



THE ABILITIES, INTERESTS AND PROFESSIONAL DEVELOPMENT OF FUTURE ENGINEERS THE MAIN CAUSES OF AROUSAL

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Abstract: the article is devoted to the urgent problem of student interest and the formation of professional competence. Various approaches to the organization of the teaching of subjects are considered and tested. Attention is paid to the independent preparation of students based on their interest.

Key words: interest, education, arousal, competence, professional competence, development, profession, activity, quality, engineer, student, experience, practice.

Creative giftedness includes a very high level of creativity, intellectual development exceeding the average level, certain personal characteristics (low level of mental stress, low normativity of behavior, social courage, independence from the group, radicalism.). It is known that creative abilities are an obligatory component of students' giftedness, regardless of what area their abilities manifest themselves in. The peculiarities of motivation of cognitive activity largely depend on the type of giftedness [4]. A very high strength and stability of cognitive internal motives is characteristic for students with general intellectual giftedness, as well as for gifted students with specific academic abilities. We turn to definitions of various types of giftedness. For example, general intellectual. Students with this type of giftedness master the fundamental concepts, easily memorize and store information. Highly developed information processing abilities allow them to excel in many areas.

Academic giftedness manifests itself in the successful mastery of a particular academic subject and is considered more selective. Academic is divided into subspecies: mathematical, linguistic, giftedness in physics, chemistry, biology.

Creative. First of all, it should be noted that there is a dispute about whether it is worth distinguishing it as an independent species at all. Some believe that creativity is an integral part of any giftedness. So A.M. Matyushkin believes that every giftedness is creative: there is no creativity – there is no giftedness. Others defend the legitimacy of the existence of creative giftedness as a separate, independent species. Creative giftedness is the ability to produce, invent, put forward new ideas and hypotheses.

Leadership giftedness is seen as an exceptional ability to establish mature, constructive relationships with other people. Social giftedness acts as a prerequisite for high success in several areas. The concept of social giftedness covers a wide range of manifestations associated with the ease of establishment and high quality of interpersonal relationships. Relatively low indicators on the strength of internal cognitive motivation were obtained in a group of students with leadership giftedness. The key feature of practical giftedness of R. Stenberg calls the knowledge of their strengths and weaknesses and the ability to use this knowledge. He believes that a person may not realize his creative potential in two cases: 1) if he expresses ideas prematurely; 2) if he does not bring them up for discussion for too long

and then they become obvious, "obsolete". It should be noted that in this case, the author replaces the manifestation of creativity with its social acceptance and evaluation.

According to Sternberg, creative manifestations are determined by six main factors: 1) intelligence as an ability; 2) knowledge; 3) style of thinking; 4) individual traits; 5) motivation; 6) the external environment.

Intellectual ability is the main one. The following components of intelligence are especially important for creativity: 1) synthetic ability – a new vision of the problem, overcoming the boundaries of everyday consciousness; 2) analytical ability – identification of ideas worthy of further development; 3) practical ability – the ability to convince others of the value of the idea ("sale"). If an individual has too much analytical ability to the detriment of the other two, then he is a brilliant critic, but not a creator. Synthetic ability, not supported by analytical practice, generates a lot of new ideas, but not substantiated by research and useless. Practical ability without the other two can lead to the sale of "substandard", but vividly presented to the public ideas. The influence of knowledge can be both positive and negative: a person must imagine exactly what he is going to do. It is impossible to go beyond the field of possibilities and show creativity if you do not know the boundaries of this field. At the same time, too well-established knowledge can limit the researcher's horizons, deprive him of the opportunity to take a fresh look at the problem. Creativity requires independence of thinking from stereotypes and external influence. A creative person independently poses problems and solves them autonomously. Creativity implies, according to Sternberg, the ability to take reasonable risks, willingness to overcome obstacles, internal motivation, tolerance to uncertainty, willingness to resist the opinions of others. The manifestation of creativity is impossible if there is no creative environment. The individual components responsible for the creative process interact. The cumulative effect of their interaction is irreducible to the influence of any one of them. Motivation can compensate for the lack of a creative environment, and intelligence, interacting with motivation, significantly increases the level of creativity [1].

It should be noted that the most important task of correctional and developmental work with gifted students is the development of their creative abilities. The importance of this task is due to the following circumstances:

1. According to the literature, creativity is the most important component of all types of giftedness.
2. Adolescence is favorable for the development of creative academic abilities, therefore it is advisable to conduct developmental work with them.
3. Traditional schooling not only does not develop the creative abilities of children, but also often suppresses the manifestations of creativity of students. The program of developing work with gifted students should include psychological and pedagogical activities aimed at developing their creative abilities. Currently, there is enough convincing evidence that with special efforts on the part of teachers and the student himself, their creative abilities can be developed and strengthened, and, conversely, in the absence of attention to them, they wither. All the proposed methodological programs for the development of creative abilities can be combined into three groups:
 - 1) development of creative abilities by solving non-standard tasks;
 - 2) formation of environmental conditions conducive to the development of creative abilities;



3) implementation of a system approach, according to which a change in the state of one element of the system entails the transformation of other elements. From this point of view, the development of creativity is promoted by certain changes in personal characteristics, behavioral characteristics.

