflecting the objective permanence, speed and consistency of real events . Perception of time allows a person to take aim from the environment .

In humans, time estimation takes place in the parts of the cerebral cortex . The assumption that time estimation takes place in a certain place of the cerebral cortex , that there is a special center for summarizing time, is unfounded. Perception of time is the result of the rhythmic exchange of excitation and inhibition of the brain, slowing down of the excitation and inhibition processes in the central nervous system and cerebral hemispheres .

, especially auditory and kinesthetic senses , are involved in the perception of time . Space and time intervals are very important in the perception of time. (The position and time of the sun, various sounds: the crowing of a rooster, the call to prayer, the sound of a horn at the same time , the passing of a train that runs according to a certain schedule, or the gathering of some birds in the evening , singing, etc., reflect the time-related characteristics of the stimulus affected by auditory stimuli : its duration, rhythmic characteristics, etc.)

Perception of the constancy of time depends to a large extent on internal feelings and emotions. The time spent on interesting and deep-rooted activities is

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

very short, while the time spent on interesting and meaningless activities can be perceived as long and difficult.

Perception of movement is a reflection of changes in the position of objects in space . The perception of movement is vitally important.

For animals, moving objects act as a signal about the appearance of danger or feeding opportunities and encourage them to respond accordingly . (For example, a frog eats only moving insects , some fish avoid certain movements - waves, snorts, etc.). Vision and hearing, kinesthetic analyzers play a key role in the perception of movement . Speed , acceleration , direction of motion are parameters of the object in motion .

A person receives information about the movement of an object from one side to another in space in 2 different ways, that is, the perception of the phenomenon of movement itself as a tool, and the object standing in another place for some time . can be obtained on the basis of making a conclusion about the movement of kt.

of a moving object , if it is not possible to perceive with the eye a certain unit of time and situation , then we perceive the movement in the past unit of time, but it is the perception of the result of this movement. (Even if we cannot perceive the movement of the clock shafts by observing the device, after some time we perceive that it has moved in a unit of time.)

of objects by sight in 2 ways: by recorded gaze and observational movement of the eyes. Watching without taking your eyes off, watching by turning your eyes and body. For example, even if the car we are sitting in is not moving, we can perceive that our car is moving by looking at the car next to us, or vice versa, we can perceive that we are standing still, that the pillars and trees on the side of the railway are moving . **Emotional perception** - stroboscopic saturation also applies to the perception of movement. Stroboscopic movement is an example of illusionary movement . Kin e motograf is based on such a feeling. Visual cues do not appear immediately after exposure to a stimulus and disappear some time after exposure to a stimulus . Although 24 frames per second are exchanged in the cinema , we see not a series of scenes passing by, but a somewhat stable effect - an image. Several light bulbs give the impression of light in motion . This phenomenon is called "Ff e nom e n", that is, an abnormal phenomenon that is visible only in the perception of movement .

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Motion can also be perceived using auditory analyzers. It is possible to perceive the direction of movement of a train by looking at whether the train is approaching or moving away, when the voice of a person is getting lower or higher. In the perception of movement , auxiliary signs that give rise to the imagination of movement , for example, relevant positions of the body - raising the legs , spreading the hips, the body being in a position slightly bent to one side, etc., play a big role.

In the process of education, students acquire the "technique" of perception : they learn to carefully look at things , listen, distinguish the main and important features of things, perception becomes a goal-oriented, controlled, conscious process.

As the student gets older, his perception becomes more meaningful . The scope of the student's perception increases , the student learns to perceive things regularly , consistently, voluntarily and comprehensively.

perceive things they like diligently and persistently. Adolescents do not like to perceive something by itself many times - this point is also one of the characteristics of the perception of teenagers. But children of preschool and junior school age like to hear or see their favorite things over and over again . A teenager likes to independently discover new aspects of things and events. Teenagers are always looking for new, strange aspects of things and events that fascinate the mind and imagination. This is the reason why children of this age read stories about heroic deeds , adventures, and science-fiction literature with great attention

perceive with great interest things that can be used in practice . For this reason, they are very fond of the demonstration of experiments . The perception of high school students is more goal-oriented and they can manage their perception by themselves.

of leading the activities of the students by the teacher . That is why proper organization of perception and observation in class and excursion is of great importance. In order to activate observations in the educational process, it is important to warn the student about the need to talk about what he observed and perceived. If the student knows in advance that he will have to give an account of what he observed and perceived , he will be more active in the process of observation and perception.

