

Peculiarities of Using Neuro-Linguistic Programming Techniques in Teaching

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ABSTRACT

This research investigates the problems of using neuro-linguistic programming (NLP) techniques in teaching. The paper presents the theoretical framework of the NLP technology, covers the history of development and peculiarities of NLP, analyzes academic, methodological, and scientific literature, and describes the main concepts and terms that reveal the essence and purpose of NLP in teaching. Methods of determining the dominating channel of perception and information processing were described. Methodological recommendations for studying this subject were given; methodological recommendations for studying disciplines using the NLP technology, with a view to improving the effectiveness of learning, were given. The analysis of the scientific and methodological literature on the studied problem showed that the NLP technology is underdeveloped in teaching. This research investigated an NLP technology that enables detecting the sensory preferences of students, establishing mutual understanding with students, and achieving better learning results. Such terms as “visual”, “auditory”, and “kinesthetic” were used to describe the ways of learning, typical for students. Their typical features are described. Knowing these features improves the performance of students in both learning and life in general.

KEYWORDS

Neuro-linguistic programming; educational process; speech predicates; representative system; eye scanning patterns

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Introduction

Nowadays, a new educational system is being established. This is accompanied by significant changes in the pedagogical theory and educational practice. The educational paradigm is changed; a new content of education is offered (Uglev & Ustinov, 2014). Traditional ways of presenting information are replaced by new types of visualization, computer means of teaching, different interaction between the teacher and the student, etc. The instrumental nature of the vocational education methodology is discussed and debated within the framework of

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technologies and innovation in education (Kahraman, Sagiroglu & Colak, 2010). New concepts are created to comprehend the changes in opinions regarding the theory, methodology, and technology of teaching (McCusker et al., 2013).

Therefore, the teaching process in pedagogical high schools requires an organization that would make the student a subject of educational activity. This approach pays special attention to the individuality of the student. In the context of studying the personality traits of students, consideration of the individual types of perception of educational information is significant (Ogura et al., 2012).

However, the principle of individualization often remains on paper only, while either lacking in practice altogether or being purely formal. The teacher develops and offers students individual assignments based on his or her own style of pedagogical activity. This can cause frustration and anxiety in students and make it impossible for them to choose ways of learning freely. The quality of education in high school is discussed within the framework of technologies and innovation used in the educational process. New concepts are created to comprehend the changes in opinions regarding the theory, methodology, and technology of teaching. One such relevant problem is NLP. The solution of this problem lies in the modern development of higher education.

NLP methods and techniques can be used in various fields of human activity: business, education, management, sales, art, advertisement, politics, upbringing, organizational consulting, i.e. the fields that most intensively use the resources of human thinking and behavior (Cassidy-Rice, 2014).

When neuro-linguistic programming entered the sphere of education, this created the possibility of using techniques and technologies aimed at forming, developing, and achieving success when working with students. Neuro-linguistic programming can be used when working with each student individually or with a group, with regard to the specificity of education. By tracing the established patterns of successful behavior in a group, the teacher can create a model of success for him- or herself and the students and use it to improve the effectiveness of the educational process (Hendron, 2015).

Unfortunately, the problem of using the neuro-linguistic programming technology in class remains understudied nowadays, which determined the subject of this research. The difficulty in the organization of such teaching is the irregular holding of special courses and lack of skilled specialists in this field.

Literature review

Long before the appearance of the NLP term, researchers studied the phenomena of contagiousness, suggestion, and ideomotor response that govern the human behavior, which is implied in the modern scope of problems of NLP. Certain ideas of NLP date back to Ancient Egypt and Babylon and their socio-political life that was regulated by the esoteric knowledge of priests of the dominating cult (Cook, 2014).

Buddhism uses various methods of influencing the personality at the self-programming and auto-training level as part of the “Eightfold Path”, while one of the goals of Confucianism is to control and educate subjects, to achieve obedience and order, while not abandoning political suggestive methods (Neudecker et al., 2014).

