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**ПРИМЕНЕНИЕ ЭВРИСТИЧЕСКИХ МЕТОДОВ ОБУЧЕНИЯ ПРИ ИЗУЧЕНИИ
ДИСЦИПЛИНЫ «МАРКЕТИНГ» ДЛЯ ПОВЫШЕНИЯ УРОВНЯ
ТВОРЧЕСКОГО МЫШЛЕНИЯ ОБУЧАЮЩИХСЯ СПО**

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Аннотация. Современные подходы в педагогике отличаются гибкостью, которая делает возможным использование разнообразных нетрадиционных методов в обучении студентов среднего и высшего уровня образования. От выбора метода зачастую зависит не только эффективность усвоения знаний, но и развитие творческого потенциала обучающихся, при соблюдении важнейшего условия: метод должен быть эффективным и не навредить студенту. Эвристические методы обучения в современном образовании являются важной и значимой характеристикой творческой поисковой деятельности обучающихся, поскольку элементы эвристических методов обучения востребованы в образовательном процессе учебного учреждения. В психолого-педагогической литературе представлены различные толкования понятия эвристических методов обучения, что отражает многозначность его содержательных интерпретаций и достаточно сложную реальность, имеющую различные смысловые оттенки. Многие ученые в своих исследованиях отмечают, что зачастую ошибки и провалы в образовательной работе, происходят из-за недостаточного учета значимости вопросов по использованию эвристических методов обучения, истоков его возникновения, закономерных путей, а также влияние на совершенствование поисковой деятельности обучающихся. Цель исследования – разработка комплекса учебных занятий с использованием эвристических методов обучения для повышения уровня творческого мышления обучающихся. Авторы ставили перед собой следующие задачи: изучить теоретические основы использования эвристических методов обучения; разработать и внедрить комплекс учебных занятий с использованием эвристических методов обучения. Объектом исследования выступил КГБПОУ «Красноярский технологический техникум пищевой промышленности». Предметом – использование эвристических методов обучения в образовательном процессе данной образовательной организации. Авторы выдвинули и экспериментально подтвердили гипотезу о том, что использование эвристических методов обучения способствует повышению уровня творческого мышления обучающихся, в процессе преподавания дисциплины «Маркетинг» в системе СПО. Также в статье представлены практический опыт применения эвристических методов обучения для изучения экономических дисциплин в учреждении среднего профессионального образования и разработка учебных занятий с использованием эвристических методов обучения.

Ключевые слова: эвристический метод обучения, среднее профессиональное образование, экономические дисциплины, творческая деятельность, познавательная деятельность, творческая активность, синектика, брейнсторминг, беглость речи, гибкость, находчивость.

**THE USE OF HEURISTIC TEACHING METHODS IN THE STUDY OF THE DISCIPLINE
“MARKETING” TO INCREASE THE CREATIVE THINKING LEVEL
IN STUDENTS OF SECONDARY PROFESSIONAL EDUCATION**

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Abstract. Modern approaches to pedagogy are characterized by flexibility, which makes it possible to use a variety of non-traditional methods in teaching students of secondary and higher education levels. The choice of method often depends not only on the effectiveness of learning, but also on the development of students' creative potential, provided that the most important condition is met: the method must be effective and not harmful for the student. Heuristic methods of teaching in modern education are an important and significant characteristic of the creative search activity of students, since elements of heuristic methods of teaching are in demand in the educational process of an educational institution. The psychological and pedagogical literature presents various interpretations of the concept of heuristic teaching methods, which reflects the ambiguity of its content interpretations and a rather complex reality with various semantic shades. Many scientists in their research note that often mistakes and failures in educational work occur due to insufficient consideration of the significance of questions on the use of heuristic teaching methods, the origins of its occurrence, the natural ways, as well as its impact on improving the search activity of students. The purpose of the research is to develop a set of training sessions using heuristic teaching methods to improve the level of creative thinking of students. The authors set the following tasks: to study the theoretical foundations of using heuristic teaching methods; to develop and implement a set of training sessions using heuristic teaching methods. The object of the study was RSBPEI “Krasnoyarsk technological college of food industry”. The subject is the use of heuristic teaching methods in the educational process of this educational organization. The authors put forward and experimentally confirmed the hypothesis that the use of heuristic teaching methods contributes to improving the level of creative thinking of students, in the course of teaching the discipline “Marketing” in the SPE system. The practical experience of using heuristic teaching methods for the study of economic disciplines in secondary vocational education institutions and the development of training sessions using heuristic teaching methods are also presented in the article.

