Traditionally Heuristic-Analytical Type of Teaching: Theory and Practice

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The article substantiates the scientific and theoretical provisions of the traditionally heuristic-analytical type of education, which is understood as a type of education that combines cognitive, creative, and analytical activities enter higher education, that is, reproductive and productive education. The main purpose of the study is to experimentally test the effectiveness of using heuristic-analytical training in the learning process. In the course of the research, the method of experimental research was used. It was stated that most of the respondents in the experimental group should have a high degree of development of professionally important skills, while the majority of respondents in the control group have an average level of development.

INTRODUCTION

The modern educational system is gradually switching to a competency-oriented approach to learning. The development and formation of professionally important competencies among applicants for higher education are impossible without the introduction of innovative means, types, forms, methods, and techniques of teaching into the educational process.

Heuristic learning is one of the types of learning that is used in conjunction with other types of learning. There are a few scientific works that highlight the issues of heuristic teaching of schoolchildren and students.

For example, Hilbert T. S., Renkl A., Kessler S., & Reiss K. (2008) and Kryshtanovych, M., Bilyk, V., Hanushchyn, S., Sheremet, I., & Vasylenko, K. (2021) conducted a field experiment and found that heuristic examples help students to develop better conceptual knowledge about mathematical proof and develop proof skills. Blumenfeld Phyllis & Mergendoller John & Swarthout Donald (2006), describe the cognitive characteristics and procedural "forms" that are associated with general school learning objectives. They concluded that this illustrates how their variations can affect student motivation and learning. These authors concluded that the simple meaning of the task and the unrecognizable procedure, as a rule, lead to limited thinkers and alienation of workers.

Phyllis C. Blumenfeld, John R. Mergendoller & Donald W. Swarthout (1987) focused on developing students as "thinkers" capable of processing information, planning actions, and performing practical and theoretical assignments.

Reiss K., & Renkl A. (2002) proposed the concept of using heuristic worked-out examples that do not provide an algorithmic solution to the problem but instead suggest heuristic steps that lead to finding evidence.

Keys CW, Hand B., Prain V., & Collins S. (1999), in their scholarly work, argued that the use of heuristics for scientific work encouraged students to participate in Metacognition by generating meaning from data, establishing relationships between procedures, data, evidence, and statements.

Gilovich, Griffin, & Kahneman (2002) investigating human reasoning noted that people draw conclusions and make decisions in their daily lives using processes that are relatively easy to apply. Therefore, the introduction of creative forms of education will promote a creative approach to solving professional problems and expand the boundaries in the decision-making process and the variety of decisions and conclusions themselves.

Improvement of teaching methods is an urgent problem for modern educational institutions. For example, Amar, David (2018), in their research, studied the effectiveness of innovative methods and systems of teaching, including the heuristic -analytical one.

The importance of active teaching of the teaching staff is actively highlighted in the work of Bakare, Orji (2019), who note that the effectiveness of the heuristic-analytical teaching method directly depends on the active participation of the teacher in the learning process.

The purpose of the article is to define and substantiate the traditionally heuristic-analytical type of teaching.

To achieve this goal, it is necessary to solve a number of the following tasks:
- to substantiate the scientific and theoretical provisions of the traditionally heuristic-analytical type of teaching;
- to establish the degree of effectiveness of traditionally heuristic-analytical training, introduced into the educational process of training psychologists;
- to explore the advantages and disadvantages of the traditionally heuristic-analytical type of teaching.

MATERIALS AND METHODS

Participants. A total of 96 applicants for higher psychological education took part in the research study, of which 48 were in the experimental group and 48 were in the control group. It should be emphasized that in this research study, the results of applicants to higher education were taken into account who in the future plan to work in the specialty 053 "Psychology" (that is, the respondents were motivated by students from different educational groups, this applies to both the respondents of the control group and the experimental one).

Research procedure. When training specialists in the field of psychology, the forms and methods of heuristic and analytical types of training were introduced into the traditional type of training.

To establish the degree of effectiveness of the traditionally heuristic-analytical type of training, a scientific experiment was carried out, the essence of which was that psychology students of the first group (control group) were trained according to the traditional type of training (lecture, seminars, practical

exercises, final control - passing an exam), and the students of the second group (experimental group) studied according to the traditional heuristic-analytical type of teaching.

