

<https://doi.org/10.34142/23129387.2019.61.12>

UDC: 155.25+159.9.072

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**METACREATIVE ABILITIES: SCIENTIFIC  
APPROACHES AND EXPERIMENTAL INTROSPECTIVE  
RESEARCH METHODS**

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*Aim. The purpose of our study is based on the urgent need of nowadays in the complex psychological diagnosis of metacreative abilities, which requires the creation of a reliable, valid, standardized methodology for the psychological diagnosis of a given personal construct, which would be based on the modern scientific psychological model of the diagnosed phenomenon (structure, features, etc.)*

*Material and methods. As the methods and techniques of empirical research we use correlation analysis procedure by K. Pearson, questionnaires, interviews, method of expert evaluations. The empirical sample, which actually tests our proposed methodology for compliance with the basic psychometric criteria, includes the students of the first, third and fifth years of full-time studying of the Faculty of Physics and Mathematics, Faculty of Psychology, Economics and Management, Faculty of Technology, Elementary and Professional Education of the State higher educational institution «Donbass State Pedagogical University» (town Slovyansk), a total of 420 people aged between 18 and 30 years (specialization «Music», «Choreography», «Design and Fashion Design», «Basic Design», «Accounting and Taxation», «Management», «Psychology», «Mathematics», «Physics», «IT»).*

*Results. Our methodology is evaluated according to four testing criteria: standardization, norms, reliability and validity. They are the criteria that are used to demonstrate the scientific adequacy of using this technique to measure individual mental differences. Observing the predictive power, it should be noted that during the year between the first and second surveys of the members of our sample by this method, those who had the results above average demonstrated significant creative achievements (artistic creativity, writing of scientific works, the development of advanced technologies of training and work). Finally, assessing constructive validity, we note that this test correlates positively with other relatively valid procedures for measuring creativity*

(convergent validation), and there is also a negative correlation between the results of the given methodology and the tests that measure conceptually different personality qualities.

*Conclusions.* We have proposed an experimental and introspective technique «Metacreative Abilities» (EIMCA) which consists of two blocks – «Awareness in the field of creativity» and «Reflection in the field of creativity». Psychometric evaluation of our methodology was conducted using the criterion of standardization, normativity, reliability and validation with those to prove the scientific adequacy of the use of this technique for measuring the stated individual psychological differences.

**Keywords:** metacreativity, subject, activity, criteria, method, feature, structure, indicator.

### **Метакреативні здібності: наукові підходи та експериментально-інтроспективна методика дослідження**

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В ході нашого дослідження ми прагнемо запропонувати надійну та валідну стандартизовану методику психологічної діагностики метакреативних здібностей, яка спиралася б на сучасну наукову психологічну модель діагностованого явища, та відповідала критеріям нормативності, валідності та надійності. Вдалося встановити, що до структури метакреативних здібностей входять креативний компонент із його внутрішньою структурою та видовою своєрідністю, мотиваційно-когнітивний компонент, рефлексивно-перцептивний компонент, рефлексивно-регулятивний компонент. Нами запропонована та емпірично перевірена на відповідність основним психометричним критеріям експериментально-інтроспективна методика «Метакреативні здібності» (EIMCA) складається з двох блоків – «Обізнаність в сфері креативності» та «Рефлексія в сфері креативності» метою яких є визначення рівня орієнтації досліджуваного в такому психічному явищі як креативність людини в її процесах, видах та шляхах сприяння її повноцінному функціонуванню та визначення міри диференційованості самооцінки креативності, в якій проявляється схильність до деталізації в характеристиці власної креативності; визначення міри адекватності самооцінки креативності, в якій проявляється якість прогностичної функції по відношенню до власних креативних результатів; визначення рівня прояву схильності до планування креативного процесу; визначення міри прояву рефлексивних функцій у реалізації креативного процесу, за рахунок яких здійснюється їх моніторинг.