Some of the origins of NLP can be traced to ancient philosophy: sophism influenced masses by using the ideas of figures of speech and affecting the body language of the recipient; Plato's teachings of the influence of the recall of previous influence on human behavior; Aristotle's perfect logic that persuaded people; stoics' appeal to ethics and moral laws.

All these schools used, albeit on the periphery of the research field, methods of influence that are now considered basic for NLP (Magaard, 2015).

Neuro-linguistic programming emerged in the USA in 1972 thanks to the activity of R. Bandler, who specialized in mathematics and computers, and John Grinder, who specialized in linguistics. While observing the work of psychotherapists Virginia Satir, Milton Erickson, and Fritz Perls, they created a model of the English language that was effectively used in psychotherapy. They called it a meta-model (Bandler & Grinder, 1976). The discoveries they made while modeling the experience of various people led to the creation of neuro-linguistic programming.

NLP has spread across the entire world. For instance, more than 100 NLP centers operate in the USA; Germany has 70 big institutes that research NLP in various fields (Wao, 2015). In Austria and Switzerland, NLP has been recognized as an official area of psychotherapy. In France, many NLP standards have been adopted at the state level (Kong & Farrell, 2014).

Neuro-linguistic programming studies the internal processes of human thinking and behavior, and the technology of communication (Zaharia, Reiner & Schütz, 2015). NLP includes a set of principles and special tools that are designed to analyze and detect key patterns of values, strategies of behavior, and their interaction in a way that allows using them for practical and tested by experience applications (Skorohod, 2015). NLP enables taking a glimpse into the behavioral context and seeing the powers that govern human behavior, i.e. the system of thinking that allows people to act effectively (Peng et al., 2015).

It would be unfair to say that NLP is only an area of psychotherapy. The possibilities of NLP are much greater – development of new approaches to teacher, development of latent human abilities, determination of the most interesting and effective models of human behavior and thinking, improvement of personal effectiveness in professional activity, and creation of successful and self-regulating companies that use the potential of each employee to the greatest extent (Kudliskis, 2014).

Despite the great number of studies on NLP, this concept remains underdeveloped in modern pedagogy and methodology. The use of NLP technologies is generally regarded at the level of general problems of education (Mion Pop & Tacea, 2014).

NLP principles allows studying in detail any human activity, which provides for quick and simple implementation of in-depth and sustainable changes in the activity (Ducasse & Fond, 2014). In other words, by studying, for instance, the strategy used by the teacher to solve a mathematical problem, it is possible to teach this effective strategy to students who are unable to solve such problems.

The influence of modal perception of junior adolescents on the effectiveness of cognition was studied. The analysis of the comprehensive study of the dominant types of perception created a typology of junior adolescents by their

dominant type of perception (prevalence of visual, auditory or motor modality) and concluded that the modality of perception mediates the educability of students of this age group (Bondar, 1999).

In terms of the use of NLP technologies in pedagogy in general and teaching in particular, it is worth noting the age-related dynamic in the modality of perception depending on the age differentiation of educational levels. In junior age groups, kinesthesia dominates, followed by hearing and vision (Ananyev, 1996).

This opinion coincides with that of foreign researchers of NLP. M. Grinder characterized students of various age depending on the dominating modality. Grinder argued that children to go first grade mostly as kinesthetics (Grinder & Bandler, 1981). Between the third and fourth grade (which corresponds to the transition to middle school), the way of teaching changes to auditory, which imposes requirements to the development of auditory modality. As the students draw closer to senior school, the style of teaching changes to visual, while the content becomes more abstract, symbolic, and graphic (Bandler & Grinder, 2012).

Five hundred students of all age groups were studied to obtain comparative data on the development of representative systems in schoolchildren at different age. This study showed that junior schoolchildren were mostly kinesthetics (40%), while the least developed system at this age is the visual system – 10%; in middle school, schoolchildren switch from the kinesthetic representative system to the auditory and partly visual; the visual representative system is the dominant one in 65% of senior schoolchildren (Ogura et al., 2012).

The dependency of the effectiveness of first-year students learning on the dominating modality of perception offers the following data: 48.8% are visuals, 37.3% are auditories, and 13.9% are kinesthetics. This confirms the thesis regarding the dominance of visual modality at this age.