Keywords: heuristic method of training, secondary professional education, economic disciplines, creative activity, cognitive activity, synectics, brainstorming, fluency of speech, flexibility, resourcefulness.

INTRODUCTION

Heuristic teaching methods are currently an important and significant characteristic of students' creative search

activity, since elements of heuristic teaching methods are in demand in the educational process of any educational institution. In the psychological and pedagogical literature,

various interpretations of the concept of heuristic teaching methods are presented, which reflects the ambiguity of its content interpretations and a rather complex reality that has various semantic shades. In the modern literature on this problem, there are many approaches and tactics for studying heuristic teaching methods. Nevertheless, it can be seen that many researchers-scientists such as A.V. Khutorskoy [1], L.S. Vygotsky [2], V. M. Krol [3], P. I. Pidkasisty [4], V. I. Andreev [5] note that many errors and failures in the work occur due to insufficient consideration of the significance of issues on the of heuristic teaching methods use in educational activities, the origins of its occurrence, the natural ways, as well as its impact on improving the students' search activity. Many scientists investigate the correlation of creative activity and heuristic activity: Kretova D.A. [6], Shishkova M.G [7], Serebryakova M.A. [8], Radionova S.A. [9], Manankova E.S. [10]. Special attention is given to heuristic methods use in various disciplines: Garifullina A.A. [11], Zinovieva L.A [12], Salmanova D.A. Bagirova Z.K. [13], methodological conditions of their use Ulezko Yu.D. [14], as well as their facilitation of the educational quality Anatskaya A.G., Nastashuk N.A. [15]. Heuristic methods are successful in project activity: Kornilova O.A. [16].

METHODOLOGY

The purpose of the research is to develop a set of training sessions using heuristic teaching methods to improve the level of students' creative thinking in the conditions of secondary professional education. The following tasks are set: to study the theoretical foundations of the heuristic teaching methods use; to develop and implement a set of training sessions using heuristic teaching methods in the Regional state budgetary professional educational institution "Krasnoyarsk technological college of food industry". The object of research is RSBPEI "Krasnoyarsk technological college of food industry". The subject of the research is the use of heuristic teaching methods in the educational process of the Krasnoyarsk technological college of food industry. The above-mentioned object, subject and tasks allowed to formulate the following hypothesis: the use of heuristic teaching methods helps to increase the level of creative thinking in the process of teaching the discipline "Marketing" in students of the secondary professional education system. This paper presents the experience of using heuristic teaching methods for the study of economic disciplines in a secondary vocational education institution, the development of training sessions using heuristic teaching methods.

RESULTS

In the beginning it is logical to dwell upon the concept and essence of heuristic teaching methods. The term "heuristics" originates from the legendary cry "Eureka!" (from the Greek – found, opened), with which the exultant Archimedes jumped out of the bathroom. In its shortest and most concise form, this definition sounds like "the science of making discoveries". Heuristics, in the modern sense, can be represented as the science of the regularities of the organization of creative thinking processes. From the above, we can emphasize the presence of a direct connection between heuristic and creative solutions. At the same time, the central element of creativity is a certain insight, finding a new and original solution to the problem, and heuristics is the science of the principles of organizing creative activity, methods, techniques, and rules that underlie the creative process. Various techniques and methods that faculty members, tutors and teachers use in the process of teaching creative solutions to non-standard problems are called heuristic methods of teaching [1].