**Ключові слова:** *метакреативність, суб'єкт, діяльність, критерій, метод, особливість, структура, показник.*

**Introduction.** The problem of searching for and using an adequate research methodology has always been one of the most relevant in the field of social and behavioral science. In psychology, considered to be a field of scientific knowledge of the surrounding world and the place of a human in it, the problem of ability diagnostics has always been urgent, especially at the early stages of ontogenetic development of a personality. Taking the specifics of creativity as a general ability of a person with his or her internal psychodiagnostics complications into account, we observe a multistage progressive relevance of the outlined issue - the study of human metacreative abilities. Moving to the meta level, the complexity of functioning and realization of creative abilities in a constant mutual contact with other cognitive processes is in progress, at the same time the relevance of scientific psychological diagnostics of metacreative abilities is increasing as well.

**Aims.** The purpose of our study is based on the urgent need of nowadays in the complex psychological diagnosis of metacreative abilities, which requires the creation of a reliable, valid, standardized methodology for the psychological diagnosis of a given personal construct, which would be based on the modern scientific psychological model of the diagnosed phenomenon (structure, features, etc.) which creates analytical basis of our research. The methodology should combine the main advantages of the introspection method (according to the specifics of the phenomenon, which inherently acts as reflexive) and the experimental method and give an opportunity to diagnose a comprehensive set of essential features, including the subject of teaching and professional activity, which forms the basis of our research. An experimental component of our study is to test the proposed methodology for the psychological diagnosis of metacreative abilities using basic psychometric criteria.

**Methodology of Research.** As the methods and techniques of empirical research we use correlation analysis procedure by K. Pearson, questionnaires, interviews, method of expert evaluations.

The empirical sample, which actually tests our proposed methodology for compliance with the basic psychometric criteria, includes the students of the first, third and fifth years of full-time studying of the Faculty of Physics and Mathematics, Faculty of Psychology, Economics and Management, Faculty of Technology, Elementary and Professional Education of the State higher educational institution «Donbass State Pedagogical University» (town Sloviansk), a total of 420 people aged between 18 and 30 years (specialization «Music», «Choreography», «Design and Fashion Design», «Basic Design», «Accounting and Taxation», «Management», «Psychology», «Mathematics», «Physics», «IT»).

**Results.** Our methodology is evaluated according to four testing criteria: standardization, norms, reliability and validity. They are the criteria that are used to demonstrate the scientific adequacy of using this technique to measure individual mental differences.

In order to establish the degree of uniformity in understanding the test regarding quantitative and qualitative aspects, we conducted a survey, according to the results of which we can conclude that 95% of the respondents fully understood all the questions of the methodology, between the results of understanding the individual questions by means of content analysis and correlation analysis we established statistically reliable positive connection at the level of  $p \leq 0.05$ . Developing the grading scale by this method we took into account the percentage of the respondents which has relatively high and low points in relation to the general amount of the surveyed (based on the above choices selection). For example, in the case of relating certain indicators to the intervals of the scale, we took into account the absence of these results in at least 75% of the respondents. Accordingly, given scales are constructed according to the same principle with narrowing the intervals of probability.

The methodology has also demonstrated high reliability as indicators of which are the coefficient of test reliability, internal consistency, reliability of parallel forms, reliability of expert assessments. The retest reliability coefficient, which quantifies the consistency of the evaluation in our methodology, is equal to the linear correlation coefficient between the results of the same test at

an interval of one calendar year. So, the numerical expression of this coefficient in our case reaches 0.82 (for the most standardized tests the coefficient of test reliability is from 0.7 to 1). Dividing the test into two congruent parts to estimate the internal consistency coefficient, we selected questions by even and odd numbers, which allowed to obtain its numerical value (as an expression of statistically significant positive correlation at  $p \leq 0.05$ ). That is, we can estimate the internal consistency of the methodology proposed. The author also determined and calculated the coefficient of reliability of parallel forms, which is the result of the correlation of the joint (consisting of similar questions) variants of the methodology. In the given case, the positive correlation between the two variants of the technique is at a statistically significant level.

In psychology it is possible to distinguish meaningful, current, predictive and constructive validity of the test. Analyzing the aspect of the substantive validity of the present technique, it should be noted that in the scientific literature available, the most specialists provide the data on the content of the creative activity of a person similar to the proposed one, especially in the aspect of person's abilities. Defining the current validity, we note that we obtained a significant positive correlation at a statistically significant level between the results of our methodology and other criteria (the results of the evaluation of the creative achievements of the interviewed teachers, psychologists, the management of structural units and administration of the institution). Observing the predictive power, it should be noted that during the year between the first and second surveys of the members of our sample by this method, those who had the results above average demonstrated significant creative achievements (artistic creativity, writing of scientific works, the development of advanced technologies of training and work). Finally, assessing constructive validity, we note that this test correlates positively with other relatively valid procedures for measuring creativity (convergent validation), and there is also a negative correlation between the results of the given methodology and the tests that measure conceptually different personality qualities.

