



## KAPITEL 7 / CHAPTER 7<sup>7</sup> LEARNING AND TEACHING IN THE CONTEXT OF OUR BRAIN RESERVES

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### Introduction

The problem of correlation between learning and development has been and remains the core problem of pedagogy. At different historical stages, its solutions have changed due to changes in methodological attitudes, new interpretations of the essence of personal development and the process of learning itself, and rethinking of the role of the latter in this development.

In modern neo-technocratic society under the influence of globalization and information explosion there are active transformations of scientific pictures of the world, which are reflected in the studies of both domestic and foreign scientists. Increasingly prevalent is the image in which there will be a balance between material and spiritual values, technical and humanitarian knowledge, feminine and masculine tendencies.

To be endowed with the art of mastering high culture, the desire to learn foreign languages, the desire to constantly renew and enrich one's knowledge is no longer just a challenge of the times, it is the need for multidisciplinary activity, expanding the range of knowledge, forecasting the methods, trends and laws of development of branches of science, it is a cultural dialogue within the global civil society. In the process of teaching any academic discipline every teacher tries to focus on the state of formation and formation of personality under the influence of training, education and assimilation of elements of culture, norms, values and social roles essential for a particular society. At the same time, we understand that development is not a mechanical imposition on the individual of a ready-made social form, it is the formation of an integral personality, where non-standard and independent thinking are the prerequisite and result, and through a system of knowledge, norms and values the personality functions as an active member of society. We live in a dimension where life attitudes are based on both real and imagined values. And here the important detail is to find a balance of application of knowledge, skills in accordance with the norms of society. We are talking about mastery, about the experience accumulated in the course of a teacher's teaching activity – the ability to recognize an

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active, conscious person capable of creative activity.

Jan Amos Comenius, having put forward the idea of universal education – "everyone needs education," created his own system [3, p. 19]. He taught that man is the most perfect, beautiful creature, a microcosm in which the harmony of body and soul coexist. In his speech "On the culture of natural gifts," he noted that education and upbringing should be the foundation of the state, since the future of the state and the people depends on them [3; 12, p. 115–119]. And the principles, methods, and forms of teaching of the "Great Didactics" became the basis of many modern pedagogical theories. "The musician," Comenius wrote, "does not strike the strings with his fist or stick, does not strike the instrument against the wall when the strings of the lyre or harp produce dissonance, but patiently tunes them, applying all his art, until he brings the strings to harmony. In the same way we must adapt ourselves to the properties of the mind, bringing minds to harmony and love of science, when we do not want to turn the lazy into stubborn and the flabby into utter fools" [5, p. 11].

Consequently, we can speak in extrapolation of the effective arsenal of "Cognosce te ipsum. Man was proclaimed a high value, as evidenced by the writings of Vittorino da Feltre in Italy, Luis Vives in Spain, François Rabelais and Mittel Montaigne in France, Erasmus of Rotterdam in Holland, etc. Their humanistic ideas were widely disseminated in most of Europe. And it was a "new milestone" of all-round development that was achieved by education and upbringing.

Often scholars say, in order to increase language competence, it is necessary to give the whole learning process a terminological orientation. An important condition for the successful study and assimilation of professional disciplines is the terminological literacy of students – future professionals. Terminology is not a secondary or collateral component of science, it is an obligatory and one of its most important components [22].

The integral system of formations of terminological fields and microfields of any branch – be it medicine, biology, law or economy etc., where separate words connected with each other thematically, conceptually and linguistically, enter into paradigmatic and syntagmatic relations, needs not just to be familiar, it needs to be studied; it is necessary to study professional language, because it is very different from the common language, which is a means of communication [21]. The so-called professional vocabulary is needed not just to "satisfy" grammatical and syntactic levels (special dictionaries and reference books are created for this purpose), it is indispensable in solving the problem of universality of the world picture – linguistic,



conceptual, naive, scientific.