The peculiarities of the representative system of middle-school students is related to the peculiarities of their temperament. Studies found that phlegmatic introverts and sanguine extroverts (developed auditory representative system) at this age comprise the majority of people in classes with a high level of development – from 13% to 48% and from 30% to 80%, respectively (McCusker et al., 2013).

Another research confirms that different age groups of students are dominated by different modalities. However, the authors chose age groups for studying modality and its effect on teaching proceeding from the goals of their research. They were more interested in the distribution of dominating modalities in middle, senior, and high school students (Woolway & Harwood, 2015).

When neuro-linguistic programming entered the sphere of education, this created the possibility of using techniques and technologies aimed at forming, developing, and achieving success when working with students (Ziedenisberg, Iris & Asher, 2016). Neuro-linguistic programming can be used when working with each student individually or with a group, with regard to the specificity of education. By tracing the established patterns of successful behavior in a group, the teacher can create a model of success for him- or herself and the students

and use it to improve the effectiveness of the educational process (Vrănceanu, Florea & Florea, 2013).

From the perspective of NLP researchers, underperforming students appear when the teaching is aimed at a content that does not develop the “lagging” modality of perception (modality of perception implies the dominant type of perception, through which the brain selects received information to add it to the sphere of consciousness) (Grinder & Bandler, 1981). In this case, effective teaching of mathematics requires each teacher to use multi-sensor techniques, so that each student has the possibility of choosing the most familiar learning style (Bandler & Grinder, 2012).

By distinguishing the most effective and objective elements from obtained data, NLP uses them to create new models that can be transferred to other people. For instance, if any person has a very effective strategy for memorizing information, a model based on this strategy can enable another person to learn to do this as effectively. The suitability of created models is determined by their usefulness, rather than theoretical reasoning. The special value of NLP models lies in their versatility, i.e. they usually do not depend on the context and content of their application (Skorohod, 2015). Thus, NLP is a distinctly formulated and powerful model of human experience and communication. This model can describe any human activity, systematizing the experience of people who perfected their abilities, and using this experience in everyday life (Mann et al., 2012).

Modern theories of neuro-linguistic programming imply at least to opposing directions, when its nature is interpreted as either manipulation and conscientious influence on the behavior of another person or self-organization and self-programming of a person (Reme, Archer & Chalder, 2013). An important factor that predisposes to using neuro-linguistic programming in education is the fact that NLP is essentially a set of techniques that help to teach an individual certain meta-models (meta model – a model of behavior of people who achieved success in a certain field of activity and have certain skills). The assumption is that each person can achieve similar success by studying and using the previously used patterns. This gave impetus to the creation of NLP. Nowadays, there are models of many geniuses who showed their talent in this or that field (for instance, Bill Gates) (Florea et al., 2013).

NLP is a relatively young branch of humanities, many directions whereof have only been outlined. The interpretations of the essence of this branch are too diverse to consider it a classic or independent social science. The matter at hand is a modern search and research direction. For instance, many specialists who outlined the first theoretical and practical approaches to investigating the nature of NLP interpret it as programming of and suggestion to a person of that which he or she does not want (Mann et al., 2012). This approach is the foundation of “black PR technologies”, where the goal is to make the person do something the manipulators want. Other specialists defined neuro-linguistic programming as a science of perfection of behavior, the purpose whereof is to help people act more effectively (Vaida & Pop, 2014).

Aim of the Study

The aim of this study was to determine the effectiveness of using the technology of neuro-linguistic programming when teaching students mathematical disciplines.

Research questions

The overarching research question of this study was as follows: How effective is linguistic programming in modern education? How can one optimize the methods of information memorization for students of different age groups?

Methods

The method of determination of the representative system type was used to achieve aim of the research (Mehoudar et al., 2014). An assessment of speech predicates was used to confirm the type a person belonged to (Noh & Isaacowitz, 2013). The method of eye scanning patterns was used to compare obtained results (Rayner, 1978).