**Discussion.** The concept of creativity in the semantic aspect is synonymous with the definition of «creative ability», which in its psychological and linguistic sense is derived from such important general scientific, and not only psychological concepts as «creativity» and «ability». As for the psychological content of these concepts, which we are mainly interested in, it has undergone some modifications over the past few decades.

In the modern scientific psychological sense, creativity comes first of all as: «... the ability to generate new ideas, decisions, methods, theories, in general, any new products of activity» (Sventsitskii, 2008). Thus, creativity can currently be seen as motivated ability to any other innovative activity. On the other hand, there are attempts to consider creativity as «... the level of creativity, which are manifested in thinking, communication, certain activities and which constitute a relatively stable characteristic of personality» (Stepanov, 2006). Thus, the motivated ability to innovate, which is determined by the same set of nonlinear, multilevel personal characteristics of the creator himself. The inability to take creativity as a purely intellectual characteristics and present creativity as a specific function and a variety and derivative of intellect comes first. Therefore, in the modern sense, creativity is increasingly thought to be regarded as «... non-relating to the intellect function of an integral personality that depends on the complex of its psychological characteristics» (Petrovskiy, Jaroshevskiy, 1990).

S.D. Maksymenko observes creativity as one of the principles of constructing a genetic modeling method of personality research. He states, that «... the personality itself is the result of this identity and the product of creativity. And the need, embodied in it, has a great creative potential». The author points out that «... creativity is a deep, primordial and absolutely natural sign of a personality - it is the highest form of activity that creates and leaves a mark embodied. On the other hand, creativity means the desire to find one's inner world» (Maksymenko, 2006).

M.M. Kashapov considers abnotiveness as an important psychological characteristic of the teacher's creative thinking, which allows him to develop students' creativity – the complex ability of a

lecturer (teacher) to adequately perceive, comprehend, understand and accept the creative student, the ability to notice a gifted personality and give support in developing his or her creative potential (Kashapov, 2013). According to the author, the structure of abnotiveness includes, in particular, the creativity of a lecturer (teacher), the motivational-cognitive component of abnotiveness and the reflexive-perceptual abilities (ability to study the student, express understanding, sympathy for him, the ability to immerse into student's individual surrounding) (Kashapov, 2013). T.I. Dotsevich based on the content and structure of the concept abnotiveness (by M.M. Kashapov), examines the concept metacreativity as «... the highest form of creativity, which includes awareness according to creative process peculiarities, its reflection and expresses in a high level of self-regulation» (Dotsevich, 2016).

As we can see, in order to increase the efficiency and effectiveness of cognitive psychic processes, a person tries to rethink, modify, restructure his cognitive and mnemonic experience, and uses reflection. Analogically, in the case of solving a creative issue or problem, a person dives into the state of subjective problematic, characterized by a high degree of uncertainty and subjective freedom. At the same time, becoming a subject of the creative process, the person understands, that resolving this problem can be found only through his or her own activity. In this case, the reflexive functions of the subject's mentality contribute to the activation and release of his creative potential – creativity at the same time transferring it into a meta-level, transforming it into metacreativity (abnotiveness), significantly increasing the efficiency of the creative process and saving the energy of the subject's creative process.

According to S.O. Kulakov and A.V. Votrin, reflection can be seen as an important criterion for psychological maturity, so when it is under-formed as a result of adverse life circumstances, there may be a need for psychotherapeutic intervention. The authors note that metacognitive processes should be considered in all areas of psychotherapy without any exception, and that reflexive diagnostic

and psychotechnics should be included at all stages of integrative psychotherapy (Kulakov, Votrin, 2015).

