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THE USE OF REPRESENTATIVE SYSTEMS AS A MEANS OF TEACHING STUDENTS

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Abstract

The progressive development of Russian society suggests the need for an innovative system of higher education. On the one hand, there are new professions and competencies that require a qualitatively new approach to teaching students from modern universities, and, on the other hand, classical lectures have long lost their relevance and effectiveness due to the general availability of information. The problem is that lectures refer to passive forms of conducting classes, and in order for modern education to be effective, it is necessary to maximize the percentage of active and interactive forms of conducting classes. Unfortunately, quite often there are situations in which it is difficult for the teacher to find an effective way to transfer knowledge, since each student has his/her own peculiarities in the processing of new information. Channels of perception of new information are called the representative system of a person, which allows you to capture and process information, and contributes to the effective perception of new knowledge. The use of various types of representative systems in the educational process increases the student's ability to perceive new information, enhances the motivation to learn, which contributes to the quality of higher education in general. The article analyzes the effectiveness of various teaching methods: passive, active and interactive. Information on the types of representative systems prevalent among Russian students is presented, and the influence of various types of representative systems on the process of effective information perception by university students is demonstrated.

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1. Introduction

In the process of higher education, the main task of university instructors is to structure their teaching in such a way that students learn the material with maximum ease and consolidate their knowledge as firmly as possible. In their work, modern teachers can use a huge number of methods and technologies for conducting classes. The main questions that arise in the teaching process are as follows: how to present information in the best possible way, how to build up the necessary competencies for a teacher, how to manage the audience and group dynamics (Smith, 2008). In a short time, every teacher will have a certain set of teaching methods and tools that he or she uses most often. These personal preferences may be explained by the fact that each teacher of a higher educational institution eventually develops his/her own classroom technology, which is based on their personal beliefs and practical experience. Nature has given each of us the potential to use all types of representative systems. We can see, hear, perceive information kinaesthetically, analyse and draw conclusions. It is necessary to pay attention to the leading channel of perception of new information, used by the individual more often than other channels.

Understanding which representative system is leading with the student enables the teacher to efficiently organize the process of education and remove the barriers that students may have in the learning process. These barriers can be associated with the discrepancy between the teacher's chosen teaching method and the leading channel for perceiving information among students.

For example, a teacher who is tuned to the auditory system will not be able to fully explain the material to a visually minded student. The student will not understand anything of what he or she is being "told", since he needs to see it at least once (Sausheva & Shashurin, 2004).

2. Problem Statement

Today, the problem of choosing an effective teaching method is relevant both in theoretical and in practical terms. The educational process, the effectiveness of teachers' and students' work, and, consequently, the result of training in a higher educational institution as a whole, depends on the right method. In order to make a pedagogically correct choice, it is necessary to understand the possibilities and disadvantages of the basic teaching methods.

There are three main categories of teaching methods: active, passive and interactive.

1. Passive teaching methods are a form of interaction between a teacher and a student, where the teacher is the main actor and leads the educational process, and students act as "objects of teaching" and passive listeners. The main types of passive forms of training include the following classes: traditional lectures, quizzes, and tests.

2. Active teaching methods are a form of interaction between students and a teacher, where students are no longer passive listeners; they are active participants who are on an equal footing with a teacher. This method involves a democratic style of conducting classes. The active teaching methods include creative tasks and questions directed both ways - from students to the teacher and from the teacher to students.

3. Interactive teaching methods suggest not only a teacher-student form of interaction, but also interaction in a student-student mode. The role of the teacher in interactive classes is reduced to the regulation of students' activities in order to achieve their goals (Makarova, 2014). Interactive learning is based on the direct interaction of students using their own experiences and those of their friends.

In order to assess the basic parameters of the effectiveness of educational forms, the following criteria are applied:

- Index of engagement;
- Assessment of participant satisfaction in the educational process;
- Evaluation of learning outcomes.

If we consider the above assessment criteria from the point of view of learning effectiveness, then interactive forms of conducting classes can be considered as the most effective of the presented methods (Vally, 1994).

In addition to introducing interactive teaching methods into the learning process, another task of a modern teacher is to get students master the learning material with maximum ease and consolidate their knowledge. There are situations when the teaching method chosen by the teacher may not be effective for the student. It happens because students do not perceive the same information in the same way. Therefore, the teacher is recommended to take into account the individual characteristics of the student and adapt to them (Pisarenko, 2007).

Unfortunately, the traditional forms of conducting classes at universities are becoming ineffective. The time has come for innovative approaches to teaching and learning, and this area, unfortunately, is practically not explored within the framework of higher educational institutions. Studying the leading representative systems of university students, as well as conducting sociological research in a focus group format, in order to identify the relationship between innovative forms of conducting classes and the quality of students' knowledge, will allow to formulate the main directions for developing effective teaching methods.

One of the main problems that worries modern teachers is the following: how to make university education effective and perception-friendly (Collom, 2005). Millions of units of information enter our brain through all available sensors: we can see, hear, touch, taste and smell, and guess about what we failed to find out. It is like four different languages of communication. Systems that are responsible for the perception and assimilation of information are called representative systems.