A.V. Khutorskoy notes that Jean-Jacques Rousseau and L. N. Tolstoy were the founders of natural education and training, and their names are associated with the development of heuristic teaching methods [1]. Rousseau hypothesized that the development of a child is based on its own sense organs, as well as he advocated a natural way of learning and the absence of artificial punishments, which were replaced by the natural consequences of wrong

actions. L. S. Vygotsky suggests that learning develops the student's historical characteristics of a person and introduces the term "listening", meaning the transfer of external activity functions inside the student. He also hypothesized that the fundamental goal of any educational process is to involve the student into the social and social experience of mankind. Heuristic activities were also considered in his work by P. I. Pidkasisty who showed the unity and relationship of reproducing and creative processes in the student's activity, and justified that: "with the introduction of the heuristic principle in teaching, the student's cognitive activity rises to the level of search activity, where the number of reproducing mental actions is reduced in favor of increasing creative processes" [4].

If we analyze the correlation between heuristic and creative activities, we can conclude that heuristic activity is a much broader concept. It can be proved by the fact that heuristic activity involves the following: 1) various creative processes and techniques aimed at developing educational products; 2) unavoidable and indispensable mental and cognitive processes that accompany creativity; 3) organizational (planning, organizing, directing coordinating, etc.), methodological (an algorithm for searching for a goal, a set of techniques, methods, tools, principles for achieving the goal), psychological (new ways of behavior, adaptation to changing living conditions, use the individual's internal reserves, IQ) and other processes that improve creative and cognitive activity. The goals of educational activity in relation to the student can be divided into: "external normative goals, which are formed by the teacher in various forms and types, providing, for example, the implementation of educational standards, and internal goals, which the student has formulated independently or with the help of the teacher in relation to the educational field or object of study" [1]. The continuity of students' self-determination and decision-making in the process of educational activity is explained by the fact that the key element of it is the educational situation. The result of heuristic educational activity is the creation of an external materialized product that will not only satisfy the student's need for self-realization, but will also contribute to the development of personal qualities: cognitive, creative, organizational, etc. Having studied the concept of heuristic educational activity, we can distinguish its characteristic peculiarities and features: 1. The first feature is the content of heuristic activity should be determined by personal motives, goals and characteristics of the student. For example, following external instructions without creating a new educational product for students will not be a heuristic activity. 2. The second peculiarity is that the student needs to create his own educational product, in accordance with the type of activity. 3. The third criterion is the presence of a problem situation, the overcoming of which causes the inner increment of the subject activities.

The realization of individual abilities of students and the so-called "cultivation" of personal educational potential of students can be considered the basis of the process of heuristic learning. A feature of these methods use is that for their realization it is necessary to create such conditions that would lead the student to realize the necessity of self-movement, independent production of secondary and private challenges to mastering the methods of their solutions, constructing their own knowledge systems and ways of working, i.e. constructing own educational trajectory. V. I. Andreev [5] along with other pedagogical scientists engaged in the study of heuristic learning methods developed and codified heuristic rules for known activities, teaching methods: direct and massive brainstorming, the method of collective search for original ideas, a method of heuristic questions, multidimensional matrix inversion method, method of empathy, synectics method, and heuristic play method. There are two main functional characteristics of heuristic activity methods: "guidance" functions of the facilitator (the teacher who pushes the student to the right decision) and functions for "reducing" options when searching for

possible ways to solve problems. The classifications of heuristic learning methods distinguish cognitive methods of learning that are in turn divided into methods of science, methods of educational subjects and meta-subject. Scientific methods include methods of comparison, analogy, synthesis, classification, etc. Creative teaching methods provide students with the opportunity to create their own educational products. We can give the following examples: empathy and emotional intelligence method, "brainstorming", performance of the teacher's role by the student, etc. Students are in a very complicated situation and have to use their intuition (immediate understanding of something without conscious reasoning) and sometimes make illogical actions. Organizational activity methods of teaching are divided into methods of the main subjects of education. Such methods are: educational goal setting, planning, control, reflection, etc.

