professional activities in higher vocational schools, gymnasiums, or specialized classes, that is, complete the second period of adolescence. The rest of the graduates from 9th form, experiencing necessity-motivational crisis, must undergo a new circle of age development, in which high school pupils would be in the first age period, and junior students in the second period of "the age era of early youth". Activity in the first period of the era of early youth is aimed at the assimilation of human relations, requires respectively deep study of humanitarian subjects in high school, in order to form the necessity -motivational sphere of personality.

Keywords: activity, consciousness, creativity, emancipation, giftedness, identification, teenager, youth.

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Березова Людмила Василівна

ТВОРЧІ СТРАТЕГІЇ КОНСТРУКТИВНОЇ ДІЯЛЬНОСТІ

Березова Л. В. Творчі стратегії конструктивної діяльності. Крім безлічі видів задач, виділених наукою в різних областях дійсності, існують найрізноманітніші задачі, які постають перед мисленням людини суспільною практикою. Серед них особливий інтерес для нас є конструктивно-технічні задачі і їх можливості в навчанні. Процес розв'язування задач вимагає від студентів постійної розумової діяльності: він аналізує, групує, систематизує умови, виконує інші розумові операції, а значить розбудовує своє мислення. Особливості багатьох технічних об'єктів, саме оперування технічним матеріалом надають мисленню специфічний характер. У зв'язку з цим слід зазначити, що самі терміни «конструктивно-технічне мислення», «конструктивне мислення» широко використовуються. Широке використання задач у процесі навчання відповідає вимогам сьогоднішнього дня. Характерне розширення сфери застосування задач від традиційного закріплення й удосконалювання знань до формування понять, тобто реалізації пізнавальної функції навчальних задач. Творчість має стати нормою професійної праці та підготовки до неї, ми повинні зазначити, що кожен експерт повинен бути творчим експертом. Звичайно, рівень творчої активності завжди буде різним, оскільки в кожному конкретному випадку творчі можливості кожного студента, а потім працівника визначаються його здібностями, обдарованістю, талантом. Процес формування професійного творчого мислення безперервний протягом усієї життєвої діяльності.

Ключові слова: творчість, стратегії, творча задача, розв'язок, конструктивна діяльність, творче мислення.

Берёзова Л. В. Творческие стратегии конструктивной деятельности. Кроме множества видов задач, выделенных наукой в различных областях действительности, существуют самые разнообразные задачи, стоящие перед мышлением человека общественной практикой. Среди них особый интерес для нас конструктивно-технические задачи и их возможности в обучении. Процесс решения задач требует от студентов постоянной умственной деятельности: он анализирует, группирует, систематизирует условия, выполняет другие мыслительные операции, а значит развивает свое мышление. Особенности многих технических объектов, именно оперирование техническим материалом предоставляют мышлению специфический характер. В связи с этим следует отметить, что сами термины «конструктивно-техническое мышление», «конструктивное мышление» широко используются. Широкое использование задач в процессе обучения соответствует требова-

ниям сегодняшнего дня. Характерно расширение сферы применения задач от традиционного закрепления и совершенствования знаний к формированию понятий, то есть реализации познавательной функции учебных задач. Креативность должна стать нормой профессиональной деятельности и подготовки к ней, следует отметить, что каждый специалист должен быть креативным экспертом. Безусловно, уровень творческой активности всегда будет разным, так как в каждом конкретном случае творческие возможности каждого студента, а далее работника определяются его способностями, способностями, талантом. Процесс формирования профессионального творческого мышления непрерывен на протяжении всей жизнедеятельности.

Ключевые слова: творчество, стратегии, творческая задача, решение, конструктивная деятельность, творческое мышление.

Introduction. The creative thinking is search and discovering of something new. For creative work, it is necessary to have ability independently and critically to think, make through nature of subjects and phenomena, to be inquisitive, that appreciably provides productivity of mental activity.

Creative thinking is generally considered to be involved with the creation or generation of ideas, processes, experiences or objects; critical thinking is concerned with their evaluation.

Creative thinking involves creating something new or original. It involves the skills of flexibility, originality, fluency, elaboration, brainstorming, modification, imagery, associative thinking, attribute listing, metaphorical thinking, and forced relationships. The aim of creative thinking is to stimulate curiosity and promote divergence.

Necessity every day to solve the contradiction of vital circumstances (tasks) has generated requirement, and necessity of operating by knowledge results in development of intellection. The person has got used to this, that the concept «task» does not contact daily life, and it is carried to categories of pedagogic, science. Though any knowledge, even what is accepted by us as unconditional true, are the results of persevering human searches, which have arisen and solved as new difficult tasks.

