METHODOLOGY FOR DEVELOPING CREATIVE THINKING OF STUDENTS OF COMPUTER SCIENCES AND PROGRAMMING TECHNOLOGIES

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https://doi.org/10.5281/zenodo.10437532

Abstract: today, computer programs are very important in the educational process. For this reason, this article promotes the technology of developing creative thinking of students of computer science and programming technology, and the educational methodology aimed at developing creative thinking skills of students.

Key words: computer programs, web programming, innovative activity, creative thinking, methodology.

Introduction:

Today, in order to remain competitive in many areas of our society, the world community considers the supply of people who drive creativity and innovation as the most important factor. Governments around the world are looking for creative and innovative smart people who can think. The economic importance of folk art is increasing more and more. Creative thinking not only reveals the essence of things and their internal relationships, but also creates innovations, new, new interpretations and valuable products. The technology of developing creative thinking of students of computer science and programming technologies means an educational methodology aimed at developing creative thinking skills of students.

This methodology requires teachers to support and guide students. Also, this process requires the integration of modern educational technologies and teaching methods in educational institutions. The most important factors to focus on in "Development of creative thinking of students of computer science and programming technologies" are:

Innovative Learning Environment: Educational institutions should provide students with modern and practical programming technologies as well as new pedagogical methods. It increases students' interest in technology and encourages them to try new ideas.

Practical Projects and Real Life Problems: To give students an opportunity to apply theoretical knowledge in practice. It develops their problem-solving skills and creative solutions.

Problem-Based Learning (PBL) and Project-Based Learning (PjBL): Engaging students in solving real-world problems and working on projects enhances their ability to think independently and develop creative solutions.

A Culture of Self-Education and Continuous Learning: Encourage students to update their knowledge independently, for example through online courses, seminars and webinars.

Working with Technological Tools and Programs: Development of skills for working with programming environments, development tools and modern technologies.

Encourage Creative Thinking and Innovative Solutions: Encourage students to generate new ideas and put them into practice.

Teamwork and Communication Skills: To develop a culture of cooperation among students, which enhances their ability to work as a team and discuss ideas.

Critical Thinking and Problem Analysis Skills: To teach students to analyze complex problems and consider them from different perspectives.

These factors play an important role in improving the creative thinking skills of their students and help them become successful programmers and technology professionals in the future. Encouraging the creative development of computer science students is important because it:

Need for Innovation and Innovation: Computer science is a rapidly changing and innovative field, and new solutions and approaches are needed to succeed in this field. The creative development of their students prepares them to generate new ideas and contribute to technological developments.

Enhances Problem Solving Ability: Creative thinking helps students solve complex problems in unique and effective ways. This skill is very important in programming and computer science.

Successful Career Opportunities: Creativity is one of the key skills sought by IT and technology employers today. Creative employees play a key role in developing new products and services.

Adaptability to Technological Changes: Creative thinking helps students adapt to a rapidly changing technological environment. This prepares them for future changes and ensures they are flexible.

Self-Development and Learning Ability: Creative thinking encourages students to continuously learn and update their knowledge, which helps them to develop continuously.

Teamwork Problem Solving: Creative development helps students to work effectively in teams and solve problems together, which is the basis for successful implementation of IT projects.

Broader Thinking and Initiative: Creative development enables students to adopt different ways of thinking and take new initiatives.

For these reasons, supporting the creative development of computer science students is an important part of preparing them for the modern and competitive market. This greatly contributes to their personal and professional success. Full-blooded mobilization of students into this atmosphere:

This dimension is related to the strengthening of analogical and metaphorical thinking. Analogical reasoning is one of the most important problem-solving heuristics. The ability to abstract and apply solutions and analogies from previously known problems to new ones, to be able to provide solutions to new situations through previous effective experiences. Our researchers believe that when students are faced with similar problems for their structures when they investigate, they gain a stronger conceptual understanding of the problems and create a stronger problem schema. This dimension is also related to information retrieval. Students who succeed in discovery and innovation must be aware of previous and relevant work, and must be aware of the principles and methods to be used in the development of their work. Students expand the space of dialogue in the process of joint research. Seeking information for information and inspiration that includes purpose, determining relevance and

irrelevance, information, recognizing familiar information and coping with new information, techniques reuse and adaptation styles, open experience with thought and experience with purpose, state goals and brainstorming, hypothesis matching and making assumptions, learning and exploring the similarities and differences of metaphors, all of which must be done to develop awareness. are the most important steps.

Conclusion:

Based on the above considerations, preliminary results show that the framework presented here enables students to discover important creative strategies in collaboration.

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