Now let's summarize how to use heuristic teaching methods in the study of economic disciplines. A. A. Garifullina notes that in modern conditions in educational institutions, insufficient attention is given to the development of intuition, forecasting, and the ability to generate new ideas, while increasing importance is attached to the ability of an analyst to predict and assess risks in an unstable economic situation [11]. Much of teachers' attention is focused on logical methods of solving problems, both standard and non-trivial. It is increasingly important to use heuristic methods in the analysis of economic activity to obtain not only quantitative characteristics, as when using calculation methods, but also qualitative characteristics of the business entity. Heuristics in economics refers to the ability of a person to solve problems in a non-standard way, analyze economic phenomena and processes, relying on special properties of the human brain, such as intuition, resourcefulness, ingenuity, etc. Analyzing various interpretations of heuristic methods, we can identify a unifying feature, which is that heuristic are those techniques and methods that are aimed at building non-stereotypical plans and programs and ways to solve problem situations. Heuristic learning methods are combined with the most important theory of economics – the theory of decision making, forecasting and planning.

Heuristics made the analysis of forecasting prospects publicly available. There are certain conditions that presuppose the use of the heuristic methods: the initial information is bound to have qualitative nature; there should be the lack of sufficiently representative and reliable information about the studied object; lack of a clear subject description and mathematical formalization of the assessment subject of; inexpediency and lack of time and funds for research using formal models at the first stages of justification of management decisions; large uncertainty of source data for analysis; lack of technical means with appropriate characteristics for analytical modeling; the extremity of the situation being evaluated [11].

The phenomenon cognition occurs "in the course" of creative activity which results in a new educational product. The following well known methods can be used, we will only enumerate them:

- the inventing method is a method of creating a product previously unknown to students as a result of their specific mental actions;
- the "if... method" when the faculty member offers students some conditions ("If...") under which students should create their own educational product;
- the figurative painting method when the students create a complete vision of the object being studied;
- the hyperbolization method is based on changing the size of objects of knowledge, its individual parts or qualities.
- the agglutination method when students are asked to combine qualities, properties, and parts of objects that are not united in reality;
- "Brainstorming" when students the biggest possible number of ideas because of freeing participants from inertia of thinking and stereotypes.
- the synectics method is based on the method of

brainstorming, various types of analogies (verbal, figurative, personal), inversion, associations, etc.

- the inversion method or the method of cases.

Now let's show how the above analyzed heuristic methods help in teaching "Marketing" for students of secondary professional education. Most professional educational institutions follow a competency-based approach to education. The final result of the educational process based on this approach assumes modeling of educational programs based on specific requests of the relevant areas of professional activity. From the above, we can conclude that a specialist who corresponds to the competencies presented to his specialty will meet the requirements of his professional sphere, and as a result will be in demand in the labor market. Krasnoyarsk technological college of food industry adheres to this approach in the educational process. Currently, the specialist is considered as an independent and creative person, and not only as a professional who has the necessary knowledge, skills and abilities. To ensure a high level of professionalism, a cultural basis of professional activity is necessary, that is, the specialist must combine professional abilities, knowledge, skills, skills and experience with a sufficiently high level of general culture. This basis is set out in the Federal state educational standard for each specialty in the form of general cultural competencies. General cultural competence is manifested not only in solving narrow professional tasks, but also in how a person perceives, evaluates and understands the world outside of their profession. In accordance with the Federal state educational standard of secondary vocational education in the specialty 38.02.04 Commerce (by industry), future specialists must have general cultural competencies that require the development of creative thinking in students and the implementation of search activities. These are such competencies as: GC – 3: make decisions in standard and non-standard situations and take responsibility for them; GC – 4: search for and use information necessary for effective performance of professional tasks, professional and personal development. The use of heuristic teaching methods allows to develop creative thinking, since the feature of these methods is not only the aspect of independent search activity of students in the classroom, but also a creative approach to solving problem situations. To study the effectiveness of using heuristic teaching methods in the educational process, experimental work was carried out on the basis of the Krasnoyarsk technological college of the food industry in three stages. The first stage is to determine the initial level of creative thinking (creativity) of students by means of a questionnaire. The second stage included the experimental group of the specialty 38.02.04 Commerce (by industry), where classes were held using heuristic teaching methods, the developed workbook on the discipline "Marketing" was used, the reaction of students to this method of conducting classes was tracked using the observation method. The third stage was a control exit survey to determine the final level of creativity of students and determine the effectiveness of the use of heuristic teaching methods.

