Psychological Particular Qualities of the Amplificationof Intellection in Students

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Abstract. This research paper demonstrated metacognitive forms ought to be considered as an integrator figure within the bound together structure of students' imaginative capacities. It can be expected that the improvement of students' metacognitive forms within the instructive handle guarantees the administration and determining of their mental and inventive exercises. Entering a metacognitive position permits understudies to overcome the challenges of their advancement and gives them the opportunity to oversee their claim mental resources. Through metacognition in learning, the establishments are laid for overcoming the challenges of their claim improvement, the sign of their cognitive asset. Based on this, it can be accepted that information of the variables of one's claim self-improvement ought to gotten to be portion of the proficient preparing of a pro of any profile. It permits the subject of instruction to improve his claim exosphere and adjust those convictions that are the result of lacking preparing and education.

Introduction

The activity and personal approaches, through the prism of which we are trying to consider the main problems of pedagogy and psychology of higher education, most dramatically collide in the field of creativity. Here, as through a magnifying glass, one can see the limitations of the activity approach, its important, but still auxiliary role in the analysis of the nature of the creative act and methods of stimulating it.

The main didactic problem facing the teacher in organizing the educational process at the university is teaching techniques and skills of creative activity, which presupposes the availability of special tools. Great opportunities in this regard are inherent in the humanitarian cycle of subjects of professional training of pedagogical university students, which, in terms of their content and structure, are aimed at the formation of a conceptual-figurative-practical structure of students' creative thinking.

Among the existing technologies and forms of training, problem-search, research and collective-group training technologies are the most productive in the development of students'

creative thinking. The wide and early application of the research activities of students carries great opportunities in the development of creative thinking. It provides training for creatively thinking specialists who have the skills of scientific activity, independent analysis of the possibilities of using the achievements of science and advanced experience, skills of practical participation in the work of scientific teams.

Methods of research

Thinking as a process of intellectual activity has a complex structure, depending on many factors, taking into account which, it is necessary to develop the creative component of intellectual abilities.

Individual achievements, including creative ones, are determined by the level of general intelligence, i.e. high intelligence is a prerequisite for creative achievement, but not sufficient; reaching the creative limit will depend on a number of other personality traits.

For the development of creative thinking, it is necessary, but not a sufficiently high intellectual development, a certain amount of knowledge, the level of intellectual abilities, hereditary and innate inclinations. Consequently, the focus of training on the development of intellectual abilities, an increase in the volume of knowledge is a necessary task for the teacher.

The study of creative thinking is a rather complex problem that involves solving the most important methodological issues of the nature of creativity, the sources of development of creative thinking, the relationship in this process of biological and social, objective and subjective, individual and social, etc. The complexity of the problem lies in the fact that the inner essence of the phenomenon is inaccessible to direct research. Therefore, despite the centuries-old history of study, creative thinking remains insufficiently researched.

Is it possible to teach creativity by "shaping" creative activity and get the necessary "increments at the pole of the subject"? The answer, as we have already said, can only be negative. It was found, for example, that "creativity" is not some special characteristic of cognitive processes, but is one of the most profound characteristics of person. The personality, however, cannot be "formed", but can only be educated. Education, in turn, cannot be anything other than the creation of conditions for the self-education of the individual. Creativity is the prerogative of a free personality capable of self-development. It is even more accurate to say that creativity is a way of "personal" existence, as opposed to impersonal action, which in its extremely "purified" form kills the person. But impersonal activity is nothing more than an abstraction opposing the personal principle only in a mental experiment. In normal, truly human conditions of life, these two principles mutually enrich each other and can only develop through each other. But in the interests of analysis, which necessarily coarsens and even "kills" reality,

dismembering it into parts, they can be singled out as opposite poles of human essence, which are the source of human development.

Such inconsistency and at the same time the interdependence of activity and personality are manifested with particular clarity when analyzing different aspects of creativity, different types of creative thinking. Taking into account the specifics of educational activity, which is the main object in our manual, we will mainly talk about cognitive activity and give examples from this area, but almost all conclusions, as the analysis of the literature shows, retain their significance for artistic creation.

One of the psychological factors that solve these problems is the presence of an individual's metacognitive skills and abilities.

In its most general form, metacognitive processes can be defined as involuntary or conscious efforts of varying degrees of generalization to organize and optimize cognitive activity. In other words, these are the procedures by which a person regulates his cognitive processes. At the same time, it is assumed that such regulation brings the achievement of the goals of activity closer and significantly facilitates this achievement.

Person's ability to regulate his own cognitive processes, including creative ones, can be considered as an important condition for his professional and personal development. In psychology, this ability is associated with the concept of "metacognition". Today there is a great deal of interest in the problem of metacognition in various areas of psychological knowledge. There are a number of psychological approaches to understanding the essence of metacognition. Despite the diversity of opinions, most authors include in the content of this phenomenon self-esteem and self-management of cognition.

This skill is certainly not innate. They are formed in the process of an individual's development with the help of special means and specially created conditions. If such special conditions are not created, the individual forms them independently and often inadequate to his abilities and natural inclinations. Identifying a set of metacognitive abilities and pedagogical technologies for their formation remains problematic.

We carried out a theoretical and experimental study of the role of metacognition in the organization of the creative process on the basis of a systemic methodology used to analyze the heterogeneity and diversity of the creative thought process, characterized in its intellectual, personal, and communicative aspects.