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

In the lesson, the students acquire their knowledge first of all by perceiving the teacher's oral explanations. Perception of the material explained with the help of words largely depends on the characteristics of the teacher's speech. Another important condition for the successful perception of the material is the use of visual aids . No matter how well the material can be described using words , this tool cannot replace observations. **Tafaku r. If the properties of** objects and events that can be known only through the sense organs are reflected through sensation and perception, this does not mean that the scope of knowledge is limited . Things and events have properties, interactions, and laws of development that cannot be known by means . For example, it is not possible to determine the distance between earth and the sun, star and moon by means of e ; The passage of electric current through a wire, the structure of an atom, the speed of light , the development of long historical processes , and the like cannot be built without a tool. Nevertheless, a person measures, determines, knows. Thus, instrumental reflection is one of the features of the thinking process. Another feature of thinking is that reality is reflected in a generalized form.

Thinking is a generalized reflection of reality, legal connections through words and experience. By determining the laws of development of things and events, man has the opportunity to control the development of nature and human society. Human thinking is closely related to language. Thinking, like all mental processes , is the result of brain activity. When a person is thinking, complex processes take place in the brain , connections between centers occur in the cerebral cortex . Formation of various temporary neural connections (associations) is a complex synthetic activity of the cerebral cortex. Thoughts become perfected and clarified as a result of the temporary differentiation of nerve connections , that is, the strengthening of some nerve connections and the branching of others . This activity of the brain is called analytical activity . **Types of thinking and important qualities of mind** . There are concrete - practical, concrete - image, and abstract types of thinking .

Concrete -practical thinking is thinking that relies on perceiving them as a tool in the process of working with things . For example, a child thinks after looking inside a toy, and after the master paints the receiver . Concrete figurative thinking relies on imagination. This type of thinking is typical for children of junior school age. L e kin also occurs in adults. For example, when preparing for a lesson, a teacher imagines his students and thinks about how they will receive the material , what form and when to draw, what visual aids to use, when and how to use them. .

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

Abstract thinking is thinking based on concepts that reflect the essence of things and express them in words. This type of thinking is primarily related to solving various theoretical problems . But it is also widely used in everyday life . In adolescence and senior school age, abstract thinking is formed quickly (krugozor - level of knowledge). For the creative work of a modern specialist, productive, independent and critical use of these types of thinking is required.

Also , creative work requires flexibility of thought, i.e. ability to solve tasks depending on specific conditions , to find a new way to solve the task.

These types and characteristics of thinking are different in different people and are called qualities of mind

Thinking operations . _ **Thinking activity** is carried out with the help of thinking operations such as analysis , synthesis , comparison, generalization, abstraction and concretization . **Analysis** is a mental division of the problem into parts, imagining the condition of the problem. **Sintez** is the opposite, combining parts. **Comparison** - identifying similarities and differences. For example, it is possible to compare a technique depending on the power of the engine, the type of fuel, the work it performs, and determine its advantage. **Generalization** - combining thoughts based on common and important features . **Abstraction** - thinking in terms of the main task, ignoring the most important features of the situation. **Concretization is the** ability to find the qualities that apply only to this thing and event, to clarify the final part, appearance **,** etc. of the above types of operation . In addition to these, human thinking relies on logical operations such as understanding, interpretation, and distinguishing the important .

The thinking process continues in the form of understanding , judgment, and conclusion. **The concept is general, singular, type, partial . Judgment is general, partial , individual** .

Making a new judgment from several judgments as a result of reasoning is called conclusion . It is **inductive** in two ways and **It has the form of deductive** inference.

Imagination or fantasy is of great importance in human cognitive processes. Imagination is a reflection of existence in new colors, in the form of one's desire, desire, and imagination, being inextricably linked with the processes of feeling, perception, and thinking . What one sees , hears, or in short experiences, is in the form of visualizing events - regenerating, creating new images based on one's desire

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

- creative imagination. Creative imagination is also called fantasy. (Poet, writer, inventor - qualities necessary for a designer).

several ways to create a new image : 1) **agglutination** - gluing , creating a new image from several images . For example: mermaid, centaur , flying horse , etc. 2) **hyperbolization -** exaggeration or reduction (Gulliver) , 3) **recording** - drawing attention to the most important signs of things and events . (A joke of friendship, a joke). In addition to these , it is also in the form of **typification** , dream (flying carpet-plane), recording, typification .

A children's game, a designer's imagination is a creative imagination, but the content and operations are different from each other. Human cognitive processes are strengthened in the process of memory. Memory is the process of recalling, storing and retrieving. Memory is of great importance in a person's acquisition of knowledge and skills. Also , people can be distinguished by the quality and type of memory. For example, it is possible to distinguish image memory, word-logical memory, and emotional memory related to emotions. People can be divided into four types depending on the speed of remembering and forgetting . Those who remember quickly and forget quickly , remember quickly and forget quickly , remember quickly and forget quickly and remember quickly .