## 7.1. Resources of our brains

At the 2016 World Economic Forum, there was a discussion about the changes needed in the educational process, about how to stay "afloat," how to remain functional in the face of global economic and social shifts. The result was the following statement: "The education system must be able to adapt to prepare people for the changing labor market. At the same time, recent IT advances offer new and potentially more affordable ways to access education [19].

Much has been said and written about the brain in recent years, which has had a significant impact on people involved in teaching and training [11]. This interest is due to the fact that the brain is the center of all the processes involved in learning. It is the organ of the body that centralizes all elements of learning activity.

Only two facts concerning the workings of the human brain can we speak of with absolute certainty: every brain is unique; the brain has specialization.

Specialization is an established fact, even though some specialists continue to argue about the degree of such specialization. Consensus has also been reached on the concept of dominant preferences. Each of us has a "preferred" eye, hand, foot, and ear, as well as one or more mental preferences. Although our bodies are symmetrical in terms of "organs" (2 eyes, 2 ears, 2 feet, 2 hands, 2 brain hemispheres), experts believe that we use this duality asymmetrically [17]. In other words, we use one organ of the pair more than the other.

By combining specialization and asymmetry of use (or predominance), we can understand the distribution of predominant elements, which allows us to explain the motives of human behavior. And especially the fact that each person has his own style of acquiring knowledge. The main application of education and training for professionals consists of revising the perceptions of the ways in which participants receive information [1].

*The mind is no longer one level; it is multilevel.* Each learning professional is a unique individual with his or her own style of teaching and experience. We know from personal experience that some subjects are easier for us than others; that we are attracted to certain teaching styles; that the process of remembering information is different, and so on. The reason for these phenomena, which each of us observes, is



our uniqueness in terms of our learning style, content, attitudes toward learning methods, environments, and/or teaching techniques.

The concept of "whole-brain learning and teaching" provides a foundation that bridges the gap between the uniqueness of each student and the format/ delivery of courses. This is why human resource professionals who have taken the "learning and teaching with the full brain" approach tend to use this technology, which has proven to work well in a variety of classroom types and for a wide range of academic disciplines. It works better because:

- The brain is specialized and each individual's brain is unique,
- The brain is always in a particular situation,
- Learning is a mental activity,
- Each person has a unique style of knowledge acquisition,
- The format of training courses can be tailored to individual differences,
- Learning styles can match the uniqueness of each participant,
- The uniqueness of the participants can be an integral part of the training course format,
- Participants can be divided into groups to enhance learning and knowledge acquisition,
- Programs that take into account participants' intellectual backgrounds are enjoyed by participants, trainers, and facilitators.

*Thinking Process.* The whole concept of "learning and teaching using the full capacity of the brain" is built on the distribution of specialized ways of thinking in the cerebral system. Physiologically, the brain consists of two hemispheres, known as the left and right hemispheres of the brain. These hemispheres are interconnected. They are connected at the cortical level by the corpus callosum, and at the limbic level by the hippocampal junction. These connections create important relationships between both cortical spaces and between the two limbic [15].

Two of these quadrants represent the cognitive and intellectual species, which are associated with the cortical hemispheres. The other two quadrants represent the sensory and emotional species, which are associated with the limbic system. 2 of the quadrants specialize in the thinking process in the left hemisphere. These are the logical, analytical, cognitive perception, and "facts and numbers" of the left cortical quadrant. These are the planning, organization, details, and "steps" of the left limbic quadrant.



The other two quadrants specialize in the thinking process of the right hemisphere. These are generalization, integration, intuition, and globality of the right cortical quadrant. Interpersonal relationships, emotions, kinesthetic sensations, and feelings of the right limbic quadrant.

We know more about the functions of the two cortical areas than of the two limbic areas. While it is recognized that cortical space is more related to cognitive and intellectual processes, limbic space is increasingly associated with habits and emotional aspects [7].