When solving problems, polynomial approximation algorithms are often used. In this case, a feasible solution is constructed, and the closer it to the optimal solution, the better it is. To explain the meaningful nature of solving problems of this type, certain theoretical ideas are

required. At one time they were proposed by gestalt psychologists. In accordance with them, any task "accessible to understanding" is in a resolved state, an integral structure of consciousness - a gestalt. Until a solution is found, it is an open "tense" system. It contains in its structure the conflict between the conditions and the goal, which does not allow the gestalt to become isolated. It is this circumstance that "forces" the resolver to move in a certain direction, trying to relieve tension and suggesting possible ways to resolve the conflict. Moreover, this whole structure has a pronounced functional character: the meaning of individual conditions or requirements - their "functions" in the structure of the task - become clear, only within the framework of the whole. The moment of the gestalt closure is the central point in the course of the thought process - insight. This is the moment of finding a solution, usually associated with vivid experiences.

The absence of cognitive schemes for solving problems of this type determines the strategy and tactics of their solution. In other words, to solve the problem, not a ready-made algorithm is used, but the internal resources and capabilities of the subjects, i.e. their knowledge of their own thought processes and how they can be used. Thus, it seems to us that much more differentiated schemes are required to explain the processes of solving such problems. They must take into account a number of circumstances, such as:

- ➢ need to combine expedient and spontaneous processes in the structure of the solution;
- ➢ specifics of the structure of tasks of this type;
- ➢ presence of a set of "right" and "wrong" answers; the possibility of violation of the problem conditions in the process of its solution.

The time and method for solving problems was not regulated. At the end of the work, the subject had to fill out a report on the work done. This approach also required special processing. From this point of view, any statement of the subject was considered as an element of the solution, i.e. its connection with functional meaning is assumed. The statements were grouped and then subjected to appropriate mathematical processing.

The evaluation of the research results was carried out according to the scheme, which took into account the variables characterizing the creative approach to solving problems and used by the subjects of metacognition, information about which was taken from the questionnaire attached to the methodology and free statements of students.

Initially, the data was grouped, as a result of which two homogeneous groups were distinguished:

- ➢ first group included 40 students with a high level of academic performance;
- ➢ second group included 10 people with a high level of academic performance and

50 people with a low level of academic performance.

Thus, the object of the study was clarified and its ordering was carried out into relatively homogeneous groups in terms of academic performance. It turned out that there is no direct connection between these characteristics and creativity.

Results

As result of the factor analysis of the results obtained, 6 factors characterizing the creative approach were distinguished in the first group of students, while in the second group - 8 such factors. Accordingly, the students of the second group are characterized by great differentiation, fragmentation of connections between indicators characterizing a creative approach to problem solving and metacognitive processes.

In the first group of subjects, which included only students with a high level of academic performance, a tendency towards the integration of these indicators was found. In turn, it was revealed that the crystallizing factor that determines the level of integration of these indicators is metacognition in their differentiation and integration structure, the reference educational and cognitive activity of students.

They formed the first factor, which included the following variables with high factor loadings: analytical approach, metacognitive knowledgemetacognitive activity, active attention, information seeking, idea generation and time control.

That is, the crystallizing factor includes the characteristics of metacognitive abilities.

It can be assumed that the development of students' metacognitive processes in educational activities ensures the management and prediction of their intellectual and creative activity. Consequently, entering a metacognitive position will allow students to overcome the difficulties of their development and manage their own resources.

Subsequent processing of the results of the empirical research showed that the connections between the creative component of solving problems by students and different levels of academic performance, as indicators of their differentiation and integration, are different.

During the research, significant differences were obtained in the formation of the characteristics of creative thinking. Groups of students with different levels of academic performance differ in terms of flexibility and development of creative thinking, i.e. precisely according to those characteristics that reflect the signs of the formation of the metacognitive component of creative thinking with higher indicators of the formation of their metacognition characteristics. It should be noted that students with above average performance differ from students with below average performance in terms of such indicators as flexibility of thinking.

Conclusion

It should be noted that considering this study as a pilot study, we obtained results indicating that metacognitive processes should be considered as an integrative factor in the unified structure of students' creative abilities. It can be assumed that the development of students' metacognitive processes in the educational process ensures the management and forecasting of their intellectual and creative activities. Entering a metacognitive position allows students to overcome the difficulties of their development and gives them the opportunity to manage their own intellectual resources.

Through metacognition in learning, the foundations are laid for overcoming the difficulties of their own development, the manifestation of their cognitive resource. Based on this, it can be assumed that knowledge of the factors of one's own self-improvement should become part of the professional training of a specialist of any profile. It allows the subject of education to enrich his own exosphere and correct those beliefs that are the result of inadequate training and education, which subsequently complicate the process of self-realization of the individual. Thus, metacognitive knowledge becomes a condition for personality self-development.

As a research perspective, we have identified the following tasks:

➢ clarification of the definition of metacognitive abilities as a factor and mechanism for the integration of intelligence and creativity;

➢ scientific substantiation of the metacognitive criterion of creativity;

➢ study of the dynamics of the degree of integration and differentiation of intelligence and creativity of students, depending on the level of development of their metacognition;

➢ expansion of the research sample and differentiation of respondents according to the criteria of academic performance, the level of development of creative abilities.

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