References

1. Ikromova, S. (2023). INTERPRETATION OF THE PSYCHOLOGICAL SAFETY FACTOR IN RELATION TO DESTRUCTIVE INFORMATION IN ADOLESCENTS. Modern Science and Research, 2(9), 390-394.
2. Ikromova, S. (2023). CONCEPT OF IDEOLOGY AND FORMATION OF IDEOLOGICAL IMMUNITY IN YOUTH STUDENTS. Modern Science and Research, 2(6), 1223-1226.
3. Ikromova, S. (2023). FORMATION OF IDEOLOGICAL IMMUNITY TO DESTRUCTIVE INFORMATION IN TEENAGERS. Modern Science and Research, 2(5), 1009-1014.
4. Ikromova, S. A. (2022). MILLIY VA DINIY QADRIYATLARNING INSON TARBIYASIDAGI O'RNI. Экономика и социум, (12-2 (103)), 675-678.
5. Ikromova, S. A. (2023). SHAXS OG 'ISHGAN XULQINING KO 'RINISHLARI VA DESTRUKTIV AXBOROTLARNING KO 'RINISHLARI. Educational Research in Universal Sciences, 2(10), 528-532.
6. Akbarovna, I. S. (2023). YOSHLARDA DESTRUKTIV G'OYALARGA QARSHI IMMUNITET HOSIL QILISH OMILLARI.

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

7. Akbarovna, I. S. (2023). TALABA YOSHLARDA MAFKURA TUSHUNCHASI VA MAFKURAVIY IMMUNITETNI SHAKLLANTIRISH.

8. Akbarovna, I. S. (2023). O'SMIRLARDA DESTRUKTIV AXBOROTLARGA NISBATAN MAFKURAVIY IMMUNITET SHAKLLANTIRISH.

9. Akbarovna, I. S. (2023). DESTRUKTIV AXBOROTLARGA NISBATAN MAFKURAVIY IMMUNITET SHAKLLANTIRISH IJTIMOIY MUAMMO SIFATIDA. Barqaror Taraqqiyot va Rivojlanish Tamoyillari, 1(6), 26-29.

10. Akbarovna, I. S. (2023). MILLIY HARAKATLI O'YINLARNING BOLALAR TARBIYASIDAGI IJTIMOIY-PSIXOLOGIK XUSUSIYATLARI.

11. Sitora Akbarovna Ikromova. (2023). Formation of Ideological Immunity to Destructive Information. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies (2993-2599)*, *1*(9), 50–54.

12. Akbarovna, I. S. (2023). Study of the Formation of Ideological Immunity By Foreign and Russian Researchers. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 235-239.

13. Akbarovna, I. S. (2023). Adolescence during Destructive Behavior Appearances the Problem Learning Condition. Intersections of Faith and Culture: American Journal of Religious and Cultural Studies (2993-2599), 1(9), 105-109.

14. Ikromova Sitora Akbarovna. (2023). NEUROPHYSIOLOGY BASIS OF HORMONES. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 68–77.

15. Ikromova Sitora Akbarovna. (2023). RESEARCH METHODS OF YOUTH PSYCHOLOGY. International Multidisciplinary Journal for Research & Development, 10(12).

16. Ikromova Sitora Akbarovna. (2023). Formation of Ideological Immunity to Destructive Information in Adolescents. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 119–122.

17. Tursunbek Sadriddinovich Jalolov. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). Oriental Journal of Academic and Multidisciplinary Research , 1(3), 123-126.

18. Tursunbek Sadriddinovich Jalolov. (2023). ADVANTAGES OF DJANGO FEMWORKER. International Multidisciplinary Journal for Research & Development, 10(12).

19. Jalolov, T. S. (2023). PSIXOLOGIYA YO 'NALISHIDA TAHSIL OLAYOTGAN TALABALARGA SPSS YORDAMIDA MATEMATIK

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5
USULLARNI O‘RGATISHNING METODIK USULLARI. Educational Research in Universal Sciences, 2(10), 323-326.

20. Jalolov, T. S. (2023). PYTHON INSTRUMENTLARI BILAN KATTA MA’LUMOTLARNI QAYTA ISHLASH. Educational Research in Universal Sciences, 2(10), 320-322.

21. Jalolov, T. S., & Usmonov, A. U. (2021). “AQLLI ISSIQXONA” BOSHQARISH TIZIMINI MODELLASHTIRISH VA TADQIQ QILISH. Экономика и социум, (9 (88)), 74-77.

22. Sadriddinovich, J. T. (2023). Capabilities of SPSS Software in High Volume Data Processing Testing. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 82-86.

23. Sadriddinovich, J. T. (2023, November). IDENTIFYING THE POSITIVE EFFECTS OF PSYCHOLOGICAL AND SOCIAL WORK FACTORS BETWEEN INDIVIDUALS AND DEPARTMENTS THROUGH SPSS SOFTWARE. In INTERNATIONAL SCIENTIFIC RESEARCH CONFERENCE (Vol. 2, No. 18, pp. 150-153).