A representative system is a term for neuro-linguistic programming (NLP), developed by psychologists and practitioners, which is the defining way of perceiving and processing information and depends on the inter-hemispheric interaction of the human brain. One of the fundamental principles of NLP in pedagogy is that each student learns information in his/her own way.

After we have received the information, it is being processed and encoded by our brain, and then the information is presented in the form of relevant data. A representative system is the prevailing way to obtain information from the outside world through our senses. If you know which representative system is the main one for the student, you can make any communication as efficient and productive as possible.

There are currently four types of representative systems: audials, digitals, kinesthetics, and visuals (Novikova, 2009).

1. Visuals are the students who receive information through the organs of vision, it is important for them to see the new material. When teaching visuals, bright images and diagrams, large print, training cards, video viewing proved to be excellent. Visual students perceive the world through the eyes. In the process of obtaining new knowledge, for example, during a traditional lecture, the student quickly transforms the information obtained through an auditory channel into picture format.

2. Digitals are people who have well developed causal relationships, it is important for them to interpret and understand the material themselves. When teaching digital students, infographics, logical tasks and schemes work well. A discrete representative system is defined by the following lexical markers: evaluate, analyze, perceive, believe, consider, know, agree, be aware, think.

3. Kinesthetics are people of sensations, learning through action is important for them. The kinesthetic system is the slowest of all representative systems, since changing one sensation to another is time consuming, compared to how much time it takes to recall different sounds or look from one subject to another. When teaching kinesthetics we use suitable examples from life, practical exercises, teamwork. For a student with a developed kinetic system, characteristic words are: feel, touch, sense, pick up. Kinesthetics are easy to distinguish among others. They speak slowly and the speed of their thinking process is also rather slow. They use few gestures, being focused on tactile sensations.

4. Audials are people who receive information by ear. It is important for audials to speak information out. Audial students prefer watching videos, or listening to a lecture with a clear, good narrator's voice. Audials attach great importance to intonation and the pace of speech, with which words are pronounced. Audials are able to repeat word for word, even when it seems that they do not listen to the teacher. Unfortunately, audials are very easily distracted when writing an important paper, they find it more difficult than others to focus on the task if there are unnecessary sounds, for example, noise in the classroom. It is important for the audial to pronounce what is written or heard. When audial students answer at the exam, they usually repeat the words of the teacher or the text they have memorized. To describe their experience, such students will use the following words: hear, tell, etc.

The types of teaching methods, depending on the type of representative system, are presented in Figure 01.

Figure 01. Types of teaching methods depending on the type of representative system

In the student-centered teaching methodology, it is generally accepted that each personality type has its most successful strategies for learning new material.

The development of the idea of differential pedagogy in modern higher educational institutions requires the following:

- The use of various types of representative systems in student teaching.
- The impact on all channels of perception and information processing.

A university teacher must understand that there is a possibility of a discrepancy between a student's personality and a teacher's personality and be able to apply different teaching methods (Afanasyeva, 2017).

3. Research Questions

3.1. What teaching methods (active, passive, and interactive) are most effective for teaching students?

3.2. What interactive teaching methods are common at Russian universities?

3.3. What types of representative systems are prevalent among Russian students?

3.4. How can we improve the effective perception of information by students through the introduction of all types of representative systems in the learning process?

4. Purpose of the Study

The aim of this study was to identify the most effective teaching methods in higher professional education, as well as to study the influence of various types of representative systems on the process of information perception by Russian university students. It is assumed that the data obtained will allow university professors to adopt an integrated approach to learning and to achieve the fullest and most effective assimilation of educational material. In addition to achieving a high percentage of educational material assimilation, it is planned to increase student involvement and motivation due to the introduction of an integrated innovative approach to teaching.

5. Research Methods

5.1 Economic and statistical research methods;

5.2 Structural and logical research methods;

5.3 Diagnostic experiment;

5.4 Quantitative and qualitative marketing research: survey, focus group, group interview;

5.5 Analytical processing of various documents, regulations and decrees.

6. Findings

In the course of this study, we have analyzed the degree of application of interactive forms of education at Russian universities. To achieve this goal, a survey of 1200 students of Russian universities was conducted on the topic "Are the presented forms of interactive teaching methods used at your university". The data are presented in Table 01.

Table 01. Summary data on the use of interactive forms of education at Russian universities

Interactive form of conducting classes	The indicator of the frequency of use at St. Petersburg universities
Business game	90%
Discussion	90%
Simulation games	80%
Lecture - press conference	80%
Group discussion	70%
Interview	70%
Webinar	60%
Round table	50%
Video conferencing	40%
Case method	40%
Virtual consultation	30%
Debate	30%
Interactive (problem) lecture	30%
Information and problem lecture	30%
Collective solutions of creative tasks	30%
Brainstorming method	25%
Lecture - provocation	20%
Video lecture	10%
Training method in pairs	10%
Method "Decision Tree"	5%
Binary lecture	3%
Briefing	3%
Virtual Tutorial	2%

One of the tasks in the second stage of our research was to analyze the effectiveness of interactive teaching methods. Evaluation of the effectiveness of various types of training is presented in Table 02.