To ensure the effectiveness of the traditionally heuristic-analytical type of training, the following steps were taken:

1. The professionally oriented academic discipline – "Psychology of Conflict" was chosen.
2. A list of professionally important skills that needed to be formed among applicants for higher education in the study of this academic discipline was highlighted. Introduced students of two groups with a list of professionally important skills that should be formed in them in the process of studying the discipline. Students were given a list of professionally important skills (e.g. a monument).
3. The students of the two groups were presented with the criteria for assessing the degree of development of skills, where: 1 - a very low degree of development of skills; 2 - low degree of development; 3 - average degree of development; 4 - high degree of development; 5 - a very high degree of development (typical for experienced professionals).
4. The students explained the main differences between the two types of learning - the traditional and traditionally heuristic-analytical ways of revealing their content. In particular, according to the traditionally heuristic-analytical type of teaching, they have explained its basic principles (development, scientific nature, complexity, activity, independence, creativity, consistency, orderliness, thoroughness, and the connection of learning with life and with practice), the main methods and forms, its advantages and limitations.
5. The students were offered, through anonymous questionnaires, to choose the type of training that they like best.
6. Based on the results of an anonymous questionnaire, two groups were formed - experimental and control (the criterion for the formation of groups was the desire of the majority of students to undergo training in order to receive a certain type of education).
7. All applicants for higher education were asked to develop and assimilate clear intragroup principles and rules for interaction in a group. Among the intragroup principles, the principles of "confidentiality", "do no harm", "humanity", "impartiality", "objectivity", etc. were obligatory. Among the obligatory intragroup rules was the rule "Stop", the rule "Do not condemn", the rule "Do not commit on client transference and countertransference", and the rule "Do not interrupt the other when he speaks", etc.

The development and acceptance of intra-group principles and rules for interaction in a student group allow students to be more open to each other and to be more grouped and friendly.

To test the degree of effectiveness of traditional heuristic-analytical types of teaching after studying the discipline "Psychology of Conflict", the next steps were done:

1) the students of the experimental group were asked to fill out an anonymous questionnaire "Advantages and disadvantages of the traditionally heuristic-analytical type of teaching";
2) further, an expert assessment of the degree of formation of professionally important skills of students of two groups was carried out. For this, forms were developed with a list of professionally important skills and criteria for assessing the degree of their development. Each student was given three forms:
   - the first one is for students to assess the degree of development of professionally important skills in them;
   - the second is for a classmate to carry out an expert assessment of the degree of development of professionally important skills in a particular student (personal forms of applicants were handed out randomly)
   - the third is for the teacher to carry out an expert assessment of the degree of development of students of both groups of professionally important skills.

A prerequisite for an expert assessment of the degree of development of professionally important skills among students was the observance of the principles: of objectivity, fairness, and impartiality. Further, an

expert assessment of the degree of formation of professionally important qualities in students of two groups was carried out after passing the exam (to ensure the objectivity of assessments).

Research methods. In our scientific research, the main methods were - analysis and synthesis; questionnaires, the method of mathematical statistics, and heuristic methods ("Heuristic Questions" by MF Quintilianus (1834), "Five Why?" by Sakishi Toyoda (2008), "Brainstorming" by Alex F. Osborne (1963), "Thinking Map" by T. Buden (2009) and others) analytical methods ("SWOT-analysis" Dilts R. (2004), Khutorskoe A.V. (1998), Kryshtanovych, Kryshtanovych, Stepanenko, Brodiuk, Fast, (2021).

With the help of analysis and synthesis, a list of professionally important skills was identified that students must develop in the process of studying the discipline "Psychology of Conflict". With the help of the questionnaires developed by us, the degree of development of the students of two groups of professionally important skills, which were formed in them in the process of studying the "Psychology of Conflict", was established; as well as a list of advantages and disadvantages of the introduced problem-heuristic-analytical training. Using the method of mathematical statistics, the results were calculated, and the percentage averages were invented for each skill and each question. Heuristic and analytical methods helped us to organize a creative and productive form of education.

Ethical approval. The survey was anonymous, ethical, and conducted with the voluntary consent of the respondents.

RESEARCH RESULTS AND DISCUSSIONS

Higher educational institutions must train competitive specialists, therefore the traditional form of education must acquire qualitative innovative changes by introducing the most effective types, forms, methods, techniques, and means.

Traditionally, heuristic-analytical training is a type of training that combines cognitive, creative, and analytical activities of applicants for higher education, that is, reproductive and productive learning.