**Conclusion and future implications.** According to the results of the study, we can draw the following conclusions: 1) metacreative abilities combine their own creative component with its internal structure and the identity of a kind, motivational-cognitive component, reflexive-perceptive component, reflexive-regulative component, all of the mentioned above build general features of the psychological structure of this formation; 2) we have proposed an experimental and introspective technique «Metacreative Abilities» ( EIMCA ) which consists of two blocks – «Awareness in the field of creativity» and «Reflection in the field of creativity» the purpose of which is to determine the level of orientation of the researched subject in such a psychic phenomenon as creativity, its types and ways of influencing the proper functioning and determining the degree of measuring self-creativity differentiation, which manifests the tendency to detail the characterization of own creativity; determining the degree of adequacy of self-esteem in creativity, in which the quality of the prognostic function in relation to one's own creative results is manifested; determining the level of inclination to plan a creative process; determining the degree of reflexive functions in the realization of the creative process, through which their monitoring is carried out; 3) psychometric evaluation of our methodology was conducted using the criterion of standardization, normativity, reliability and validation with those to prove the scientific adequacy of the use of this technique for measuring the stated individual psychological differences. Furthermore, it is promising to clarify the place and role of metacreative abilities in the structure of individual and typological features of personality functioning in different spheres and at different levels of a professional activity.

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## APPENDIX

Experimental and introspective methodology «Metacreative abilities» (EIMCA) consists of two blocks - the first block «Creativity Awareness» (technique №1) and the second block «Reflection in the field of creativity» (technique № 2-6). The maximum score for this technique is 47 points.

The purpose of the first block of EIMCA «Awareness in the field of creativity» is to determine the level of orientation studied in such a mental phenomenon as creativity of human in his processes, types and ways of promoting the full functioning (maximum - 12 points). This block includes technique № 1 with the same name, «Creativity Awareness». The technique involves a thorough analysis of the detailed answer to the question: «What do you know about human creativity?». The content of the instruction includes an indication of the time limit for the task (usually up to 15 minutes). Time limitation is appropriate because it allows to consider the quality of the task completion of the surveyed who have repeatedly had the opportunity to reflect the question specified in the instructions and therefore

ready to cope with the task in a limited time at a qualitatively and quantitatively high level.

Assessment of the quality of task performance by the method №1  
(maximum points - 12)

№	Criteria	Performance criteria	Points
1	The quality of creativity definition	Absence of definition	0
		Indirect definition, or definition through: identification with one type or one of the characteristics of creativity (for example, «creativity is when I do something», «creativity is when I am not like everyone», «creativity is when a person draws or writes poems»); identification with a process-like phenomenon or process (for example, «creativity is when I have reached my goal», «creativity is when certain innovations take place due to my effort»)	1
		A definition that is largely or completely consistent with one of the common ones in science	2
2	Completeness of information about the techniques and the means of the creative process	Absence of information of techniques and means	0
		Information about only one of the categories and means of the creative process (only the presence of a certain creative concept, or only the use of certain means of the creative process, or only the use of certain semantic strategies)	1
		Information on the various categories, techniques and means for developing the creative process	2
3	Completeness of the information about types of creativity	Absence of information on types of creativity	0
		Availability of information about one of the classifications of creativity that is common in the science or practice (for example, by product characteristic of a creative process)	1
		Availability of information about multiple classifications of creativity (for example, by product characteristic of a creative process or by type of human mental activity during a creative process)	2

Continuation of Table

4	Determination of the role of emotional and value sphere of the creative process	Not defined role	0
		Defined in general terms or only partially mentioned, or only emphasized by its significance and influence	1
		A clear and detailed argumentation of such a role in the creative process is given	2
5	Defining and detailing the characteristics of the selected strategies and techniques for realization of the creative process	Completely absent	0
		In general terms or partially mentioned	1
		Fully present, presented clearly, fully and consistently	2
6	Defining and detailing the stages (stages) of the creative process	Completely absent	0
		Mentioned but do not have a clear name or function	1
		Listed in a specific logical sequence, their role in the structure of the creative process is defined	2

The purpose of the second block of EIMCA «Reflection in the field of creativity» is to determine the degree of differentiation of creativity self-esteem, in which the tendency to detail the characteristic of one's creativity is occurring (technique №2, technique №3); determination of the measurement of self-esteem creativity adequacy, in which the quality of the prognostic function in relation to one's own creative results is occurring (technique №4); determination of the level of inclination to plan the creative process (technique №5); determination of the degree of reflexive functions in the implementation of the creative process, through which their monitoring is performed (technique №6).

