

Research on the Training Mechanism of Innovative Design Thinking in Higher Vocational Art Major from the Perspective of AIGC

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Abstract:

As artificial intelligence and algorithmic creativity advance, their integration into art and design education intensifies, emerging as a pivotal means of enhancing pedagogical quality. This research investigates the utilization of AIGC technology to foster innovative design thinking in vocational art education. Through an examination of recent AIGC technological developments and their practical applications in art and design, this study elucidates their profound impact and significance for vocational art education. Moreover, by scrutinizing the educational challenges confronting vocational art disciplines and the imperative of nurturing innovative design thinking, this paper posits that vocational art programs should establish a curriculum framework adaptable to emerging technologies and implement innovative pedagogical strategies from an AIGC perspective. Ultimately, this study synthesizes the beneficial effects of AIGC technology on cultivating creative aptitudes in art students and proposes specific recommendations for the design of instructional mechanisms in vocational education.

Keywords:

Vocational Art Education, AIGC Technology, Innovative Design Thinking, Teaching Mechanism Design, Curriculum System Construction, Teaching Strategies

1. Introduction

With the advancement of the times and social progress, the art and design industry is increasingly demanding innovative design thinking. However, students majoring in art at vocational colleges, from the perspective of AIGC (Artificial Intelligence, Internet of Things, Big Data, Cloud Computing), face the challenge of integrating and innovating traditional design thinking with emerging technologies. Therefore, exploring the mechanism for cultivating innovative design thinking in vocational art programs is highly significant for enhancing students' overall competencies and adapting to future career developments. To this end, this study aims to analyze the current state of innovative design thinking in vocational art programs, explore

strategies for cultivating innovative design thinking within the AIGC framework, and propose corresponding countermeasures, in order to provide theoretical support and practical guidance for developing innovative design thinking among vocational art students.

2. Overview of AIGC Technology

2.1. Current Development Status of AIGC Technology

AIGC (AI-Generated Content) technology is a natural language generation technology based on artificial intelligence algorithms. Utilizing deep learning and big data processing, it can understand and generate large-scale texts. Currently, AIGC technology has made significant advancements in various fields, including natural language processing, intelligent Q&A systems, and automatic summarization. In the art and design sector, AIGC technology has also begun to be applied to creation, writing, design, and other areas, bringing new possibilities for art professionals.

As technology continues to evolve, the application of AIGC in the art and design field is expanding. From initially simple text generation to later image generation and design suggestions, AIGC technology now assists art designers in their creative processes and expanding their creative thinking. Additionally, innovative AIGC products are gradually emerging, introducing fresh ideas and methods to the art and design domain.

However, AIGC technology in art and design still faces several challenges and limitations, such as distinguishing AI-generated works from original creations and the limitations in creative capabilities. Therefore, better application and development of AIGC technology in the art and design field has become an urgent issue to address. Through in-depth research and analysis of the current development status of AIGC in art and design, this can provide valuable references and insights for cultivating innovative design thinking in vocational art programs.

2.2. Application of AIGC Technology in Art and Design

AIGC technology is applied in art and design through its ability to analyze and process data during the creative process. It enables the rapid analysis and processing of large volumes of art and design data, uncovering hidden patterns and features to provide data support and references for designers.

Additionally, AIGC technology facilitates intelligent assistance and creativity in art and design. By utilizing image recognition, sentiment analysis, and style matching, it offers smart tools to art designers, enhancing both the efficiency and quality of their work.

Moreover, AIGC technology enables personalized customization and interactive experiences in art and design. By analyzing user behavior and preferences, and leveraging AIGC's personalized recommendations and interactive design capabilities, it provides users with more tailored and engaging art works and experiences.

In summary, the application of AIGC technology in art and design not only boosts design efficiency and quality but also introduces greater intelligence and personalization, fostering a deeper integration of art design with technology.

3. Current Status of Vocational Art Education

3.1. Characteristics and Challenges of Vocational Art Education

A key characteristic of vocational art education is the development of students' creative abilities, emphasizing practical teaching and the art creation process. However, vocational art education faces challenges in aligning with industry demands, with inadequate integration between schools and enterprises and a significant gap between educational content and business needs. Additionally, there is a shortage of qualified art educators, limiting the ability of schools to foster students' innovative design thinking. The interdisciplinary nature of vocational art education also requires integrating knowledge from art, technology, and business to develop students' comprehensive interdisciplinary skills. To address these challenges, vocational art education must actively explore practical approaches, establish cultivation mechanisms that meet real-world needs, and enhance students' innovative design thinking.

