

The Application of Computer Technology in China Art Education

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Abstract: *The application of computer technology in the field of education can bring about great changes, not only the application of computer as a tool, but also includes the development of network technology based on computer technology, mobile phone terminal application technology, and use network technology as a supporting structure, to promote the invention and use of online teaching platform and a variety of mobile education software. According to their purpose and function designed, they can be classified to three parts, it will be the systems to manage teaching progress, learning activities, communicate platform and results database. Application of computer technology in art education has experienced the "Internet popularity - start layout - application platform - smart campus" overall construction stage, showing a new look of "Internet + art education" in China. Compared with traditional educational means, they all make Chinese art education more vivid, cordial and interactive, although there are still many problems in the application of computer technology to art education, in the future of 5G technology mature, big data and digital technology, there will be more new computer technologies and new computer technology achievements applied to art education, will bring more promotion and possibilities to the education industry.*

Keywords: *Computer Technology, Art Education, Mobile Education Software*

1. Introduction

Art education was once too stereotypical for students. People usually think art education as a very professional course, that its learning process is mainly a lot of monotonous skill practice, its education content is very boring, or the content of art education will become very abstract, its education process is very emotional, it is difficult to quantify and visualize. No matter which of the above understandings is hold, it is not conducive to foster people's interest in art education, and it is harmful for teachers to describe art phenomena and interpret art problems vividly.

But with the help of computer technology today, art education may take on a new look, especially in such a digital era with rapidly developed computer technology, and widely used of virtual technology, big data. Based on this, this presentation discusses the application of computer technology in art education.

The wide application of computer technology, changes the world's production and living ways, although art feels lack of contact with this tight logic technology, but in art education, computer technology can be massively utilized in the process and the resources construction of teaching, and this trend is becoming more and more extensively and specially, also the technical intensity is getting higher and higher.

2. Background

At the beginning of the 21st century, foreign developed countries have completed of high school education system network layout using computer and information technology, computer technology has been deeply applied into teaching process and teaching management in various fields. Take Britain, the United States and Japan for examples, since 1998, the British government and the Department of Education and Technology have planned ICT (Information and Communication Technology) as the core content of British university education reform. And continue to invest in the project until the university information campus construction is completed.

In 1990, Professor Kenneth Green of Claremont University in the United States first proposed the "information campus" (ICP, Campus Computing Project) , and proceeded to track the information

construction of each university every year, until 2004, the modern network layout of each university was basically formed. In 1997, The Ministry of Education of Japan, which has a similar traditional cultural background with China, formulated the Education Reform Plan and began to establish a nationwide information-based campus network.

There are still many problems in the application of computer technology to art education in China, and there are serious deficiencies in the "smart campus" and the deep integration of computer technology and education. However, with the advent of mobile Internet, especially 5G era, information education in Chinese colleges and universities has made a refreshing improvement, showing a new look of "Internet + art education". [1]

3. Concepts

The promotion path of Internet and university informatization construction in various countries can be divided into "Internet popularization - initial layout - application platform - overall construction - smart campus" and other stages. Therefore, in this paper, the computer technology applied in art education is classified and described according to the levels of "smart campus - overall construction - application platform - auxiliary tools", and the computer, Internet and big data algorithm are regarded as the technical support.

3.1. Smart Campus

Smart Campus is an intelligent and smart environment of teaching, learning and living, which is based on the Internet of Things and application services. It consists of teaching, research, management and campus life. It is the most complex integrate use of various computer technology include internet technology, computer hardware, computer algorithm, computer software and mobile phone software with is commonly called as APP. But the Smart Campus has different name in different countrys and campus, as Informationized Campus, Intelligent Learning Environment and "Internet plus" education.

3.2. Informationized Campus

Information-based campus refers to the network environment and data center as the basis, with digitization as the main form, with information resource construction as the focus, with information application system development as the breakthrough, with overall union, resource sharing, and resource integration as the technical line. Take the modernization construction road of overall development, benefit development and characteristic development, realize the overall series orderliness, digital network of technical means, scientific standardization of management mode, flexible diversification of service mode, and provide an information platform for network teaching, simulation experiment and scientific management. In order to improve the quality of talents, to improve the level of education services, and to explore the information construction suitable for the current characteristics of colleges and universities. [2]

3.3. Intelligent Learning Environment

The intelligent learning environment to be studied in this paper is mainly to integrate the relevant laws of learning into the intelligent learning environment, and to explore the changes that laws can lead to the intelligent education environment. It needs to reconstruct the campus informatization on the basis of the digital campus, that is, to establish a smart campus and create a space-time campus environment with certain wisdom, so as to facilitate the users in the campus to set up seamless connection with the Internet by means of various smart terminals.[3]

The intelligent learning environment for art education constructed in this article is a new form of learning that solves problems encountered in traditional teaching, enhances classroom decision-making analysis and interaction capabilities, and improves classroom teaching quality and efficiency. It can implement dynamic learning analysis and evaluation. By using big data learning analysis technology to provide dynamic assessment and feedback, teachers can quickly make dynamic diagnostic evaluations of the entire process of student learning and reorganize teaching and process structure. By the adoption of the intelligent classroom information platform, the communication between teachers and students becomes fast and three-dimensional. At the same time, it will push the learning resources in time if needed.