The second block of EIMC «Creative Reflection» includes the techniques №2-6 (maximum score is 35 points). Techniques № 2-3 aim at exploring the differentiation of creativity self-esteem. Technique № 2 aims at determining the tendency to detail the characterization of one's own creativity. It considers an empirical analysis of the detailed answer to the question: «What can you say about your own creativity? Are you satisfied with the peculiarities of your own creativity and the progress of your creative process?». The instruction to this technique, as well as to a

technique number 1, also supposes a time limit (up to 15 minutes) for completing the task because of the above reasons.

Assessment of the level of quality of task performance by technique № 2 (maximum - 5 points)

The level of specification in the creativity self-esteem	Indicators characteristics of a certain level	Points
Low	General evaluative judgments (e.g., «My creativity is fairly well developed», «I have insufficient creativity»)	1
Below average	General judgments of a judgmental nature with particular features of detail (for example, «I am intrinsic to automaticity, pattern of judgment, so the products of my activity are no different among others»)	2
Average	The presence of judgments about one's own creativity with a somewhat detailed but unsystematic detail, or such detail that does not fully reflect the features of one's own creativity	3
Above average	Complete, detailed and fully detailed characteristics of the features and procedural indicators of their creativity	4
High	Includes characteristics inherent to the previous level of self-creativity assessment and reflecting the refinement of individual features of one's own creativity (in detailing developmental character)	5

Technique №3 aims at determining the ability to detail the characterization of own creativity and built as a questionnaire consisting of five questions, each of which offers six possible answers.

Answers № 1-3 enable the interviewee to detail the features of his or her own creativity in the indicated direction of the question. Answers № 4-5 are variants of a person's desire to avoid answering questions directly. Answer № 6 in each of the questions enables the respondent to go beyond the questionnaire and demonstrate an increased ability to detail his or her own creativity to a greater extent than it is suggested in Answer № 1-3.

Before the survey, the respondent is offered the following instructions: "You are invited to answer five questions that provide

information about features of self-assessing own creativity. You should choose one of five suggested answers. The sixth answer in each question can be selected and completed as you wish. If neither of the offered answers is full for your performance and you feel the urgent need to answer the questions in more details adding your own considerations. The time of the task - up to 10 minutes.

Question № 1. Your creative process is more effective when : 1) information is presented in a sign form; 2) information is presented in a figurative form; 3) information is submitted in a form that combines several possible representations (for example, both sign and image); 4) it is difficult to answer; 5) it can be in various forms; 6) own answer.

Question № 2. It is easier for you to dive into the creative process when : 1) the creative concept is presented in a visual form (through a visual channel); 2) the creative concept is presented in an auditory form (through an audio channel); 3) information is presented in a form that combines the use of several possible sensory organs (multiple sensory channels); 4) it is difficult to answer; 5) it can be in various forms; 6) own answer.

Question № 3. In order to adjust better to the creative process, you : 1) try to start it several times in a row, using the same source of information; 2) try to make it more understandable by rethinking and structuring the source of information; 3) both answers number 1 and the answer number 2 are possible; 4) it is difficult to answer; 5) it can be in various forms; 6) own answer.

Question № 4. If you need to do something new or do something innovative, are you contemplating about how to do it better (are you contemplating about what should be done to improve the effectiveness of the result)? 1) I am contemplating, but more often just repeat the usual; 2) I am contemplating, but I usually use imaginative associations; 3) I am contemplating and determining the strategy of the creative process; 4) it is difficult to answer; 5) options can be different; 6) own answer.

Question № 5. What exactly contributes to the successful flow of your creative process? 1) the existence of a creative goal; 2) Your motivation, awareness of the need to solve a particular problem based on available resources and circumstances; 3) both the answer number 1 and the answer number 2 are possible; 4) it is difficult to answer; 5) It can be different options; 6) own answer.

The evaluation of the answers is as follows. If the respondent chooses the answer № 1-3, he or she receives one point for each question. If the researcher chooses answer № 4-5 for the answer, he gets 0 points for each

question. If the researcher, in addition to the chosen answer option № 1, № 2 or № 3, chooses the answer № 6, then he gets from one to two points, depending on the degree of the content of his own option of his answer regarding the details in the characteristics of his own creative process. The maximum number of points that the interviewee can receive by this technique is 15.