The goal of traditionally heuristic-analytical training is the development and formation of a creative, competent, and competitive specialist.

The quality and effectiveness of traditionally heuristic-analytical training determine the following:
1. Basic conditions, namely:
    1.1. The competence of the teacher. The teacher must clearly know the technology of analytical and heuristic methods; own conflictological psychotechnologies - diagnostics, prevention, prevention, and resolution of conflicts.
    1.2. The reliability of the teacher. Students should not be afraid to reveal their personal problems to the teacher, they should trust him.
    1.3. The motivation of the subjects of the educational process (teachers and students).
    1.4. It is imperative that the subjects of the educational process (teacher and students) adhere to the principles of traditionally heuristic-analytical teaching and intragroup principles and rules of interaction in the study group.
2. Groups of methods, namely:
    2.1. heuristic methods - for example: "Heuristic questions" M.F. Quintilianus (1834), "Five Why?" Sakishi Toyoda (2008), "Brainstorming" by A. F. Osborne (1963), "Thinking Map" by T. Buzden (2009), and others;
    2.2 analytical methods - for example: "SWOT-analysis" by H. Cornelius and S. Feir (1992) and others;
    2.3 verbal methods - for example conversation, explanation, explanation, etc.;
    2.4 psychodiagnostic - for example, blank techniques, projective techniques, etc.;
    2.5 creatively productive - for example: writing an essay, preparing a thematic crossword puzzle, preparing a structural and logical diagram, etc.

Traditionally, heuristic-analytical training was conducted in the educational process of training psychology students in the study of the discipline "Psychology of Conflict". Among the main tasks of

studying this academic discipline was the development and formation of professionally important skills. These skills include skills such as:

- − analyze conflict phenomena, events, and situations (structure the receipt of data, form and test hypotheses, invent certain patterns in the subject of analysis, and make informed conclusions)
- − analyze the reasons for the emergence and deployment of conflict interaction;
- − to determine the stages of the course of the conflict;
- − contribute to the constructive settlement of conflicts;
- − to help the conflicting parties to invent a way out of the "impasse";
- − to provide directions for the further development of the conflict and its possible consequences;
- − take a neutral position during the settlement of conflict interaction.

After studying the discipline "Psychology of Conflict", an expert assessment of the degree of development of professionally important skills that were to develop in the students of the experimental and control groups was carried out. The experimental and control groups of students are equivalent to each other in terms of gender, age, and other indicators. The content of the curriculum for both groups is the same, only the teaching method is different. The assessment of the degree of development of skills was carried out according to a 5-point system, where 1 is a very low degree of development of skills; 2 - a low degree of development; 3 - average degree of development; 4 - high degree of development; 5 - a very high degree of development (typical for experienced professionals).

After statistically processing the results, the degree of their development in the respondents of both groups was established for each skill. So, let us consider the results of an expert study of the degree of development of students' professionally important skills, which should have been formed in the process of studying the discipline "Psychology of Conflict".

The ability to analyze conflict phenomena, events, and situations was shown in the Table 1.

TABLE 1
THE DEGREE OF DEVELOPMENT OF THE RESPONDENTS' ABILITY TO ANALYZE CONFLICT PHENOMENA, EVENTS, AND SITUATIONS

Groups	SSR n= 48 (y %)					REASC n= 48 (y %)					REASC n= 10 (y %)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	8,3	91,7	0	0	0	16,7	83,3	0	0	0	18,6	81,3	0
Control	0	0	39,6	60,4	0	0	0	43,8	57,2	0	0	0	52,1	47,9	0

Experts: SSR - student self-assessment results; REASC - the results of an expert assessment by a student's classmate; RSEAT - the results of the student's expert assessment by the teacher.
Groups: EG - expert group; CG - control group.

It was found that those assessing the degree of development of this skill, the respondents avoided the ratings "1", "2" and "5". It was stated that the majority of the respondents in the experimental group had a high degree of development of the ability to analyze phenomena, events, and situations (as the respondents in the control group had lower indicators).

For a holistic view of the degree of development of the ability to analyze conflict phenomena, events, and situations, the arithmetic means indicators $(\overline{x})$ are based on three expert assessments (i.e. the sum of three assessments: self-assessment, assessments by a classmate, and a teacher) was calculated. As a result, was found that:

1) a high degree of development of the ability to analyze conflict phenomena, events, and situations among respondents:
   a) experimental group - $\overline{x}$ = 85.4% (that is, in the majority)
   b) control group - $\overline{x}$ = 55.2% (that is, slightly more than half).