To implement the first stage of the experimental work, two third-year study groups were selected, studying the specialty 38.02.04 Commerce (by industry), studying the discipline "Marketing". The first group was a control group, and the second is an experimental group that introduced heuristic teaching methods into the educational process. The selected study groups include 3rd year students in the specialty 38.02.04 Commerce (by industry). Experimental work was carried out in the framework of studying the discipline "Marketing". Study groups had a numerical difference in the number of 2 people; the age composition of the groups is the same (18 – 19 years). The total number of respondents was 44. Based on the deviation of the experimental group data from the control group, conclusions were made about the effectiveness of using heuristic teaching methods to increase the level of creative thinking.

At the first stage of the experimental work, the initial level of creativity of students was identified by using the method

of Personal Creativity” of D. Johnson. This method is a rapid diagnostic assessment of the presence of students’ creativity characteristics: sensitivity to the problem, preferences for complexity; fluency; flexibility; resourcefulness, ingenuity, development; imagination, ability to structure; originality, ingenuity and productivity; independence, confident style of behavior based on themselves, self-sufficient behavior. This method allows you to study the level of development of creative thinking (creativity). Based on the results of the survey in the control and experimental groups the following results were obtained:

1. In the control group of 21 students surveyed, no student had a very high level of creativity, 14.3 % (3 students) had a high level of creativity, 28.6 % (6 students) had an average level, 38.1 % (8 students) had a low level, and 19 % (4 students) had a very low level.

2. In the experimental group of 23 respondents surveyed, 4.3 % had a very high level of creativity (1 student), 13.1% had a high level of creativity (3 students), an average level – 30.4 % (7 students), a low level – 39.1 % (9 students), and a very low level of 13.1 % (3 students).

The process of activating students in solving educational heuristic problems was implemented in the second stage of experimental work, which consisted of conducting training sessions using heuristic teaching methods and working with heuristic tasks proposed in the workbook on the discipline “Marketing” in the experimental training group of the technical school. To implement the use of heuristic teaching methods in the educational process of the technical school, a set of classes had been developed (two classes in the discipline “Marketing” using heuristic methods): a heuristic discussion and a heuristic “brainstorming”. A characteristic feature of these classes was that these methods direct students to generate new creative ideas.

Lesson # 1 “Problems of foreign market penetration”. Methodological development of the lesson on the topic: “Problems of penetration into the foreign market” reflected the implementation of the main professional educational program in the specialty 38.02.04 Commerce (by industry). This topic belonged to topic 3.2 “Structure of marketing activities” in accordance with the working program of the discipline. Type of activity was enrichment and systematization of knowledge. Tasks were: providing an opportunity to get a variety of information from interlocutors, demonstrate and improve their competence, check and clarify their ideas, views on the discussed problem, apply existing knowledge in the process of joint solving educational tasks; stimulation of students’ creativity, development of their ability to analyze information, reasoned, logically constructed proof of their ideas, with an increase in students’ communicative activity, their emotional involvement in the educational process. The course of the lesson: at the initial stage of the lesson, the topic, goals and objectives of the lesson are announced. The students were offered a heuristic task: the Company “Moidodyr” (Russia) has been specializing in the production of fittings and accessories for bathrooms and water supply systems (faucets, nodes, fasteners, shower equipment) for more than 20 years. The company offers its products both for households and for various organizations. The company’s share in the domestic market is 32%, in Belarus – 8%, in Poland – 3%, and a large trading company in Miami annually buys about 4% of the company’s products for sale in the United States (a share of 5%). The total annual turnover of the company exceeds 40 million rubles, and in these markets – 25 million rubles. Differentiation of products is made by the company by size, color, style, finish (metal and plastic), which makes it possible to take a stronger market position. The company recently commissioned a study of the German market. The encouraging results have prompted the company to actively introduce itself to the German market, setting a one – year implementation period. Issues for reflection and discussion: recommend ways to introduce the company to the German market; identify potential difficulties associated with each penetration opportunity; select and

justify the method of penetration into the Russian market; offer recommendations for the system of merchandising and distribution. Students were asked to prepare a speech and answer the questions posed by the teacher, to justify their answer. Next, students were trained to prepare speeches, discuss what they heard. In the discussion of the topic, students took an active part, emotionally expressed their ideas and justifications, which shows interest in the teaching methods used. After discussing the topic, the results were summed up and the work of students in the class was evaluated.