24. Jalolov, T. S. (2023). TEACHING THE BASICS OF PYTHON PROGRAMMING. International Multidisciplinary Journal for Research & Development, 10(11).

25. Jalolov, T. S. (2023). Solving Complex Problems in Python. American Journal of Language, Literacy and Learning in STEM Education (2993-2769), 1(9), 481-484.

26. Jalolov, T. S. (2023). PEDAGOGICAL-PSYCHOLOGICAL FOUNDATIONS OF DATA PROCESSING USING THE SPSS PROGRAM. INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION, 2(23), 220-223.

27. Tursunbek Sadriddinovich Jalolov. (2023). SPSS YOKI IJTIMOIY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA’LUMOTLARNI QAYTA ISHLASH. Journal of Universal Science Research, 1(12), 207–215.

28. Кутбединов, А. (1985). Разработка и применение ядерно-физических методов анализа подземных вод для выявления предвестников землетрясений.

29. Bahodirovna, S. N. (2023). FORMS OF ORGANIZATION OF MATHEMATICS TEACHING IN ELEMENTARY GRADES. Ethiopian International Journal of Multidisciplinary Research, 10(11), 5-8

ISSN (E): 2992-9148
ResearchBib Impact Factor: 9.576 / 2023
VOLUME-1, ISSUE-5

30. Сайфуллаева, Н. Б. (2021). ВАЖНЫЕ АСПЕКТЫ ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ ТЕХНОЛОГИЙ В СИСТЕМЕ КЛАССНЫХ УРОКОВ. Вестник науки и образования, (15-3 (118)), 40-42.

31. Сайфуллаева, Н. Б. (2022). ИСПОЛЬЗОВАНИЕ ДИДАКТИЧЕСКОГО ПРОГРАММНОГО ОБЕСПЕЧЕНИЯ В ОБУЧЕНИИ МАТЕМАТИКЕ. In НОВЫЕ ПЕДАГОГИЧЕСКИЕ ИССЛЕДОВАНИЯ (pp. 10-12).

32. Сайфуллаева, Н. Б. (2023). РОЛЬ ЦИФРОВЫХ ТЕХНОЛОГИЙ В ОБУЧЕНИИ КОМПЬЮТЕРНЫМ НАУКАМ. Universum: технические науки, (4-1 (109)), 41-43.

33. Сайфуллаева, Н. Б. (2023). ВАЖНОСТЬ МАТЕМАТИКИ И ЕСТЕСТВЕННЫХ НАУК ДЛЯ УЧАЩИХСЯ НАЧАЛЬНОЙ ШКОЛЫ: Сайфуллаева Нозима Баходировна, преподаватель кафедры “Теория начального образования”, Бухарский государственный университет. Город Бухара. Республика Узбекистан. Образование и инновационные исследования международный научно-методический журнал, (1), 305-307.

34. Сайфуллаева, Н. Б. (2023). Методы Организации Уроков Математики В Начальных Классах С Использованием Цифровых Технологий. Miasto Przyszłości, 35, 388-390.

35. Сайфуллаева, Н. Б. (2023). РОЛЬ МАТЕМАТИКИ В СОВРЕМЕННОМ МИРЕ. PEDAGOGS jurnali, 1(1), 292-292.

36. Сайфуллаева, Н. Б. (2019). Роль дидактических игр в умственном развитии учащихся в математике начального класса. In INTERNATIONAL SCIENTIFIC REVIEW OF THE PROBLEMS OF PHILISOPHY, PSYCHOLOGY AND PEDAGOGY (pp. 102-106).

37. Сайфуллаева, Н. Б., & Марданова, Ф. Я. (2021). НАУЧНО-МЕТОДИЧЕСКИЕ ОСНОВЫ ОРГАНИЗАЦИИ САМОСТОЯТЕЛЬНОЙ РАБОТЫ ПО ВЫСШЕЙ МАТЕМАТИКЕ. Проблемы науки, 84.

38. Сайфуллаева, Н. Б. (2020). Важные особенности дидактических игр в процессе обучения математике в начальных школах. In ИННОВАЦИОННЫЕ МЕТОДЫ ОБУЧЕНИЯ И ВОСПИТАНИЯ (pp. 60-62).

39. Сайфуллаева, Н. Б., & Мурадова, Я. М. (2020). Пути эффективного использования методов обучения математике в начальных классах. In EUROPEAN RESEARCH (pp. 121-123).

40. Сайфуллаева, Н. Б. (2022). Методы определения потребностей обучающихся в процессе использования облачных технологий в образовании. Universum: технические науки, (2-1 (95)), 57-59.

41. Сайфуллаева, Н. Б., & Саидова, Г. Э. (2019). Повышение эффективности занятий, используя интерактивные методы в начальном образовании. Научный журнал, (6 (40)), 101-102.