The difference in indicators is 30.2%, that is, approximately 1/3 more respondents in the experimental group than respondents in the control group - have a high degree of development of this skill.

    2) the average degree of development among respondents:

        a) experimental group - $\overline{x}$ = 14.5%;

        b) control group - $\overline{x}$ = 45.2%.

That is, the difference is 30.6%. Approximately 1/3 more respondents in the control group than respondents in the experimental group - have an average degree of development of the ability to analyze conflict phenomena, events, and situations.

Thus, approximately 1/3 more respondents in the experimental group have higher indicators in the ability to analyze conflict phenomena, events, and situations, compared with respondents in the control group.

According to the degree of development, the respondents have the ability to analyze the reasons for the emergence and deployment of conflict interaction (Table 2).

TABLE 2
THE DEGREE OF DEVELOPMENT OF THE RESPONDENTS' ABILITY TO ANALYZE THE CAUSES OF THE EMERGENCE AND DEPLOYMENT OF CONFLICT INTERACTION

	SSR n= 48 (y %)					REASC n=48 (y %)					REASC n=10 (y %)				
Groups	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	0	3,3	16,7	0	0	6,3	77,1	16,7	0	0	6,3	81,3	12,4
Control	0	0	22,9	64,6	12,4	0	0	37,5	58,3	4,2	0	0	39,6	47,9	12,5

It was found that all respondents avoided ratings "1" and "2". The respondents from the experimental group have a higher degree of formation of the ability to analyze the causes of the emergence and development of conflict interaction than the respondents from the control group.

The arithmetic mean indicators $\overline{(x)}$ of the degree of development of the ability to analyze the causes of the emergence and deployment of conflict interaction are as follows:

    1) a very high degree of development among respondents: a) experimental group - $\overline{x}$ = 15.3%; b) control group - $\overline{x}$ = 9.7%.

The difference is 5.6%.

    2) a high degree of development among respondents: a) experimental group - $\overline{x}$ = 80.6%; b) control group - $\overline{x}$ = 56.9%.

The difference is 23.7%. It was found that in the experimental group more respondents than in the control group have a high degree of development of this skill.

    3) the average degree of development among the respondents: a) experimental group $\overline{x}$ = 6.3%: b) control group - $\overline{x}$ = 33.3%.

The difference is - 27.1%. Approximately ¼ more respondents in the control group than in the experimental group have an average degree of development of this skill.

Thus, the indices of the stage of development of the ability to analyze the causes of the emergence and deployment of conflict interaction vary from medium to very high, however, the majority of the respondents in the experimental group and the control group have developed this skill at a high level.

According to the degree of development, the respondents can determine the stages of the course of the conflict (Table 3).

TABLE 3
THE DEGREE OF DEVELOPMENT OF THE RESPONDENTS' ABILITY TO DETERMINE THE STAGES OF THE COURSE OF THE CONFLICT

Groups	SSR n= 48 (у %)					REASC n=48 (у %)					REASC n=10 (у %)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	0	6,2	93,8	0	0	0	8,3	91,7	0	0	0	8,3	91,7
Control	0	0	0	10,4	89,6	0	0	0	6,2	93,8	0	0	0	22,5	87,5

It was found that the majority of the respondents in the experimental group and the control group developed this skill mainly at a very high level, which indicates a good theoretical and practical training of these students.

At the level of development, the respondents can contribute to a constructive resolution of the conflict (Table 4).

TABLE 4
DEGREE OF THE RESPONDENTS' DEVELOPMENT OF THE ABILITY TO CONTRIBUTE TO A CONSTRUCTIVE RESOLUTION OF THE CONFLICT

Groups	SSR n= 48 (у %)					REASC n=48 (у %)					REASC n=10 (у %)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	20,8	79,2	0	0	0	31,3	68,8	0	0	0	22,9	77,1	0
Control	0	0	41,7	58,3	0	0	0	45,8	54,2	0	0	0	47,9	52,1	0

It was found that all respondents avoided the ratings "1", "2", and "5". The arithmetic mean indicators $(\overline{x})$ of the degree of development of the ability to contribute to a constructive settlement of the conflict are as follows:

1) a high degree of development among respondents:
  a) experimental group - $\overline{x}$ = 75%;
  b) control group - $\overline{x}$ = 54.9%.

