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Analysis on the Current Situation and Improvement Countermeasures of Art Design Education in Colleges and Universities under the Background of AIGC Technology

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Abstract: Against the backdrop of the digital and intelligent era, the integration of Generative Artificial Intelligence (AIGC) and higher education is deepening. Particularly in art design education in colleges and universities, the application of AIGC can automatically generate graphic designs, copywriting, and artistic posters, etc. This is conducive to providing students with new ideas for creative design and practice, thereby achieving the goals of improving teaching quality and efficiency. Based on this, this paper, taking AIGC technology as the background, analyzes the impact of AIGC technology on the development of the art design industry, expounds on the current problems and improvement countermeasures of art design education in colleges and universities under the background of AIGC technology. It aims to better promote the digital transformation of art design education reform in colleges and universities, and hopes to provide some references for peers.

Keywords: AIGC technology; Colleges and universities; Art design education; Current situation of problems; Improvement countermeasures

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1. Introduction

Nowadays, from image generation, music creation to interactive design, the application of AIGC technology is gradually changing the methods and processes of artistic creation [1]. Under this situation, as an important base for cultivating professional talents in art design, colleges and universities must keep up with the development pace of the times, reconstruct teaching models, and improve teaching effectiveness to help students better adapt to the digital and intelligent era. Therefore, this paper mainly conducts relevant analysis and research on the teaching reform of art design education in colleges and universities under the background of AIGC technology,

for reference only.

2. The impact of AIGC technology on the development of the art and design industry

2.1. AIGC technology can transform traditional artistic creation processes

In traditional art creation, designers mostly rely on their personal experience and manual skills to create works, emphasizing the originality of the creative concept and the uniqueness of handcraftsmanship [2]. The entire process usually takes a long time, while the diversity and efficiency of creation are relatively low, and some innovative ideas are difficult to perfectly present. However, if AIGC technology is introduced in this process, art designers can use artificial intelligence algorithms to quickly generate multiple art design schemes, and can also carry out iterative optimization according to actual conditions and requirements, thereby designing more high-quality creative works in a short period of time [3]. Therefore, from this perspective, the effective application of AIGC technology in the field of art design can greatly change the process of traditional art creation. This also reflects that when cultivating talents majoring in art design, colleges and universities should not only require students to master a solid foundation of professional theories, develop their solid professional practical skills and good professional literacy, but also enable them to acquire certain artificial intelligence application capabilities and innovative thinking. Only in this way can students better adapt to the development requirements of the art design industry in the background of AIGC technology.

2.2. AIGC technology can promote changes in the art and design industry

Under the background of AIGC technology, the working methods and market demands of the art and design industry have undergone obvious changes. Specifically, on the one hand, in terms of working methods, the emergence of various digital art works, the introduction of smart contracts, and market reforms based on modern technological means such as artificial intelligence, blockchain, and big data have provided a good opportunity for the application of AIGC technology in the field of art and design, and also provided a better intellectual property protection mechanism for the creation of art designers. On the other hand, in terms of market demand, the application of AIGC technology has also spawned many new positions, such as AI art generator and AI interaction design engineer. This requires relevant practitioners to have not only solid art and design capabilities, but also certain data analysis capabilities and programming skills, to effectively ensure that they stand out in the highly competitive job market [4].

3. Current issues in higher education of art and design against the backdrop of AIGC technology

Against the backdrop of AIGC technology, there are still some problems in the application of AIGC technology in current higher education of art and design, which are mainly manifested in the following aspects:

(1) The educational and teaching philosophy needs to be updated

Influenced by traditional teaching concepts, some teachers focus more on cultivating students' professional theoretical knowledge and practical skills when formulating talent training programs and setting up related courses for art and design majors, without integrating content related to AIGC technology, big data analysis, and computer learning. This easily leads to a disconnect between what

students learn and cutting-edge technologies of the times as well as the actual needs of the art and design industry, which is not conducive to students' future employment and career development [5].

(2) The teaching content is relatively outdated

Currently, many teachers of art and design majors in colleges and universities still teach students relevant knowledge and skills in accordance with the requirements of textbooks and syllabi. Although this content is updated regularly, the speed of update is far from keeping up with the iteration speed of technologies in the current art and design industry. This easily results in students learning relatively backward content, ultimately making it difficult for them to meet the talent needs of the current art and design industry [6].

(3) The teaching methods are relatively simple

The rapid development of AIGC technology has had a profound impact on the traditional art and design industry and its educational model. However, some teachers have doubts about the application of AIGC technology, and in addition, some schools have insufficient investment in introducing new technologies and updating teaching equipment, which easily leads to uneven levels of application of AIGC technology among teachers [7]. Therefore, at present, teaching in art and design majors in colleges and universities is still mostly theory-based, lacking corresponding practice, and unable to skillfully apply AIGC technology in teaching.

(4) Teachers' ability to use new technologies, such as AIGC technology, is insufficient

With the continuous development and popularization of modern science and technology, a new generation of technical means including AIGC technology has now become an important auxiliary tool for the reform and development of various industries. Therefore, this requires teachers to not only have solid professional ability, teaching ability and high professional quality, but also be able to skillfully use technical means such as AIGC to carry out teaching and provide relevant practical guidance for students [8]. However, currently, many colleges and universities have insufficient attention to the ability of art and design teachers to use new technologies; for example, some art and design teachers in colleges and universities have low awareness and ability of digital and information-based teaching, and some teachers cannot actively and in-depth learn new technologies and concepts in the industry, thus making the overall teaching unable to fully meet the requirements of modern education.