By determining the representative system, it is possible to solve a number of possible problems:

1. Detection and adjustment of the representative systems of another person to the most frequently used words and predicates, with a view to building rapport and ensuring mutual understanding.

2. Adjustment through “reflection” and matching poses, gestures, facial expression, head posture, tempo and pitch of voice, with a view to maintaining rapport with the interlocutor.

3. Transfer of expressions from one representative system to another, with a view to improving understanding between persons or groups of people if problems arise during their communication.

4. Monitoring and utilization of sensory access keys and micro-motions to improve mutual understanding and adjustment to typical thinking strategies of another person, with a view to systematizing and understanding that person’s experience and messages received from other people.

5. Assistance in developing new possibilities and abilities of perception in other people using sensory works and systematically using access keys.

6. Assistance in improving sensory competence to understand and detect the influence of people on other people quickly and accurately.

7. Detection and sorting of various (incongruent) types of communication in other people, with a view to minimizing misunderstanding and misconception.

8. Establishment of anchors and triggers to positive experiences and resources, observed in context, and repeated launch or collapse of these anchors in situations when the person or group of people has no access to them. This behavior or response can also serve as a resource in other contexts.

9. Detection and breakdown of unsuccessful loops of calibration (anchors), with a view to achieving flexibility and options of response and communication.

10. Elimination of nonspecific verbal cards and creation of higher quality verbal descriptions and, more importantly, behavioral demonstrations and examples, with a view to creating a model of experience and results of this person, which would be easy to use and observe through sensors.

11. Reframing of the context and content of problematic behavior and responses by detecting the positive intention and secondary benefits it is based on. The goal is to change perception towards a positive attitude to behavior, so that behavior can be treated as a resource. This change in perception helps people:

- to separate the “self” from the “behavior” through effort and acknowledgement of this part of one’s personality, with a view to uniting the “self” with positive intention;

- to preserve the positive intention of problematic behavior even if the behavior that was used to achieve this intention changed;

- to preserve and enhance the secondary benefits of problematic behavior or responses, which help to preserve the ecology of the system and to support the “self” by changed undesirable behavior.

12. Creation and strengthening of behavioral flexibility of system participants using roleplay (training) and other forms of behavioral modeling, with a view to helping system participants to achieve the desired behavior and responses in other members of the group with better coordination and more methodically.

13. Detection and specification of high-quality descriptions and demonstrations of group and individual results or desired states, which will be well-formed, practical, and ecological for the specific system to which they belong (Helm, 2000; Pavlova, 2000).

Data, Analysis, and Results

The following steps were developed to determine the effectiveness of NLP technologies when teaching students mathematical disciplines (by the example of analytical geometry):

- a comparative analysis of the use of NLP methods in teaching was conducted;

- the diagnostic research of the types of information perception in students was described;

- methodological recommendations for planning the study of disciplines with regard to the types of perception of educational information were made.

A representative system is the dominating means of processing and storing information. VAK is the abbreviation that denotes sensory representative systems – visual, auditory, and kinesthetic.

Representative system types

Each representative system (modality) has patterns (or sub-modalities) – recurring and sustainable elements of behavior, smaller fragments within each modality (Andreas & Andreas, 2005).

Visual type. Visuals are characterized by shallow breath, clean and strong voice, line of sight not lower than that of the interlocutor, active use of facial expression, need for eye contact, and active gestures above the chest level. Such people like to dress smartly and have a neat hairstyle; they love order. Vocabulary in use: look, picture, focus, imaginations, prospect, shine, reflect,

clarify, examine, eye, predict, illusion, illustrate, notice, sight, view, opinion, show, appear, see, survey, sight, spectacle, observe, unclear, dark.

Auditory type. Sounds are important to this type of people; they pay attention to the timbre, pitch, and rhythm of speech. Their own speech is monotonous, quiet, with pauses. They can imitate the voices of others. Their gestures are anemic, near the chest; they eyes are often half-shut; their facial expression is inexpressive. Vocabulary in use: talk, accentuate, rhyme, loud, tone, resonate, sound, monotonous, dull, ring, stress, intelligible. hear, state, remark, listen, to ring, to fall silent, taciturn, vocal, to sound, voice, speak, silence, accordant, harmonious.