The difference is 20.1%. That is, approximately 1/5 more respondents in the experimental group than in the control group have a high degree of development of this skill.

2) the average degree of development among respondents:
  a) experimental group - $\overline{x}$ = 25%:
  b) control group - $\overline{x}$ = 45.1%.

The difference is 20.1%. Approximately 1/5 more respondents in the control group than in the experimental group have an average degree of development of this skill.

Thus, the indicators of a high level of development of the ability to contribute to a constructive settlement of the conflict among students of the experimental group are higher than among students of the control group.

According to the degree of development, the respondents can help the conflicting parties to invent a way out of the "dead end" (Table 5).

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TABLE 5
**DEGREE OF THE RESPONDENTS' DEVELOPMENT OF THE ABILITY TO HELP
CONFLICTING PARTIES TO INVENT A WAY OUT OF THE "IMPASSE"**

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	SSR n= 48 (y %)					REASC n=48 (y %)					REASC n=10 (y %)				
Groups	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	8,3	91,7	0	0	0	10,4	89,6	0	0	0	12,5	87,5	0
Control	0	0	47,9	52,1	0	0	0	45,8	54,2	0	0	0	50	50	0

It was found that all respondents avoided the ratings "1", "2", and "5". The arithmetic mean indicators $(\overline{x})$ of the degree of development of the ability to help conflicting parties to invent a way out of the "dead end" are as follows:
1) a high degree of development among respondents:
    a) experimental group - $\overline{x}$ = 89.6%;
    b) control group - $\overline{x}$ = 52.1%.

The difference is 37.5%. That is, 1/3 more respondents in the experimental group have a high degree of development of this skill in comparison with the indicators of respondents in the control group.
2) the average degree of development among respondents:
    a) experimental group $\overline{x}$ = 10.4%:
    b) control group - $\overline{x}$ = 47.9%.

The difference is 37.5%. And vice versa, more than 1/3 of the respondents in the control group have an average degree of development of this skill in comparison with the experimental group.

Thus, the indicators of the degree of development in the respondents of the experimental group are the ability to help the conflicting parties to invent a way out of the "dead end", which are prophetic in comparison with the indicators of the respondents in the control group.

By the stage of development, the respondents can foresee the directions of further development of the conflict and its possible consequences (Table 6).

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TABLE 6
**THE DEGREE OF DEVELOPMENT OF THE RESPONDENTS' ABILITY TO FORESEE THE
DIRECTIONS OF FURTHER DEVELOPMENT OF THE CONFLICT AND ITS
POSSIBLE CONSEQUENCES**

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	SSR n= 48 (y %)					REASC n=48 (y %)					REASC n=10 (y %)				
Groups	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	39,6	60,4	0	0	0	41,7	58,3	0	0	0	43,8	56,2	0
Control	0	0	60,4	39,6	0	0	0	56,3	43,8	0	0	0	64,6	35,4	0

It was found that all respondents avoided the ratings "1", "2", and "5". Arithmetic means indicators $(\overline{x})$ of the degree of development of the ability to foresee the directions of further development of the conflict and its possible consequences:
1) a high degree of development among respondents:
    a) experimental group - $\overline{x}$ = 58.3%;
    b) control group - $\overline{x}$ = 39.6%.

The difference is 18.7%. That is, the respondents in the experimental group have a high degree of development of this skill by about 1/5 more compared to the indicators of the respondents in the control group.

2) the average degree of development among respondents:
    a) experimental group $\overline{x} = 41.7\%$:
    b) control group - $\overline{x} = 60.4\%$.

The difference is 18.7%. And vice versa, about 1/3 more of the respondents in the control group have an average degree of development of this skill in comparison with the respondents in the experimental group.

Thus, the indicators of the degree of development of the respondents in the experimental group, the ability to foresee the directions of further development of the conflict, and its possible consequences, are prophetic in comparison with the indicators of the respondents in the control group.

At the stage of development, the respondents can take a neutral position during the settlement of conflict interaction consequences (Table 7).

TABLE 7
THE DEGREE OF DEVELOPMENT OF THE RESPONDENTS' ABILITY TO TAKE A NEUTRAL POSITION DURING THE SETTLEMENT OF CONFLICT INTERACTION

Groups	SSR n= 48 (y %)					REASC n=48 (y %)					REASC n=10 (y %)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Experimental	0	0	47,9	52,1	0	0	0	50	50	0	0	0	58,3	41,7	0
Control	0	0	62,5	37,5	0	0	0	68,7	31,3	0	0	0	64,6	35,4	0

It was found that all respondents avoided the ratings "1", "2", and "5". Arithmetic mean indicators $(\overline{x})$ of the degree of development of the ability to take a neutral position during the settlement of conflict interaction:
1) a high degree of development among respondents:
    a) experimental group - $\overline{x} = 47.9\%$;
    b) control group - $\overline{x} = 34.7\%$.