One of the primary functions of the limbic system is to transmit information from the brain in such a way that it finds its proper place for future use. This is why the limbic system plays such an important role in the memory process. Memory is vital to the acquisition of knowledge, and without memory, the acquisition of any knowledge becomes impossible. This is how the two limbic quadrants play an important role in this system of learning and teaching.

*Intellectual Preferences.* With the support of General Electric, N. Herrmann was able to develop and validate a tool that helps measure individuals' preferred types of thought work. The tool is called the "Brain Intellectual Preference Characterization (Intellectual Preferences). It is a questionnaire (developed as far back as 1978 to determine thinking dominants) that the participant fills out on his or her own to obtain his or her personal profile [11]. The profile is a metaphor for people's thinking preferences about the four quadrants of the model.

Experience shows that there is a tangible link between a person's brain preference profile, his or her occupation, and learning style. A number of characteristics across all quadrants form the basis of the "whole-brain learning and teaching" model. It is very important to take into account the uniqueness of each learning group when designing a course. Using the model, one can gain a better understanding of the specific preferences and characteristics of the group, and thus create and deliver the training that is appropriate in that particular case.

*All-Brain Learning.* The most successful way to train is to create an "all-brain" dynamic in the group that "encompasses all brain preferences. This can be achieved by creating training in the form of a constant dynamic circular motion between the traits of the 4 quadrants that promotes an equal distribution of all preferences. This constant circular motion means that you must make sure that participants with different interests can learn effectively.

«The understanding of self – the discovering of self – can be greatly facilitated



through whole brain approaches to learning. It's never too late for gifts and talents to emerge. Never too late!» – N. Herrmann wrote in "Creativity, Learning, and the Specialized Brain In the Context of Education for Gifted and Talented Children" for the Seventh World Conference on Not Just Children, but the Gifted and Talented (Salt Lake City, Utah, August 4, 1987) [11].

## **7.2. Use of Intellectual Potential and its Tools (on the material of training)**

In today's evolving society, the largest corporations are increasingly addressing the problem of maximizing human capital that exists in and around the company [8]. "The introduction of technologies based on a high level of intellectual resources and the trends of globalization are becoming the most important factors determining not only the economy but also the politics of the 21st century. In this regard, increasing the level of intellectual potential, human capital become a key condition for the independence of the country, the dominant of its successful development" [4]. In doing so, benchmarks are formed and models are built, thanks to which the successful promotion of both internal and external resources is guaranteed.

Our main focus will be on the training manual for the trainer – the instructions for the training. We will demonstrate the tools that will make it easier to conduct a seminar on "Client Satisfaction".

The purpose of this paper is to highlight the key points and their particularities in conducting a two-day training.

**Training Materials.** This is your basic visual aid to help you conduct the workshop. Trainer's Guide. Identifies ways to teach, gives tips, and summarizes the basic information on each slide; it may also contain additional information to help you answer questions from the training participants. Pedagogical tools: brings together the tools you will use during the training. The trainer's manual tells you when to use the various tools.

**Preparation Tips.** A week before the start of the training, contact the training organization department to make sure the logistics of the workshop are secured (U-format room and name plates for 12 people, flip chart, video projector; check if the documentation for participants is printed correctly and will be available in the training room on the first day; check the schedule that has been given to participants in order to adapt your own schedule accordingly.





Three days before the start of the training you should review the training, using the training manual for the trainer, in order to refresh the content and update it in case of changes. The day before the training, make sure you have all the necessary documents for the training: the training manual, the training materials (Power Point presentation), the pedagogical component (role-playing materials, exercises...), so that the training will go in the best possible way.

On the day of the training – come to the agreed place one hour before the start of the workshop in order to get acquainted with the environment (audience, small rooms for working in groups, break rooms...); prepare your materials and make sure everything works properly: fold documents for training participants (organize how you will hand them out); prepare a flip chart by writing on the first and second page the text ("Good afternoon and welcome to the workshop on "Customer Satisfaction". "Training Objectives" – if they are not listed in the Power Point presentation). Now you, as the trainer, are ready to welcome the participants and begin the training.