Kinesthetic type. Perceive the world through their body. Such people are characterized by abdominal, slow, and deep breathing, low voice timbre, quiet and slow speech. They constantly try to move; during a conversation, they try to sit closer to the other person and touch him or her. Their line of sight is below that of their interlocutor; they gestures are below the chest level. Vocabulary in use: grab, present, contact, rough, warm, shaggy, take, hand in, squeeze, strain, tangible, palpable, hold, touch.

Discrete type. Ringing and monotonous voice, long sentences with complex structures. They look above their interlocutor or in his or her forehead; use nonspecific verbs; avoid touching. They have a mask-like face; they are easily offended, conscientious, and responsible. For them, the world is the meaning.

The comparative information of physiological markers of the nonverbal manifestation of representative systems is shown in Table 1.

Table 1. Physiological parameters (nonverbal manifestation of representative systems)

	<i>Visual representative system</i>	<i>Auditory representative system</i>	<i>Kinesthetic representative system</i>
Breathing	fast, high (at collarbone level)	light, smooth, in diaphragm	deep, abdominal
Skin color	pale	intermediate between visual and kinesthetic	pink
Voice tone	high pitch, strained voice	wide range of intonation	low chest voice
Voice tempo and rhythm	Quick, hasty, distinct vowels	smooth, rhythmic, well-articulated	slow, with pauses
Muscle strain	neck, shoulders, and abdomen	smooth, hardly noticeable	relaxed muscles and motions
Posture and gestures	sharp motions, gestures above the medium line	smooth motions, gestures at the medium line	relaxed motions, gestures below the medium line

Speech predicates

Speech predicates of sensory representative systems (these include *verbs, adjectives, participles, and adverbs*) are words that define the belonging of information expressed by a person to a specific sensory representative system. Non-sensory speech predicates (polymodal) are words that do not reflect clearly the belonging of information to a specific sensory representative system (they frequently, but not always, reflect belonging of information to an auditory-digital system) (Arka, 2005).

By paying attention to the speech predicates a person uses, it is possible to acquire information about how he or she represents his or her experience (Table 2).

Table 2. Speech predicates of different systems

<i>Visual</i>	<i>Auditory</i>	<i>Kinesthetic</i>
see clearly	sonorous	I feel
see the light	to hear	sour
within distinct boundaries	to tell	grab
to observe	deaf	to incite
to burst	mute	hot
luminous	squeaky	stupefying
shining	to whistle	to throw oneself
to blind	murmur	to caress
cloudy	melodious	moist
to glitter	loud	angry
graphical	resonant	to delve

Therefore, in order to establish rapport (including its verbal component) quickly, it is important to detect the “sensory language” of the partner and speak various “sensory language” easily and effortlessly. If you were able to adjust to the representative system of the partner, you can easily lead him or her and transfer your information to him or her using the best channel of perception.

Here are some examples of how to “translate” expressions that are usual for use from one sensory language into another (Table 3).

Table 3. Using expressions in different sensory representative systems

<i>Visual</i>	<i>Auditory</i>	<i>Kinesthetic</i>	<i>Digital</i>
see the point	hear the point	grasp the meaning	understand the meaning
lose sight of	to not hear	miss	ignore
striking personality	dominant name	firm character	famous person
we will see	we will discuss this	we will consider this	we will think about it
dull	monotonous	slack	uninteresting
look around	listen closely	focus attention	be attentive
show	tell	let feel	explain
look	listen	feel	comprehend
looks good	sounds good	works smoothly	all is right

Information about the representative systems can be acquired through various means. For instance, the eyes of a person in motion can indicate which representative system he or she is using. It is also possible to reflect the predicate and syntax of another person, posture, breathing, intonation and tempo of speech, facial expression, etc. One of the ways to identify the main channel of perception is the analysis of vocabulary in use.

Eye scanning patterns

Figure 1 shows keys of eye access as if you were looking at the face of a person in front of you. For left-handed people, the figure will be mirrored.