The construction of intelligent learning environment for art education based on “Internet plus” is a new teaching form based on data learning analysis and mobile learning terminal use. It is an information-based classroom teaching system composed of platforms, people, and their activities, The “Intelligent Learning Environment for Art Education” is composed of five parts: teaching process, mobile terminal, application support, big data evaluation and resource service.

3.4. Overall construction design concepts

3.4.1. “Internet plus” education

“Internet plus” education is to use the Internet model to reshape the content and system of education on the basis of a clear understanding of the nature of education, rather than simply moving offline education to online. “Internet plus” presents new system and new structure. The essence of “Internet plus” is fragmentation and reconstruction, which embodies the “view” of technology.[4]

3.4.2. Digital education

These are technologies which, promising AI-enabled enhancement of student experience and engagement, feed off the data-exhaust of students – their log-ins, progression data, assessment results, attendance record, library loans and more. [5]

3.4.3. Multimedia education

Multimedia education combines five basic types of media into the learning environment: text, video, sound, graphics and animation. In the teaching process, according to the characteristics of teaching objectives and teaching objects, modern teaching media should be rationally selected and used through teaching design, and organically combined with traditional teaching means to participate in the whole teaching process, thus providing a powerful new tool for education. The multimedia platform was established to realize the integration of other art forms, such as film and music, then enrich the vision of study.[6]

4. Problems

What is the influence of computer and network technology on art teaching? What kind of effect and phenomena in art education are the result of the applied of computer and network technology in art education. Since the apply of computer and network technology in art education is so important and needed, then what are the advantages of using computer and network technology in art teaching and learning process? In which way dose computer and network technology in art education will show great advantage then the tradition methods? Is the computer and network technology used in art education really better than the tradition methods? Is it in the big talk about its advantages while there is no negative impact at all?

5. Hypothesis

The integration of computer and network technology with art has greatly exploited new forms of teaching, promoted the optimization of teaching process and improved the teaching efficiency. The application of computer and network technology in art teaching has obvious advantages. The positive advantages of computer and network technology outweigh the negative effects.

Application of computer technology in art education has experienced the "Internet popularity - start layout - application platform - -smart campus" overall construction stage, although some areas in the first few stages did not make full development, such as teaching methods are not advanced enough, but with the advent of the era of 5G, big data and digital technology can be used as a transitional phase skill, to achieve a “corner overtaking”, with the help of mobile Internet, to realize "Internet + art education".

6. The impact of computer using in art education

Using the computer technology in art education can change the student’s learning attitude from passive acceptance to active learning, stimulate students' enthusiasm for learning, but also can be abstract into concrete, by using videos and pictures, so that students can further master the key and difficult contents, easy for students to grasp.

Using the computer technology in art education can replace the fine manual work, reduce the repeated labor, improve the efficiency. When special electronic tools are provided by computer technology to replace real materials with virtual methods, which saves teaching costs and reduces the demand for teaching conditions. We can use three-dimensional technology such as cartoon, flash to substitute traditional two-dimensional cases, make the teaching display effect more vivid and moving.

The computer technology used in art education can be a realistic simulation method provided, which enables teachers to express the teaching idea easily and accurately. Many universities are more interested in real teaching experience and teaching interaction. Winchester Arts College mostly adopts "theme-project teaching", in which students are trained professionally with real projects. The college establishes a real situational training room, so that students can experience the real design environment of front-line enterprises in the school.

The computer technology and hardware can do large and inexpensive databases calculate and simple copying techniques have been developed to enable teachers to access teaching resources easily.

7. The importance of computer using in art education

Introducing computer technology in is the need of art education development itself. The artistic spirit to be cultivated in art education is to provide people with a living environment that is more cater to the scientific and artistic spirit, and to create objects that do not exist in the world but serve people better. Integrating advanced computer technology with traditional art has injected new vitality into the ancient traditional art education.