At the appointed time, invite the participants to the classroom, allow them to choose a seat, and ask them to write their first and last names on the signs, emphasizing that it is important for you to know their names to facilitate communication with each of them during the workshop.

Method of presentation. Participants sit in selected seats and write their names on plates. Introduction of the trainer (name, professional experience, marital status, hobbies).

It is necessary to establish a friendly atmosphere from the beginning: it can be a smile, a friendly attitude, etc. Some participants may not particularly want to attend a training session, but have come out of necessity, so it is important to melt the ice from the start. Don't forget that first impressions are often the right ones [20].

The trainer should: 1) demonstrate the objectives by reading them aloud without additional comments; 2) convince participants of the pragmatic nature of the program (show the difference between learning how to work and a psychological approach). It is very important that only the trainer speak during the introduction; there is no need to ask participants to speak. Don't be afraid to get closer to the participants by standing in the center of the «U».

Demonstrate the schedule, emphasizing that cell phones must be turned off at all times, except during breaks. Allow participants to introduce themselves.

Participants prepare a presentation of themselves in pairs for six minutes: if there is an odd number of people in the group, form one troika (A represents B, B



represents C, and C represents A). Next, each participant introduces his or her partner to the group for no longer than one minute. During this time, you need to tell them their name, city, professional experience, and hobbies. The participants usually introduce themselves in the same way as the trainer a few minutes earlier. Humor is acceptable while introducing participants – it helps to create a friendly atmosphere [6; 2; 10]. The main rules are not to allow notes to be taken and, in general, to create a positive mood among the participants [9; 16].

The trainer conducts an analysis, stressing that when doing such an exercise, it is worth concentrating on what the person is doing, not on who he or she is. Discuss the reasons for this phenomenon with the group (fear of offending the other person, risk of personal contact).

The fact that each participant represents the other creates a sense of rhythm and prevents anyone from talking about themselves for too long.

Keep an eye on the time; don't drag out the process with questions.

The fact that the trainer takes notes shows that he or she is interested in the group. It also helps to adapt the visual materials of the training to the individual characteristics of the participants.

A peculiarity of conducting trainings is the role of the so-called communication links:

1. "Thank you for the introductions. Now that we know each other better, it is important to establish ground rules that will allow us to achieve maximum results in the coming two days of training."

2. "We will remove three obstacles and adhere to three conditions. Present the three obstacles to be removed. Give the group a definition of each obstacle, an example of the risks associated with this type of behavior, and describe how you should conduct yourself during the workshop.

3. Don't start the dialogue with the group with open-ended questions, such as, "What do you think these obstacles are?" etc. The purpose of this block is not to listen to the participants' opinions, but to establish rules that the trainer can rely on during the training if such a situation arises (when the participant behaves directly as described in the obstacle or does not comply with the established conditions).

Thus, it is necessary to remember that the "Rules of the Game" consist of overcoming three obstacles – criticism, confirmation, justification. And learning to adhere to them is the purpose of conducting such trainings. Therefore, the way of presenting the material is very important [18].





## Conclusions

The paper analyzes the situation of the correlation between knowledge and skills, the need for their use in relation to the learning system. Language competence is presented through the prism of general didactic principles. Some peculiarities of providing and receiving knowledge necessary for different models of learning are disclosed. The most complex process of self-development lies in the ability to think creatively. This is a successful way in teaching and learning when the "all-brain" dynamic is used. We also focus on the specifics of conducting training on the topic of "Customer Satisfaction. We demonstrate the tools that will facilitate the conduct of such a seminar. The main focus is on the methodological manual for the trainer – the instructions for the training.

Thus, the development of creative thinking is a complex process of self-development on the way of teaching and learning, as a result of which we go to experiment with ourselves, with our capabilities, so that in the future "out-of-the-box thinking" using various techniques of mind control, neurosemantics and neurolinguistic programming can hold in their hands the over-globalized world.