Look up and to the left: visual memory. These are images of the past stored in visual memory. These include dreams and constructed images that were “seen” before.

Look up and to the right: construction of visual images. The person is constructing the images that he or she has seen.

Look straight and to the left: auditory memory. Memorized sounds (sounds of speech, melody, often phone numbers, memorized poems without focusing on meaning – rhythmic memorization).

Look straight and to the right: auditory construction. Usually constructed speech or sounds with a new timbre, rhythm, pitch, etc.

Look down and to the left: inner dialog. The inner dialog is a commentary of experience. Inner dialog can be a means of rational logical thinking.

Look down and to the right: feelings. This person can access emotions and kinesthetic experiences. The typical posture of depressed people: bowed head, “downhearted” appearance, look down and to the right (or down and to the left).

Unfocused eyes: the person is within at least two systems. For instance, he is hearing and seeing, seeing and feeling or, perhaps, all this combined. This state is often called light trance – altered consciousness.

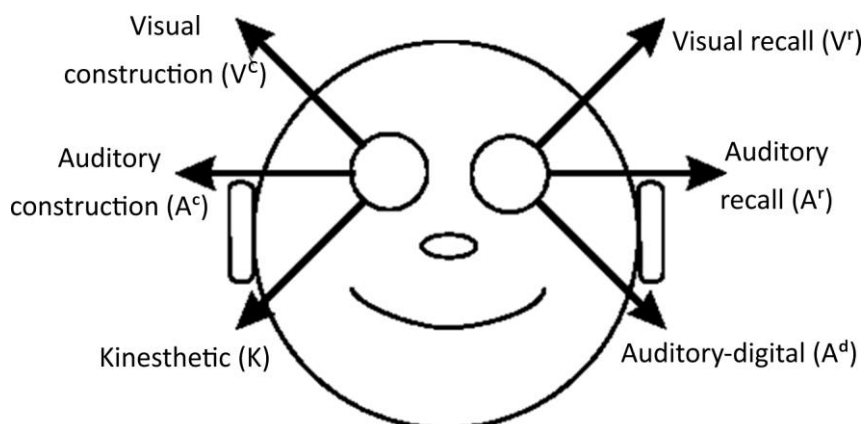


Figure 1. Eye scanning model (for right-handed)

Human sensory organs are sensitive to external stimuli; visual organs are the most sensitive ones in most people; the capacity of connection channels between the receptors and the central nervous system is different: optical channel – 1.6×10^6 bit/s; acoustic – 0.32×10^6 bit/s; tactile – 0.13×10^6 bit/s. This means that visual organs “send” almost five times more information to the brain than acoustic organs and almost 13 times more than tactile organs. Information that enters the brain from visual organs (along the optical channel) does not require significant recoding; it is stored in human memory quickly, easily, and firmly (Pligin, 1997).

The perception and comprehension of information with simultaneous activation of all perception systems (visual, auditory, and kinesthetic), i.e. with an extension of the perception system, is of a high level. Individual perception systems are developed differently in different people: one or two systems

dominate. This is caused by the historical experience of life, geographic peculiarities, anatomic and physiological development of the organism, and peculiarities of education and upbringing.

Abilities of all representative systems are developed in each person. However, it is necessary to focus on the “main” one, i.e. the one that is most frequently “used” by the student. The preferred representative system is the one through which the person most frequently perceives information about the world.

The information society requires pedagogical specialists not only to have extensive knowledge, but also to be able to use it in an unusual situation and use a creative approach to solving problems. Therefore, it is necessary to help students to learn how to be invariant and adapted to new conditions.

It is expedient to consider in detail each representative system of students and describe the types of knowledge that can be offered during the study of disciplines (Yusupova et al., 2002).

Visual. Quiet, thoughtful, finds it difficult to establish contact with other people, has only a few friends, learns easily (successfully), loves construction kits, television, computer, is indifferent to animals, although is capable of admiring them, does not like to go for walks, very choosy in clothes and food, spectacles have a strong impression, but does not talk much about such impressions, withdraws into him- or herself when under stress, uses words that are mostly related to vision.