Technique № 2-3 give an opportunity to quantify the level of differentiation of self-esteem of creativity with the maximum number of points - 20.

Technique № 4 is aimed at investigating the adequacy of creativity self-esteem – the quality of predicting the level of development of one's own verbal and non-verbal creativity in a given experimental situation. It includes two stages - A and B (the maximum number of points that can be obtained by the interviewee according to this technique - 10).

Stage A. In order to identify the tendency to overestimate or underestimate the prognosis of the performance of one's own creativity experimental material of the shortened variant of E. Torrens's imaging test is used. It is appropriate for respondents from 5 to 60 years.

The respondent is offered ten images, each characterized by a high degree of uncertainty, and is encouraged to work it out further and name it in such a way that embodies a completed author's idea. This test takes about 10 minutes to complete. It is unacceptable to accelerate the pace of the task artificially, since this condition automatically reduces the reliability and validity of this technique. The person follows the instructions: «You are asked to test your ability to objectively evaluate your non-verbal creative potential. Look closely at the suggested drawings. Try to predict what total number of images you will be able to complete and give them a title that would summarize your original design in a limited time. Each drawing should be completed and named on the first attempt. Note the quality of your forecast».

The tendency for overestimation in the prediction of the results of non-verbal creativity is fixed when the respondent has completed and named the number of images, which is less than the number of named images, which he expected to get in his prediction. This tendency may be the evidence of inadequately overestimated self-esteem of one's own non-verbal creative ability (0 points).

The tendency for underestimation in the prediction of the results of non-verbal creativity is fixed when the respondent has completed and named the number of images, which is bigger than the number of named images, which he expected to find in his prediction. This tendency may be a

sign of inadequately lowered self-esteem of one's own non-verbal creative ability (0 points).

The tendency to objective assessment of predicted results recorded in nonverbal creativity is fixed when the respondent has completed and named the number of images that matches the number of images he predicted in his prognosis. This tendency may be the evidence of an adequate self-assessment of one's own non-verbal creative ability (5 points).

Step B. To identify the tendency towards overestimation or underestimation in the prognosis of the own verbal creativity performance the test of creativity by S. Mednick (RAT in the modification RMK by T.V. Galkina, L.G. Husnutdinova) is used. This test was first proposed by S. Mednik and intended to diagnose creativity according to the principle of distant verbal associations. The respondent is offered 20 triads - three words, which need to be matched with another word in such a way that it is combined with each of the proposed words (constituted a phrase with some meaning). It is emphasized that words can be changed grammatically, use the necessary conjunctions to increase the originality and brightness of the phrases formed and to produce as many responses as possible. Test completion time is about 20 minutes.

The respondent is instructed as follows: «You are asked to test your ability to objectively evaluate your verbal creative potential. Look closely at the three words suggested. Try to predict the total number of words that you can choose so that they match each of the three proposed words in a set of three words (a certain phrase) for a limited time. Take note of the quality of your prognosis». The experiment procedure involves checking the quality (meaningfulness) of the selected word-associative reactions for each of the three words suggested. The inability to establish the existence of a certain sense at least once prevents taking such associations as effective and reduces the objective number of associations.

The tendency towards overestimation in the prognosis results in recording verbal creativity when the respondent objectively proposed a number of associations of words that is less than the number of possible associations of words, which he predicted in his prognosis. This tendency may be the evidence of inadequately overestimated self-esteem of one's own creative abilities regarding verbal material (0 points).

The tendency to underestimate the prognosis results in verbal creativity is recorded when the respondent objectively proposed the number of word-associations that is bigger than the number of possible associations of words, which he predicted in his prognosis. This tendency may be the

evidence of an inadequately overestimated self-esteem of one's own creative abilities regarding verbal material (0 points).

The tendency to adequate assessment of the prognosis results in verbal creativity is recorded when the respondent objectively offered the number of words-associations that coincides with the number of possible associations of words, which he predicted in his prognosis. This tendency may be the evidence of an adequate self-assessment of one's own creative abilities regarding verbal material (5 points).