The first approach is the most traditional, its adherents have developed many methods, tasks, exercises that allow actualizing creative elements of thinking. In particular, M. Wertheimer's experiments on the development of productive thinking in schoolchildren were devoted to this. The completed programs for the development of creative thinking were developed almost simultaneously by American researchers E.P. Torrance and E. De Bono. The leading idea underlying the methodology of E.P. Torrens was the idea of overcoming externally imposed restrictions and standards of thinking. The main methodological means of the training developed by him are tasks, anagrams and psychohymnastic exercises. Recognizing the trainability of such an element of creativity as divergent thinking, E.P. Torrance formulated requirements for techniques that allow stimulating unconscious components of the creative process, which should:

- 1) to facilitate the transition from ordinary states of consciousness to unusual ones, at least for short periods of time;
- 2) have the ability to excite the interaction of intellectual, volitional and emotional functions;
- 3) provide a realistic encounter with the problem, immersion in it, emotional involvement;
- 4) to ensure the collision of opposite concepts, images, ideas. De Bono also proposed a group of techniques, the use of which creates optimal conditions for vertical thinking. These techniques make it possible to transform the original image of the problem into a more detailed one, to make its origins and predicted future states more understandable, to structure the available information and establish links between the available elements of the situation with the experience that the individual and collective subject of problem resolution has. According to the proponents of the second approach, in order for creativity to be formed as a deep, and not just a situational property, the formation must occur under the influence of environmental conditions. Creative thinking is a property that is actualized only when the environment allows it. It can be considered as a property formed on the principle of "if ... then ...". In everyday life, as studies show, there is a suppression of the creativity of an individual's thinking. This can be explained by the fact that creativity presupposes independent behavior, the creation of a single, while society is interested in internal stability and the continuous reproduction of existing forms of relationships, products. Therefore, the formation of creativity is possible only in a specially organized environment. In connection with the above, for the development of creative abilities, it is proposed to carry out indirect formative influence through a certain complex of microenvironments. The environment in which creativity could be actualized has a high degree of uncertainty and problems and prospects are potentially multivariate (richness of possibilities). Uncertainty stimulates the search for one's own landmarks, rather than accepting ready-made ones; multivariate provides the possibility of finding them. In addition, such an environment should contain samples of creative problem solving and its results.

The third, systematic approach to the development of creativity is the most effective for universities. Proponents of this approach claim that the process of activating creative thinking has a systemic character. As the analysis of internal and external aspects of environmental impact shows, the same mechanisms underlie changes in creative abilities and the

motivational and personal sphere of individuals. Therefore, the impact on one of the elements of the system leads to a predictable change in the other. Consequently, for the development of creative abilities, it is necessary to form certain creative personal properties of an individual. The manifestation of giftedness requires close attention to students from teachers. It is desirable that the training of gifted students be based on specially designed programs that would contribute to the full realization of creative and intellectual potential, while avoiding the one-sidedness of mental development, the dangers of distortion of personal development, as well as excessive mental stress and fatigue [2].

In addition, the creative nature of the activity should be based on broad erudition, personal experience, active search for innovative approaches and innovative technologies, knowledge of the psychological essence of processes and phenomena, personal initiative and broad professional communication skills of the university teacher himself. A person evaluates himself, first of all, in terms of his ability to influence the world around him. Thus, there is an emphasis on a strong sense of Self, on the possibilities that allow you to exercise control over situations and relationships. Self-knowledge becomes a prerequisite and component of self-determination. In a capitalist society, the motivation associated with the need to achieve increases. The division of labor and mobility have expanded the scope of individual choice of the individual. This leads to the need for a person to declare himself. Forms of self-awareness, including self-control and internal dialogue, their dynamics can be detected during the development of any culture. The teacher's ideas about his place in life and work, self-knowledge and self-affirmation in society and in self-image, self-esteem and self-improvement systems are one of the conditions for the development of students' creative abilities. There are three groups of ways to organize the training of gifted students: separate, joint-separate and joint training, several approaches to the modernization of training – acceleration, intensification, enrichment, three forms of training organization – group, collective and individual. Teachers need to find the optimal form of work, varying all possible ways, focusing on the capabilities of the group as a whole, as well as on the interests of everyone.

References:

1. Боровикова О.Н., Дежникова Н.С., Ришар Е.Н. Зарубежная школа: авторский поиск, эксперименты, находки. – М., 1993.
2. Венгер А.Л. Психологическое консультирование и диагностика: практическое руководство.– М.: Генезис, 2001. – Ч.1. – С.46-47, 102-103.
3. Крутецкий В.А. Психология. – М.: Просвещение, 1986. – С.77
4. Кочкаров Ю.С. Природа способностей. – Ставрополь: Кн. изд-во, 1980. –С.43, 194, 250.
5. Лейтес Н.С. Возрастная одаренность и индивидуальные различия: избр. труды. – М.: Изд-во Московского психолого-социального института; Возрастная психология. – Изд-во НПО «МОДЭК», 2003. – С.102-103.
6. Рубинштейн С.Л. Основы общей психологии. – М., 1946. – С. 25.