One of the main tasks of psychological of students training to technical the development of the stable positive attitude of students to creative activity is possible.

Training of the future specialists for labor activity should be based on the solution of its constructive-technical, technological, organizational tasks which would display situations of real work.

The solution of different scientific, practical, art, constructive and other tasks which arise in a life of people, demands knowledge by them not only external properties of objects, and their internal connections and attitudes. Therefore, as G.S. Kostiuk marked, «a problem of the development of thinking, and especially the development of creative thinking which differs originality and creativity is very important presently» [1].

The task, as a rule, is the problem set or formulated independently which demands from the subject of the certain actions at finding of the answer to that or other question, which contains in a condition of task. It can be a task on mathematics, and a task, which emerges in conditions of game, an administrative task, etc.

Psychological task emerges (is formulated) for the subject in the case when he does not know how to reply, how to orient in the given situation, he needs to search for the answer, especially to organize the activity.

Main part. The creative task, as marks V. Moliako, is completely new or unfamiliar for the subject, or at least, contains significant newness, which defines the intellectual efforts, special search, finding of a new method of the decision [4].

Tasks, the questions and practical tasks are effective didactic means, which make active creative activity of subjects, and especially if they are problem, they have contradictions in their contents. The overlap between creative and constructive thinking becomes more and more obvious. We see creativity as a way to be 'constructive'. Creativity is most effective when embedded in constructive thinking. It is quite possible to be constructive without being exceptionally creative. This can be done with designs that put together known elements in standard ways. It is also done by yellow hat focus on positive aspects and then seeking to develop these.

Edward de Bono notes that the constructive thinking that delivers values. Creative thinking may design new values and may suggest new ways of delivering values, but it is constructive thinking that makes things happen. There is not as much hype and mystique around constructive thinking. That may be a good thing. It is also a good thing that creative people put more emphasis on constructive thinking [5].

Creative thinkers develop the habit of approaching challenges or questions from solution-oriented perspectives. Constructive thinking requires more of a shift in personal attitude and philosophy than it does adoption of techniques or strategies, and although logic would suggest that, everyone should be constructive. Incredibly, many societies and cultures cultivate destructive and confrontational modes of thinking and acting to the point where we tend to view them as being normal and acceptable. Of course, people do not think they are being deliberately destructive or confrontational, but consider how our governments, courts, workplaces and even home environments often operate.

The confrontational approach is a tenuous strategy because it tends to make proponents of a point of view isolationist and thus denies the opportunity and inclination to seek out alternatives or opposing points of view.

You have probably known people who seem to move naturally in creative directions when confronted by a question, problem, or issue. They seem to instinctively seek positive outcomes and eagerly involve others in helping to reach solutions. You have probably also known people who seem more inclined to view challenges as annoyances. These people often begin their thinking process with a litany of negatives: «I can't solve this...» or «I've got enough to do already...» or «I know what I'd like to do but these other people just don't seem to get the point...»

Becoming a consistent creative thinker comes first from forming the appropriate mental mindset and then by disciplining yourself to practice being constructive. In addition, do not overlook the fact that being constructive almost automatically helps us to be more likable-an important consideration in the careers.

Rather frequently constructive activity begins from finding of the contradiction. Not everyone is capable to notice the contradiction, but only the one who is ready to these. Such people have necessary skill and knowledge of that sphere in which there are contradictions, they have advanced abilities – the generated conforming readiness. Ingenious people who can notice the contradiction in the environmental world, become inventors of ideas in this or that sphere of creativity: social, pedagogical, scientific, technical, art, etc.

Engineering innovation; comprises such forms of activity as invention, rationalization, design, design engineering, industrial design and designing and engineering activity of students and non-professionals. Design engineering has been chosen for investigation, as encompassing essential features of other forms of engineering creativity. Thus, the implications of the studies of design engineering can be extrapolated to engineering creativity. This also applies to the general structure of the process of creative engineering [2].

The present analysis of creative process employs the concept of «decision-making stream» reflecting the complex dynamic relationship between images, concepts and ideas. It is fitting to note that different philosophical schools and movements, of course have elaborated the theories of matter motion stream, in their own fashion. Considerable attention is known to have been given to this question in the studies in dialectics, dialectical materialism, and in psychology, as well [4].