Technique №5 is aimed at researching the tendency to plan the creative process and its quality. Based on their own experience of performing the previous technique №4, and abstracting from the specifics of their own verbal or non-verbal creativity, the experimenter offers the respondent as to evaluate the quality of planning their own creative process as a whole. With this aim the respondent is suggested the following instructions: «You are offered to give consistent answers to a set of questions related to the peculiarities of previous technique tasks completion. Do not read the content of the following question until you answer the previous question».

Question №1. Have you thought before task completing how to fulfill the conditions you have been set? Yes or no?

Question №2. Have you preferred any imagery creative techniques? If so, which one?

Question №3. Have you used the techniques of meaningful processing the original information during the creative process? If so, which ones?

Question №4. Have you had a creative strategy that you mainly followed in the creative process? If so, which one?

Assessment of the level of quality of planning the creative process  
(maximum score is 5 points)

Level	Characteristics of level indicators	Points
High	<p>Answer № 1 is yes.</p> <p>Answer № 2 provides the information on the use of the creative techniques for figurative processing the material that is appropriate to its specificity.</p> <p>Answer № 3 provides information on the use of the creative techniques for semantic processing of the material that is adequate to its specificity.</p> <p>Answer №4 provides the information on the application of a particular creative strategy, which largely reflects the patterns of effectiveness of the creative process.</p>	5



Continuation of Table

Above average	<p>Answer № 1 is yes.</p> <p>Answer № 2-3 provides the information on the preferred use of one of the creative techniques of imaginative material processing and one of the creative techniques of semantic processing the material that is adequate to its specificity.</p> <p>Answer № 4 provides the information on the application of a particular creative strategy that does not fully reflect the patterns of effectiveness of the creative process.</p>	4
Average	<p>Answer № 1 is yes.</p> <p>Answer № 2-3 contains the information that only creative techniques of imaginative material processing or creative techniques of semantic processing of material that are adequate to its specificity were used.</p> <p>Answer № 4 indicates that there is no creative strategy, but the mechanisms of effectiveness of the creative process are, nevertheless, taken into account.</p>	3
Below average	<p>Answer № 1 is no.</p> <p>Answer № 2-3 contains the information that only creative techniques of imaginative material processing or creative techniques of semantic processing the material that are adequate to its specificity were used.</p> <p>Answer №4 indicates that there is no specific creative strategy, and only certain patterns of effectiveness of the creative process are taken into account.</p>	2
Low	<p>Answer № 1 is no.</p> <p>Answer № 2 is no.</p> <p>Answers № 3 - no.</p> <p>Answer № 4 indicates that there is no specific creative strategy and about the performance of activity without taking into account the regularities of the effectiveness of the creative process.</p>	1

Technique №6 is aimed at studying the level of reflexive functions performance in the creative process. The methodology base is in the self-report on the results of the tasks of both phases of techniques № 4. The respondent is given the following instructions: «You are invited to answer the following questions: What are the challenges you faced when

performing the tasks of the technique №4? Would you do similar tasks in an another way now? If so, why and how?»

The purpose of the self-report analysis of the respondent is to find out by the researcher the reflexive functions performance in the creative process, namely: the research function (fixation and reconstruction of complications); critical function (finding and understanding the cause of the complication); normative function (restructuring the previous norm of the action that led to the complication).

Assessment of the level of reflexive functions performance of the mentality during the creative process (maximum score - 5).

Level	Characteristics of level indicators	Points
Low	Fixation of the existing complication without its specification, elementary level of verbalization in formulating the features of the complication.	1
Below average	In the description there are signs of reconstruction of the existing complications, which are performed in the details of the description. However, some complications are only passively recorded.	2
Average	Fixation and reconstruction of all available complications that were deliberately identified by the respondent. In the description, there are indications of the attempts to identify the specific causes of these complications.	3
Above average	Fixation and reconstruction of all available complications that were deliberately identified by the respondent. The analysis details the causes of all available complications.	4
High	Fixation and reconstruction of all available complications, with the analysis of the cause of their occurrence. There are some considerations about how you should build your own creative process to avoid any complications.	5

*Оригінальний рукопис отриманий 22 травня 2019 року*

*Стаття прийнята до друку 6 червня 2019 року*