Lesson # 2 “Choosing types and methods of distribution of goods”. This lesson relates to the topic 3.13 “Classification of marketing communications” in accordance with the work program on the discipline “Marketing” for the specialty 38.02.04 Commerce (by industry). The main purpose is to build a model of a training session for the complex application of knowledge in the academic discipline “Marketing” in the form of “brainstorming”. The type of training session is a training session of complex application of knowledge, “brainstorming”. Methods of conducting the lesson: solving a problem situation. Connections are intra-subject: the topic is related to all other topics of the discipline and inter-subject: “Management” and “Economics” which make it possible to improve the effectiveness of the learning process. The purpose of the lesson: to encourage students to generate new ideas to solve a problem situation. The tasks: formation of students’ system of economic and industrial knowledge and the ability to apply this knowledge to solve educational and industrial tasks; development of students’ independence when performing practical tasks, professional literacy, creative thinking, self-analysis when performing practical work, self-control and responsibility for the quality of the work performed; formation of students’ professional skills; systematization of previously studied material by students; the creation of conditions for creative activity of students. At the initial stage, the theme, purpose, and objectives of the training session were announced. Then the students were divided into the following groups: idea generators, analysts, and counter-idea generation. Students were told the rules for conducting “brainstorming”. The next stage of the lesson was to solve a heuristic problem situation proposed by the teacher. In the course of this lesson, students’ search activity and generation of creative ideas were included. The resulting ideas were criticized by a group of analysts based on their knowledge of the topic. Then there started the process of counter-idea generation. The final stage was the selection of the most realistic solutions to the problem from the entire variety of creative options offered by students. Based on the front of the survey of students this form of learning has not previously been used, which caused high interest in the form of conducting training sessions. Students took an active part in all stages of the lesson. Problematic situation: as a result of taxation imposed by the government of Ireland, which brought at least 50% of the price of each car sold, there was a sharp decline in car sales in the Irish market. By this time, the country’s market was saturated with various models and modifications of cars adapted to its requirements. The ongoing advertising campaign to promote “Lada” cars has not created a favorable opinion of them as a competitive, cheap and convenient way to travel. Thus, there were unfavorable conditions for entering the Irish market of a new Soviet car. Suggest ways to increase demand for Lada cars and explain their effectiveness.

The performance of heuristic teaching methods in the educational process of RSBPEI “Krasnoyarsk technological college of food industry” was reflected in the implementation of the third stage of the experimental work, containing a survey using the method of D. Johnson, which determines the level of creativity of students after the teaching of heuristic teaching methods, and summarizing conclusions about the effectiveness of these methods.

The results of the final survey allow us to conclude that:

1) the percentage of students in the experimental group with a very high level of creative thinking increased by 4.4

%, high – by 4.3 %, average – by 8.7 %, and the percentage of students with a low level of creativity decreased by 17.4 %, very low level remained unchanged;

2) from the analysis of the data obtained, it can be concluded that the students increased their level of creative thinking by conducting classes using heuristic methods, which caused an increase in the percentage and number of relevant students in comparison with the control group, in which these classes were not held.

CONCLUSIONS

After analyzing the research and calculations, we can conclude that the experimental impact in the form of training sessions using heuristic teaching methods was effective. Methodical development of lessons and working notebook on discipline “Marketing” are introduced into the educational process of RSBPEI “Krasnoyarsk technological college of food industry”. Consequently, the use of heuristic teaching methods in educational process at studying of economic subjects in the secondary professional education system is becoming more relevant as these methods improve creative thinking; enhance search and design activities required students to specialists. These methods are also actively used in foreign practice. The developed set of training sessions with the use of heuristic teaching methods and a workbook are intended for wide implementation in the educational process of vocational training institutions and is of particular importance for the training of economists and managers, as it helps to increase the level of creative thinking necessary for decision-making in non-standard situations. RSBPEI “Krasnoyarsk technological college of food industry” effectively implements the suggested method of teaching.

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