Table 02. Evaluation of the effectiveness of various types of training, according to students and research participants

Forms of classes	Average score, student rating
Work in small groups	10
Exhibitions, events	10
Social projects	10
Interactive game	10
Educational games: role-playing, imitation, business, educational	10

Interactive Lecture	10
Scale of opinions, discussion, debate, symposium	10
Movies	9
Work in pairs	8
Excursions, competitions	8
Brainstorm	8
Creative tasks	7
Work with audio and video	7
Student as a teacher	7
Work with visual aids	7
Decision Tree	6
Discussion of complex problems	5
Project Method	5
Work with documents and various information	4
Drafting written documents	3
Classical lecture	3

From the obtained statistical data, we can draw the following conclusions:

- The absolute majority of students gave a high score to interactive forms of education. According to survey participants, interactive forms are most effective in obtaining new knowledge. In order to raise the effectiveness of educational process and increase the level of education in general, it is necessary to introduce various types of interactive forms of education with the top rating (see Table 01): team play, watching audio and video materials, participation in social projects, training business games.
- According to the students, the most inefficient forms of conducting classes are working with documents, traditional lectures, and writing written reports. Teachers are encouraged to review the main form of presentation of the material in their subject and increase the number of interactive forms of training. It is necessary to note that interactive forms of training also have their drawbacks, for example, a longer and more difficult preparation for conducting classes.

One of the study objectives was to determine the leading representative system among university students. According to the obtained data, we have identified the leading representative systems for Russian students. The data are presented in Figure 02.
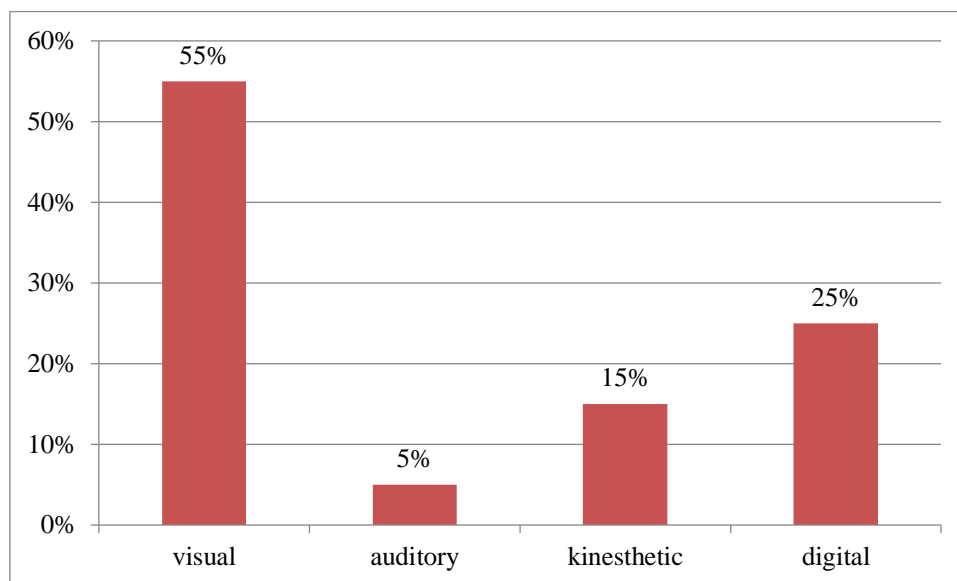
Figure 02. Test results for determining the leading representative system for Russian university students

7. Conclusion

As a result of the study, which included a survey and 8 focus groups, the following results were obtained:

1. The leading representative system for most students is the visual channel of information perception - 55%.

2. The least developed representative system is the audio system; it was noted as the prevailing channel of information perception by only 5% of respondents.

3. 75% of research participants noted that in addition to the main representative system, they are also comfortable receiving information via another channel, which indicates the presence of an additional representative system.

4. The participants of the experiment noted that communication of people with various representative systems could become a serious problem for the qualitative perception of new information.

5. 90% of study participants noted that they would like to develop all four representative systems in order to increase the general level of perception of new information.

According to the results of the study, we can offer the following recommendations that will improve the efficiency of higher professional education in Russia:

1. It is necessary to develop a combined lesson scheme that takes into account all types of representative systems (auditory, visual, kinetic and digital) and allows you to convey information to each student as fully as possible. It is also important to note that educationalists developing this scheme should take into account statistical data on the percentage ratio of students with the leading representative system obtained in the course of the study.

2. It is necessary to introduce into the educational process innovative forms of conducting classes, since the results of the study indicate that traditional lectures, with readings and monotonous texts, are not productive and need to be replaced by other forms of teaching at the university.

3. In the process of teaching students, emphasis should be placed on the visual and digital representative systems, since these two channels of information perception are leading among the majority of students, and account for 80% of the entire body of students.

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