The interpretation of the psychological structure of the process of decision-making and evolvement of the image of the design («construction») to be sought has made it possible to use, for an integral description of this process, the notion of «strategy», which is determined by the dominant thinking tendencies, their regularity and realization frequency, and which differs from such broader notions as «method», «mode», «plan», etc. (mode and method are rather abstracted from the personality and the plan of decision-making shows only the sequence of acts, whereas strategy encompasses all of these reflecting the individual's specific direction, tendencies in their basic aspects, paramount for decision-making) [3].

A strategy is taken to mean a rather complex psychological formation comprising preparatory, planning and realization acts, which are related to the fulfilment of the individual's, potentialities in the concrete situation of creative activity. A strategy's concrete direction is made up of its dominant tendencies (e.g. a search for analogues), which are realized through concrete images and concepts. The making and elaboration of a strategy, as an above-described system, is examined in the present study through the examination of the making and elaboration of a device design, which develops from initial goal through the evolving image of the end product up to preliminary validation in a sketch-form (approbation).

The evolvement of the strategy of a concrete process of creative activity as well as the entire psychological structure of this process, are seen as involving a rather intricate blend of three main cycles: the examination of the engineering

problem, project (hypothesis) formation and the making of a preliminary decision (approbation).

Five major strategies in design engineers' intellective activity have been identified: 1) a search for analogues, 2) combinatorial actions, 3) redesigning actions, 4) universal strategy, 5) random substitutions. Each of these is primarily geared to creating engineering structure with particular functions, to structural-functional transformation of engineering devices, which is, in fact, related to the essence of design engineering [2].

The major tactical paths were identified, which form part of strategies during hypothesis building, e.g. interpolation, extravagancy, duplication etc.

The study of creative activity invariably focused on the process of design engineering – on the image of the system being designed; whose structural and functional characteristics are what the search is aimed at; which, in its turn; determines the overall configuration (organization) of the decision-making process. The evolvement of the design image can be presented as a chain of transformations of a sort of «proto-image» into the image to be materialized, viz.: «proto-image» – «fore-image» – «reference image» – «dominant image» – «pre-project-image»– «project image» – «sketch image» (the latter serves as the basis for making device drawings) [2].

To generalize, the study has made it possible to formulate and, as far as possible, to substantiate the hypothesis of the process of design engineering as a poly-dominant decision-making stream, organized and regulated by corresponding strategies and tactics through the main system-forming dyad «image-drawing» (sketch). It is the visual image of the engineering device, materialized and tested in drawings and sketches, which enable the design engineer to make basic decisions at the preliminary stages of the process of engineering activity, as well as at the final stages, when it is ultimately assessed to what degree the device being designed, meets the requirements of the engineering assignment, of current standards, regulations and of various external factors. Such interpretation of design engineering activity appears to be psychological, more realistic than the primarily logical interpretations, which have been prevalent so far: the present interpretation permits us to elucidate, the significant connections and dependencies between the personality and creative activity, externalized in various intermediate and final products [3].

Conclusion. Creativity should become norm of professional work and preparation to it, we should note that each expert should be the creative expert. Certainly, a level of creative activity always there will be different, as in each concrete case creative opportunities of each student and then worker determined by its abilities, endowments, talent. Process of formation of professional creative thinking is continuous during all vital activity.

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Beresova L. V. The creative strategies of designing activity. The solution of the constructive-technical tasks causes in students' steady interest, as they are interested in novelty, originality of tasks and opportunity to make use of the practical experience. The process of a new technical problems' solution consists of three main cycles: etaloning, designing, approbation (control sketching). A strategy is taken to mean a rather complex psychological formation comprising preparatory, planning and realization acts, which are related to the fulfilment of the individual's, potentialities in the concrete situation of creative activity. The evolvement of the strategy of a concrete process of creative activity as well as the entire psychological structure of this process, are seen as involving a rather intricate blend of three main cycles: the examination of the engineering problem, project (hypothesis) formation and the making of a preliminary decision (approbation).Tasks, questions and practical tasks is an effective didactic way, which makes active creative activity of the person. The creative thinking carried out at the decision of creative tasks is considered. Creativity should become norm of professional work and preparation to it, we should note that each expert should be the creative expert. Certainly, a level of creative activity always there will be different, as in each concrete case creative opportunities of each student and then worker determined by its abilities, endowments, talent. Process of formation of professional creative thinking is continuous during all vital activity.

Keywords: creativity, strategies, creative task, solution, engineering activity, creative thinking.

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