4. Improvement strategies for higher education in art and design under the background of AIGC technology

4.1. Updating the teaching philosophy of art and design

In traditional art and design education in colleges and universities, the teaching methods adopted by teachers are mostly lecture-based and cramming-style, and are limited to offline in-class instruction [9]. Such teaching not only struggles to fully meet the personalized and diversified learning needs of students at different levels, but also restricts the development of students' innovative thinking and practical abilities to a certain extent. Against the backdrop of AIGC technology, the update speed of new concepts and technologies in the art and design industry will inevitably accelerate. For art and design students, they can also use AIGC to obtain desired learning resources, engage in design practice, and even widely disseminate relevant knowledge, which will greatly blur the boundary between teachers and students. If teachers fail to timely transform their educational and teaching philosophies and methods, it will inevitably affect students' learning and even their future career development. Specifically, teachers of art and design majors in colleges and universities should establish sound

digital-intelligent teaching concepts and lifelong learning awareness, strive to improve their digital teaching capabilities and literacy, adhere to the principles of intelligence and democratization to build a harmonious new teacher-student relationship, and encourage students to learn independently and conduct cooperative inquiry, thereby better supporting students' learning and development. In addition, teachers should also establish an interdisciplinary teaching philosophy, integrate knowledge and skills from fields such as computer science, artificial intelligence, and big data analysis with the help of AIGC technology, and incorporate them into art and design teaching, so as to cultivate students' awareness and ability to carry out art and design creation using AIGC technology [10].

4.2. Innovating the teaching content of art and design

Against the backdrop of AIGC technology, the innovative design of art and design teaching content in colleges and universities is a key approach to enhancing professional teaching effectiveness and the quality of talent cultivation. Firstly, universities should attach importance to optimizing the art and design curriculum structure. For instance, they can offer different types of courses based on students' actual needs and their mastery and application of AIGC technology, such as adding courses on "Design and Artificial Intelligence Application" and "Interdisciplinary Practical Operation." These courses can be further developed, supplemented, and improved based on AIGC technology platforms, thereby further optimizing the art and design curriculum structure. Secondly, universities need to adjust the proportion of art and design course content. In addition to basic theoretical teaching with fixed formats, they should increase the proportion of practical teaching and AI operation training. Meanwhile, regular international academic exchanges should be organized for students to broaden their knowledge and horizons. Finally, colleges and universities can establish teaching resource databases using AIGC technology. Teachers are required to upload prepared electronic lesson plans, micro-lecture videos, etc., to online teaching platforms; students should also be allowed to upload their learning outcomes and art design works. This facilitates the joint construction and sharing of teaching resources, thus providing new ideas for the innovation of teaching content [11].

4.3. Enriching art and design teaching methods

With the support of AIGC technology, the teaching methods of art and design in colleges and universities can be further enriched, which helps better meet the learning needs of different students. For example, teachers can rely on project-driven teaching methods, actively cooperate with enterprises, and jointly design art and design project tasks for students. For instance, students can be asked to use AIGC technology to carry out an art design creation project of "corporate visual identity," integrating AIGC technology into the creation process to fully demonstrate their ideas and creativity, to achieve the goal of cultivating students' practical ability and artificial intelligence technology application ability [12]. In teaching practice, teachers can first divide students into scientific groups, encourage them to conduct in-depth research on corporate image and corporate brand strategy in the social market, to guide students to fully understand market demand. Then, students can use AIGC technology for creative design, plan the functions of corporate visual identity, and conduct intelligent corporate image model testing. In this process, teachers can also invite industry experts and enterprise mentors to participate in guiding students' practical operations, thereby helping students design products that are more in line with artistic aesthetics and market demand [13]. In addition, to further enhance students' learning experience, teachers can let students take on roles or use virtual reality equipment to communicate with customers. This can help students fully understand customer needs, thus making their designed works more targeted and practical.

4.4. Optimizing art and design teaching evaluation

The application of AIGC technology can further strengthen the monitoring of teachers' and students' teaching behavior data, which is conducive to improving the accuracy and scientificity of teaching evaluation [14]. In college art and design teaching, teachers can use AIGC technology platforms and related digital auxiliary teaching tools to timely understand students' classroom participation, learning progress, practical situation, practical results, etc., and conduct in-depth analysis of students' relevant behavior data, thus better ensuring the effectiveness of students' process evaluation. In this process, teachers can also ask students to upload their designed artworks to public online platforms and invite subjects such as industry experts or front-line designers in the field of art and design to participate in the evaluation, thereby improving the comprehensiveness of teaching evaluation.

In addition, it is worth noting that teaching evaluation includes not only the evaluation of students but also the evaluation of teachers. Therefore, under the background of AIGC technology, the teaching reform of art and design majors in colleges and universities should also pay attention to this point. In practice, colleges and universities can evaluate the organization of teachers' teaching process. For example, AIGC technology platforms can be used to automatically collect data and information on teachers' teaching activities, such as the number of high-quality teaching resources released, the coverage of classroom teaching content, the application of teaching evaluation methods, and the frequency of interaction with students, to increase teachers' attention to teaching with AIGC technology [15].

5. Conclusion

In conclusion, with the continuous development and progress of modern science and technology, the rise and application of generative artificial intelligence (AIGC) are gradually penetrating every corner of the art and design field, which undoubtedly brings new directions and ideas for the reform and development of art and design education in colleges and universities. Under the background of AIGC technology, the reform of college art and design education can be realized through various measures such as updating art and design teaching concepts, innovating art and design teaching content, enriching art and design teaching methods, and optimizing art and design teaching evaluation, to cultivate students into compound talents who not only have a solid professional foundation in art and design but also are proficient in AIGC technology application.

Disclosure statement

The authors declare no conflict of interest.

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