Visual students stay in the classroom during breaks or go to the corridor to observe other students or look at the information on walls.

The visual’s perception of the learning material and geometric objects becomes effective if he or she also sees charts, tables, figures, flowcharts, illustrations, photographs, educational movies or computer presentations in addition to the teacher’s explanation.

Visual students have well-developed thinking; they work well with charts and models. Computer technologies provide for effective explanation of the new material to such students. The availability of didactic handouts is important; the esthetic of its design is important for visuals.

Types of assignments that can be offered to visuals:

Assignments in the form of notes, bright, colorful, and nice-looking cards; find something in the textbook or notebook independently; review, draw a conclusion; work with educational and testing software; write down the answers to questions using a projector or computer.

Auditory. Talks non-stop, easily establishes contact with children and adults, capable of listening when read or narrated to, finds it difficult to memorize the spelling of letters, disobedient, objects to adults’ remarks, indifferent to food and clothes, does not like spectacles, starts shouting under stress, unable to concentrate, prone to guessing, uses words associated with auditory perception.

Auditory students use the break to talk and make some noise.

Such students perceive the learning material effectively by listening to it; it is preferable to explain new material in an expressive voice, with intonation, and stressing important moments. In class, accompaniment and dialog are important

to auditory students; it is not worth forbidding them to comment on their actions.

Types of assignments that can be offered to auditory students:

Read the assignment out loud to the teacher; compose something; explain the algorithm of the solution to this problem; call the student to the blackboard during the mathematical dictation; write down the main thoughts and substantiate them; analysis, comparison, and correlation of facts and phenomena.

Kinesthetic. Very active, the main thing is to take care of business, very independent and talented, need to touch everything, is good at perceiving smells, has well-developed taste, loves animals, uses words that describe feelings and motions.

Kinesthetics need a change to get a little exercise. The main way such students perceive the learning material is through motion; in order to understand something, they have to do it or repeat the hand motion. In case of reference information, a kinesthetic has to write it down him- or herself.

Types of assignments that can be offered to kinesthetics:

Assignments aimed at moving chips, drawing, modeling, counting objects, researching, finding several solutions, assignments with clear instructions of their completion; assignment – to give his or her own definition of the studied concept, his or her own formulation of the law or its consequence; to hypothesize. These students do best at tests.

Discussion and Conclusion

This research investigated the theoretical and historical aspects of the use of neuro-linguistic programming in teaching and the possibilities of detecting the type of the student's representative system, with a view to taking an individual approach and implementing multi-sensor teaching.

Teaching disciplines with regard to the dominating channel of information perception helps students to overcome their fear of failure and fear of the assignment, since it enables doing the work in an individual way and translating the assignment into the student's own "language" within the framework of the relationships that are adequate to his or her type of perception.

The assumption is that an educational process that is organized in such a way will enable not only learning disciplines, teaching the student to think, developing intuition, imagination, and spatial representations, based on the student's subjective experience, but also creating an atmosphere of cooperation, co-creation, and co-thinking.

The practical value of the results is that they elaborate the NLP technology and its use in the educational process. Scientifically substantiated recommendations regarding the technology's practical implementation were developed. The obtained results can significantly expand the methodological framework of the intellectual development of students.

The NLP technology solves many problems directly or indirectly. It offers an organization of collaboration of students and teachers that changes the value and conceptual orientations and helps to move to a new level of activity perception, which provides conditions for the development of creative thinking.

Neuro-linguistic programming can help the teacher to develop a plan of actions in class aimed at creating an atmosphere of interest, improvement of learning motivation, and, consequently, improvement of work effectiveness.

Implications and Recommendations

1. Activation and optimization of the educational process requires introducing into the learning activity of students such elements as positive anchoring, rapport, and exchange of strategies; at that, it is necessary to pay special attention to multi-sensor communication with students and multi-channel presentation of information.

2. Improvement of the psychological training of prospective specialists requires introducing into the student-training program a special course of “Use of Neuro-Linguistic Programming Methods and Techniques for Intellectual Development”.

Disclosure statement

No potential conflict of interest was reported by the authors.

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