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## CREATIVE THINKING DEVELOPMENT WHILE TEACHING ENGLISH SPEAKING TO FUTURE SOFTWARE ENGINEERS

Annotation: The article deals with the problem of developing creative thinking abilities of software engineering students. Attention is driven to the importance of such abilities for further professional activity of this category of specialists. Several particular abilities, which can contribute to the development of creative thinking of software engineering students, are mentioned. Possible ways to apply creative thinking development tasks within the ESP lessons are described.
Key words: Creative thinking development, software engineering students, highly-qualified specialists, thinking abilities.

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## РАЗВИТИЕ ТВОРЧЕСКОГО МЫШЛЕНИЯ ВО ВРЕМЯ ОБУЧЕНИЯ АНГЛОЯЗЫЧНОМУ ГОВОРЕНИЮ БУДУЩИХ ИНЖЕНЕРОВ ПРОГРАМНОГО ОБЕСПЕЧЕНИЯ

Аннотация. В статье рассматривается проблема развития способностей к творческому мышлению будущих инженеров программного обеспечения. Внимание уделяется важности этих способностей для будущей профессиональной деятельности этой категории специалистов. Упоминаются некоторые определенные способности, которые могут посодействовать развитию творческого мышления будущих инженеров программного обеспечения. Описываются возможные способы применения заданий для развития творческого мышления в рамках изучения дисциплины: «английский язык для специальных целей».
Ключевые слова: развитие творческого мышления, будущие инженеры программного обеспечения, высоко квалифицированные специалисты, мыслительные способности.

Modern-day society is surrounded by new technological developments, especially the ones related to the sphere of Information Technology. Most industrial branches are highly computerized creating the necessity for loading these machines with tasks to fulfill. In other words the need for highly-qualified

programmers is evident whereas the task to train such specialists at technical Universities proves to be important.

Forming the professional competence of such specialists as a systematic, consecutive and purposeful process has to comprise all necessary sets of knowledge included in the curriculum, among which English speaking skills take a significant part.

The main higher-educational trend today is the aim to develop an individual, able to solve different working tasks and respond adequately to present-day challenges. That is to say the development has to comprise both knowledge base and personal development issues. In particular, one of the most important issues is creative thinking development. To analyze it closer let's draw out attention to the basics of this profession.

This profession is highly-intellectual, requires lots of concentration, practical mathematical skills and knowledge of different programming languages and statistics. A programmer is basically a specialist who writes codes for a computer, whereas a software engineer is the highest technical qualification, which this specialist can acquire. But to learn more about requirements for a future software engineer let's turn to and state the words of a famous programmer, Yershov [2], who stated that a programmer has to comprise the ability of a first-class mathematician to apply for abstraction and logical thinking tasks as well as Edison's talent to construct whatever he needs with zeros and ones. This type of specialist must be as accurate as an accountant and as creative as a detective stories' author. Besides, a programmer has to be able to understand the needs of clients, etc. So, as we can see, quite a few completely opposite from the first sight features make a good software engineer. This leads us to the issue of flexibility and creativity as professional feature needed for such specialists.

So, let's take a look at what constitutes creative thinking. Even though there is no uniform definition, creative thinking is individual characteristics that a person has, which indicates his/her ability to be innovative in different life spheres and introduce new solutions for existing problems. The development of some

abilities can contribute to the development of creative thinking in general, among which are: fluency of thought, flexibility of thinking, curiosity and imagination.

Basically, creative thinking abilities signify that a person can come up with something new, to show something from the different angle, to represent a new idea how to solve a problem in a unique way. Programmers fulfill it within the code. Together with strong analytical analysis of the code being written within rather rigid programming language pattern, a programmer still has to come up with the creative way to solve this problem.

Most effective strategies to engage students in creative tasks and let them be creators themselves are of psychological nature. Here the crucial element is student-teacher interaction mode. The atmosphere in class where there is a purpose to develop creative thinking ability  has to be positive, students have to feel free to represent their ideas without a fair to be criticized. There has to be some motivating factors, whether they are represented by the task itself (which is a better variant) or by a competitive atmosphere in class while fulfilling it.

English language lessons can contribute to the task of training this feature that we may call 'thinking outside the box', especially if the lessons include some professional patterns. By this we mean that software engineers operate such notion as lateral thinking, or the ability to perceive patterns that are not obvious. So, they tend to have rather good imagination, which can be further developed by the means of foreign language classes.  This gives us an idea that during the lessons, especially while teaching speaking, teachers can make use of multiple creative tasks such as individual, pair or group problem-solving activities, as well as discussions, debates, work meeting role plays etc. Oral communication, especially dialogue speech, is always spontaneous; students have to train the ability to produce new ideas immediately.

To conclude, we would like to say that creative thinking abilities of any specialist are highly-valued in any sphere of industry and business as it is considered to be a higher level of thinking abilities.  On a larger scale, by training creative thinking abilities we contribute to the development of thinking culture,

which is never given to a person from his/her childhood but is formed from practical experience of using certain thinking techniques, imagination, self-concentration in particular conditions. This way, we will contribute to the task of developing a creative and highly-qualified specialist equipped with some techniques for boosting his/her ideas in future professional sphere. In this context it is necessary to bring about the fact that to develop creative thinking abilities in class teachers need to show a good level of creativity themselves, as all the tasks have to contain specific intricate aspect to lighten their imagination.

## СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ ТА ЛІТЕРАТУРИ:

1. Adair, John The art of creative thinking: how to develop your powers of innovation and creativity, 133p.
2. Ершов А.П. О человеческом и эстетическом факторах в рограммировании/Ершов А. П.//Кибернетика. – 1972, № 5. – С. 95-99.
3. Palamarchuk, E. L., Development of creative thinking among students studying English in secondary schools/ retrieved from: https://cyberleninka.ru/article/n/development-of-creative-thinking-among-students-studying-english-in-secondary-schools/viewer