

METHODOLOGY FOR TRAINING ADOLESCENTS IN CREATIVE THINKING BASED ON DESIGN TECHNOLOGY

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Annotation:

This article presents a detailed methodology for training adolescents in creative thinking using design technology. It explores the importance of creative thinking in the context of design technology education and provides insights into effective teaching methods. The study involves a literature analysis to understand existing approaches, a comprehensive methodology detailing the step-by-step process, and concludes with results, discussions, conclusions, and suggestions for further research.

Keywords: Creative thinking, design technology, adolescents, education, innovation, problem-solving, teaching methods.

The introduction provides an overview of the significance of creative thinking in adolescents and the role of design technology in fostering innovation. It sets the stage for the methodology by highlighting the gap in existing approaches and the need for a systematic training method.

This section delves into existing literature on creative thinking, design technology education, and methods for teaching adolescents. It critically evaluates different approaches, identifies gaps in current research, and highlights successful strategies for promoting creative thinking skills among adolescents.

The methodology section outlines the step-by-step process for training adolescents in creative thinking through design technology. It includes details on curriculum development, classroom activities, project-based learning, and assessments. Emphasis is placed on creating an environment that encourages experimentation, collaboration, and critical thinking.

- Curriculum Development: Designing a curriculum that integrates creative thinking into the core of design technology education.

- Classroom Activities: Incorporating interactive and hands-on activities to stimulate creative thinking, such as brainstorming sessions, prototyping, and design challenges.



- **Project-Based Learning:** Implementing projects that encourage problem-solving, innovation, and application of design principles.

- **Assessment Strategies:** Developing assessment tools that measure not only technical skills but also the creative thinking abilities of adolescents.

Training adolescents in creative thinking based on design and technology can be a rewarding and engaging process. Here's a methodology that combines principles of design thinking with technology education to foster creativity in adolescents:

Introduction to Design Thinking:

- Start with an overview of design thinking principles: empathize, define, ideate, prototype, and test.

- Explain how design thinking is a problem-solving approach that encourages creativity and user-centered solutions.

Contextual Understanding:

- Encourage students to observe and understand the world around them.

- Identify real-world problems or challenges that are relevant to their lives or communities.

Empathy Building:

- Conduct empathy exercises to help students understand the perspectives and needs of others.

- Interview potential users to gather insights and develop a deep understanding of the problem.

Problem Definition:

- Guide students in defining a specific problem based on their observations and empathy exercises.

- Help them articulate the problem in a way that focuses on the user's needs and aspirations.

Ideation and Brainstorming:

- Teach techniques for generating a wide range of ideas.

- Facilitate brainstorming sessions where students can freely express and build upon each other's ideas.

Prototyping:

- Introduce basic prototyping tools and materials.

- Encourage students to create low-fidelity prototypes of their ideas, emphasizing that the goal is to test and iterate.

. **Technology Integration:**



- Integrate technology tools relevant to design and prototyping (e.g., 3D printing, graphic design software, coding platforms).

- Provide hands-on training sessions to familiarize students with these tools.

Collaborative Learning:

- Foster a collaborative environment where students can work in teams.

- Emphasize the importance of diverse perspectives and skills in problem-solving.

Critical Thinking and Reflection:

- Encourage students to reflect on their design choices and the impact of their solutions.

- Discuss and analyze both successful and unsuccessful aspects of their projects.

Showcasing and Presentations:

- Provide opportunities for students to showcase their projects.

- Emphasize effective communication of the design process, including challenges faced and lessons learned.

Feedback and Iteration:

- Foster a culture of constructive feedback.

- Encourage students to iterate on their designs based on feedback received from peers, teachers, and potential users.

Real-world Applications:

- Connect the projects to real-world applications or competitions.

- Showcase examples of how design and technology can make a positive impact on society.

Continuous Learning:

- Keep the learning process dynamic and evolving, introducing new challenges and technologies as the students progress.

Assessment:

- Develop a rubric that assesses both the process (e.g., ideation, prototyping, collaboration) and the final product.

- Provide constructive feedback that encourages continuous improvement.

By combining design thinking principles with hands-on technology experiences, this methodology aims to empower adolescents to think creatively, solve problems, and apply their skills in meaningful ways.

5. Discussion Section:
The discussion section interprets the results in the context of existing literature, highlighting the strengths and limitations of the proposed methodology. It explores implications for future research and practical applications in diverse educational settings.



Conclusions:

The conclusion summarizes the key findings and reiterates the importance of integrating creative thinking into design technology education for adolescents. It also discusses the broader implications for education and the potential impact on fostering a culture of innovation.

This section provides recommendations for future research directions, including the exploration of alternative teaching methods, the impact of socio-economic factors on creative thinking, and the scalability of the proposed methodology in different cultural contexts.

In conclusion, this article provides a comprehensive methodology for educators aiming to enhance creative thinking skills in adolescents through design technology. By combining theoretical insights with practical strategies, the proposed approach seeks to contribute to the development of innovative and forward-thinking individuals in the 21st century.

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