The difference is 13.2%.
2) the average degree of development among respondents:
    a) experimental group $\overline{x} = 52.1\%$:
    b) control group - $\overline{x} = 65.2\%$.

The difference is 13.1%. So, the majority of respondents have an average degree of ability to take a neutral position during the settlement of conflict interaction. This skill develops for a rather long time and depends on the volitional regulation of the personality. Therefore, the respondents' ability to take a neutral position during the settlement of conflict interaction mainly has an average degree of development.

Thus, scientific research has indicated that the traditionally heuristic-analytical type of teaching is more effective than the traditional type. This invented its confirmation in the results of experts' assessment of the degree of development of professionally important skills in the majority of the respondents in the experimental group.

After studying the discipline "Psychology of Conflict", psychology students (who were trained in the traditionally heuristic-analytical type of training) were asked to answer the questions of an anonymous questionnaire: "Advantages and disadvantages of the traditionally heuristic-analytical type of education." The options for the answers were – "yes", "no", and " I find it difficult to answer."

Thus, the respondents of the experimental group are fully convinced that thanks to the traditionally heuristic-analytical type of training:
1) increased self-confidence and personal potential;
2) the team of group rallied;
3) the benevolent psychological microclimate in the group has become stronger;
4) intuition, thinking, and imagination was activated;

5) there was an opportunity to test oneself as a psychologist;
6) there was an awareness of the need to deepen their knowledge;
7) it became possible to identify, process, and streamline the system of patterns of development of a conflict situation;
8) the rise of the level of assimilation of educational material.

For some questions, there are respondents from the experimental group about the advantages of the traditionally heuristic-analytical type of training did not arise differences in answers. So, in their opinion, the advantages of traditionally heuristic-analytical training are that:

1) there was an internal motivation to find ways to resolve the conflict - this was indicated by 97.9% of respondents (2.1% - found it difficult to answer)
2) it allows to adapt to the conditions of activity and foresee its results - this was indicated by 97.9% of respondents (2.1% - found it difficult to answer)
3) it allows to predict your intellectual and practical activities - this was indicated by 97.9% of respondents (2.1% - found it difficult to answer)

The respondents of the experimental group also noted that the traditionally heuristic-analytical type of learning prompted them to:

1) a comprehensive analysis of the conflict - this was indicated by 100% of the respondents;
2) the use of non-standard and creative approaches to resolving certain conflicts - this was indicated by 100% of the respondents;
3) the use of innovative methods and techniques of productive cognitive activity - this was indicated by 100% of the respondents;
4) a creative approach when choosing certain paths or psychotechnologies of certain conflicts - this was indicated by 100% of the respondents;
5) the manifestation of independence when deciding on the choice of one or another psychotechnology - this was indicated by 100% of the respondents;
6) manifestation of initiative in solving certain educational problems - this was indicated by 100% of the respondents;
7) generating new ideas on ways to resolve a conflict situation - this was indicated by 100% of respondents;
8) making well-grounded and balanced decisions with their subsequent logical verification - this was indicated by 97.9% of respondents (2.1% - found it difficult to answer)
9) development and formation of certain professionally important ones:
   a) qualities - this was indicated by 100% of the respondents;
   b) skills - this was indicated by 100% of the respondents;
   c) skills - this was indicated by 97.9% of the respondents (2.1% - found it difficult to answer).

In the general context, a traditionally heuristic-analytical type of training was introduced, according to the respondents, it turned out to be quite effective and creative. However, according to the psychology students of the experimental group, there are certain disadvantages of this type of education. Among such shortcomings, respondents indicated:

1) it is necessary to spend more time preparing for practical exercises - this was indicated by 75% of respondents (25% - found it difficult to answer)
2) traditionally heuristic-analytical training cannot completely replace traditional training - this was indicated by 28.7% of respondents (81.3% - did not agree with this statement)
3) the effectiveness of the traditionally heuristic-analytical type of training depends on the level of motivation of students - this was indicated by 100% of respondents;
4) does not guarantee absolute success in solving educational problems - this was indicated by 31.3% of respondents (54.2 - did not agree with this statement; 14.5 - found it difficult to answer)
5) when solving certain educational problems, there are a lot of options for solutions regarding forms, methods, techniques, and technologies for solving conflict situations, the choice of

which turns out to be quite difficult - this was indicated by 29.2% of respondents (66.7% - did not agree with this statement; 4.1% - found it difficult to answer)

6) requires a sufficiently high level of creativity, basic knowledge, skills, and experience - as indicated by 91.7% of respondents (8.3% - found it difficult to answer).