3.2. Importance of Innovative Design Thinking in Vocational Art Education

Innovative design thinking is crucial in vocational art education. Firstly, art students need innovative design thinking to meet the evolving market demands and compete in a fierce environment. Secondly, innovative design thinking stimulates students' imagination and creativity, resulting in more personalized and original artistic creations. Furthermore, it enhances students' problem-solving and artistic expression skills, enabling them to effectively navigate various complex situations in their professional work.

Moreover, vocational art education should prioritize the cultivation of innovative design thinking through curriculum design and teaching methods. By incorporating interdisciplinary courses and project-based learning, students can gain a broader range of knowledge and skills, sparking their interest and passion for artistic creation, thereby better developing their innovative design thinking.

In conclusion, cultivating innovative design thinking in vocational art education is vital for students' growth and professional development. Schools and teachers should collaborate to provide more learning opportunities and creative spaces, unlock students' innovative potential, and nurture more art professionals with strong innovative thinking.

4. Teaching Mechanism Design from the Perspective of AIGC

4.1. Construction of the AIGC-Assisted Curriculum Framework

When constructing an AIGC-assisted curriculum framework, the first step is to define the course objectives and content, integrating the characteristics and trends of the art and design major for prospective planning and design. Next, it is essential to develop course content and teaching methods tailored to the features of AIGC technology, including but not limited to interdisciplinary integration, practical operations, and case-based teaching methods. Subsequently, introducing advanced digital technologies and tools is recommended to support course implementation and student learning, aiming to achieve higher teaching effectiveness and learning quality. Additionally, strengthening collaboration with the industry is necessary to guide students in participating in real-world projects and practical activities, ensuring the

curriculum aligns with employment demands. Finally, continuously evaluate and enhance course outcomes, optimizing course content and teaching methods to ensure that the AIGC-assisted curriculum framework consistently meets societal needs and professional developments.

4.2. Teaching Strategies and Methods to Enhance Innovative Thinking

In terms of teaching strategies, adopting a project-driven teaching model can stimulate students' innovative thinking through practical projects, allowing them to continuously develop and propose innovative solutions during the design process. Additionally, introducing interdisciplinary collaborative teaching methods enables art major students to work on projects with peers from other disciplines, gaining inspiration from different fields and cultivating cross-disciplinary thinking skills. Emphasizing teacher-student interaction by encouraging students to ask questions and engage in discussions in the classroom allows teachers to effectively stimulate students' innovative thinking through guidance.

Regarding teaching methods, implementing case-based teaching can guide students in studying advanced innovative design examples, helping them develop their own innovative awareness and abilities by learning from others' innovations. Moreover, introducing iterative design methods allows students to refine and improve their design proposals through ongoing practice, fostering their continuous pursuit and persistence in innovation. Conducting professional skills training can also enhance students' technical proficiency, providing more opportunities for their innovative designs.

5. Conclusions

Through researching the cultivation mechanisms for innovative design thinking within the framework of AIGC in vocational art majors, we have reached the following conclusions:

Firstly, our analysis indicates that engaging students in real projects and practical activities is an effective method for fostering innovative design thinking. These projects enable students to integrate theoretical knowledge with practical application, thereby stimulating their innovative capabilities.

Secondly, developing students' interdisciplinary collaboration skills is essential for nurturing innovative design thinking. We found that participating in interdisciplinary project collaborations enhances students' diverse perspectives, thereby promoting the development of innovative design thinking.

Furthermore, the cultivation mechanisms for innovative design thinking within the context of AIGC in vocational art majors must be tailored to real-world conditions, emphasizing personalized training for each student. Since each student possesses unique innovative potential, individualized training approaches are necessary to ignite their innovative thinking.

In summary, the cultivation mechanisms for innovative design thinking in vocational art majors under the perspective of AIGC should prioritize involvement in real projects, the development of interdisciplinary collaboration skills, and personalized training methods. These focus areas are crucial for enhancing students' levels of innovative design thinking.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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