Thus, the traditionally introduced heuristic-analytical type of training has shown its effectiveness and efficiency, since it is aimed at the comprehensive development and formation of conflictological competence among applicants for higher education.

Discussing the results of the study, it is important to note that analytical learning assumes that the applicant when solving educational problems, must structure the acquisition of data, form and test hypotheses, invent certain patterns in the subject of analysis, and draw informed conclusions. Thus, the student, analyzing certain factual data, invents an objective truth, a certain meaning underlying the phenomenon, event, situation, etc.

The introduction of elements of analytical training was described by L.A. Kosolapova. In her dissertation "Experimental and analytical teaching of students to pedagogy" (2010) she substantively revealed the models of experimental and analytical teaching in pedagogy, methodology (a generalization of the method), the process of developing the subject position (student activity at each stage of activity from goal setting to the analysis of results), etc. However, scientists have not covered the main provisions of traditionally heuristic-analytical learning.

In comparison with the studies (Kosolapova, 2010; Kryshtanovich et al., 2021), the scientific and theoretical provisions of the traditional heuristic-analytical type of teaching were substantiated and understood as a type of teaching that combines cognitive, creative, and analytical activities. applicants for higher education, i.e. reproductive and productive education.

Traditionally, the heuristic teaching method is quite popular today, for example, in the article by Nordlöf, Norström, Höst, (2021), this teaching method is proposed for teaching technical specialties. But in the study of these authors, only the advantages and theoretical foundations of building a schedule and a learning process with this type are given, without using the practical aspects of the application. Our study provides experimental evidence for the benefits of using this teaching method.

CONCLUSIONS

As a result of the experimental study, using the experimental group in which the traditional heuristic-analytical type of training was used, and the control group, in which the traditional type of training was used, it can be concluded that as a result of mathematical-statistical calculations, the conventional heuristic-analytical type learning is more effective

The results of scientific research allow us to draw the following conclusions:

1. Traditional-heuristic-analytical training is a type of training that combines cognitive, creative, and analytical activities of applicants for higher education, that is, reproductive and productive learning. This type of training has a specific goal and objectives and is based on certain principles and specific implementation conditions.

2. Scientific research has indicated that the traditionally heuristic-analytical type of teaching is more effective than the traditional type. This has invented its confirmation in the results of assessments by experts of the degree of development of professionally important skills. It was stated that the majority of the respondents in the experimental group must have a high degree of development of professionally important skills, while the majority of the respondents in the control group they have an average level of development.

3. Traditionally, heuristic-analytical training has a number of such advantages, namely:

   3.1. allows the applicant for higher education: a) to generate new, unexpected options for ways to solve a problematic issue; b) look at the problem from different angles and at the ways of solving certain problems; c) establish the root cause of the problem and the relationship between the various causes of the problem, break the deadlock; d) invent many new,

unexpected, original ideas (assumptions) regarding a certain phenomenon, process or subject of research, and the like;

3.2. allows a specialist who has been trained in the traditionally heuristic-analytical type of training: a) painlessly adapt to changing conditions of life; b) determine the positive and negative sides of possible solutions, find weaknesses, calculate the possible risks and consequences of the decisions made; c) invent the most rational, constructive, informed decisions and make them; d) predict the possible consequences of certain activities (inaction) and reduce the risk of side effects from such activities (inaction), etc.;

3.3. provides multiple variable transitions from theory to practice, and vice versa - from practice to theory, thanks to the use of a variety of heuristic, analytical, psychodiagnostic methods and techniques.

RECOMMENDATIONS

For those educational institutions that plan to apply the heuristic-analytical type of training, it is recommended to conduct ongoing work with the teaching staff. This is due to the fact that this type of training requires building strong communication links between teacher and student. Accordingly, only a trusting and benevolent classroom atmosphere will encourage students to seek and research on their own.

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