The actively introduction of computer technology is the need of continuously expansion of art education content. The using of these new computer technology inspire the design thinking of the students and teachers, influenced by it, not only teachers' teaching design has changed very fresh, and, more importantly, students in the learning process, have much more unic understanding of the artistic creation and new point of view, they use this kind of angle to carry on the design thought, and created a lot of amazing achievements, For example, digital media art, which combines traditional national art with digital technology, has produced many traditional cultural works full of modern art styles. The ability to use computer technology has become to one of the basic professional abilities of teachers now.

8. Types of the application platform

The computer application platform of art education usually contains various auxiliary tools, and utilize different computer algorithm technology. So, this acritical will classified them according to their purpose and function designed, it will be the systems to manage teaching progress, learning activities, communicate platform and results database.

8.1. Teaching Management Software

Teaching management software is a comprehensive management tool for the school teaching process, teaching business and teaching quality, aiming at improving the level of teaching management. The integrated network system provides diversified guarantee of informatization, digitalization and intelligentization for teaching. At the University of West Virginia's Digital Storytelling course, for example, students who use a "one" card to log into the campus network can also log into the integrated Ecampus (electronic Campus). Join the Digital Storytelling class and participate in the online course interaction, one of them is course selection system software, that is commonly used in campus nearly everywhere.

8.2. Learning and communicate system software

The learning system mainly faces students as users, As far as possible to promote communicate about ideas of learning among students with students and teachers, also aims to create a good learning atmosphere, and the team cooperation spirit, learning system not only supports the students to view lesson on line, upload assignments, find information and other activities as a client, anytime and anywhere using the Internet or mobile phones, but also offers a wide range of communication space, Various communicate technology designs are loaded, including group discussion space, message board, post bar, personal space, etc. For instance, Intern in Design course workshop can set up a group on Facebook,

and members can upload their work to the group on social media at any time, with real-time updates for comments and suggestions. Another case is Studyplus in Japan. Studyplus is a very popular learning social platform in Japan. It can not only record learning data graphously, but also guide users to add friends with the same content as their learning according to the calculation of big data, and see the learning dynamics of their friends in the TimeLine. Those kind of Learning and communicate system design ideal cause to a concept called Smart Classrooms.

8.2.1. Smart Classrooms

The teaching process is an application manifestation of smart classrooms. It consists of spiral closed loops before, during, and after class. Usually, the pre-class links include academic analysis, preview assessment, and teaching design. The intra-class links cover topic introduction, inquiry learning, real-time detection, and summary improvement. The post-class links encapsulate homework, micro-lesson guidance, and reflection evaluation.

(1) Smart mobile terminals for teachers and students. It provides teachers with “teaching” and students with “learning” application tools, and implements communication and information service support methods for pre-, during-, and afterschool teaching.

(2) Teaching application support system. The system is a teaching application support platform for smart classrooms, providing intelligent terminal learning, management, and application service functions, including micro-lesson production, micro-lesson applications, learning resource push, communication tools, third-party APP applications, and so on.

(3) Big data evaluation and analysis system. This system is the core subsystem of a smart classroom. Based on big data learning analysis, it provides formative, summative, and diagnostic evaluation services for the quality of learning and teaching, including test systems, teaching quality evaluation systems, and dynamic learning evaluation analysis systems.

(4) Teaching resource management and service system. It provides management and service support for learning resources based on curriculum standards, general electronic teaching materials, various question bank systems, dynamic teaching data, and educational management information.

A Smart Classrooms design has several names by different developer too, but they are designed in the similar form, one of them in China is called “学习通”, it is the “super star” learning center.

In “super star” learning center APP, teachers can upload teaching documents before class begin, and students can read and learn the materials uploaded by teachers on their mobile phones. In the classroom, teachers set check-in, investigation, answer, questions and other interactive activities through the “learning center”; after class, students can upload files, pictures, videos and other tasks assigned by the teacher. The APP can also monitor students' learning effect through “classroom report”, “learning situation statistics” and “achievement statistics”. Taking Shanghai area as an example, there are more than 400 “super star” learning center mobile terminal courses of humanities and arts have been built in art education disciplines in universities.

8.2.2. Online Learning Website

A learning platform integrates learning resources and learning process, based on the website, tracking the whole management of students' learning process, it is the most frequently used instructional computer technology, and have lots of items, there are several famous one below.

(1) Coursera. The first batch of cooperation institutions include Stanford University, the University of Michigan, Princeton University, the University of Pennsylvania and other top US universities. More than 1.5 million students from more than 190 countries and regions have signed up for their courses.

(2) MOOC (Massive Open Online Course). MOOC aims to enabling learners to learn the best university courses at home and abroad without leaving home. In China alone, more than 500 universities have built and launched 5,000 MOOCs, and the number of people studying on MOOC has exceeded 70 million, among which humanities and arts courses account for nearly 30 percent. With the help of MOOC resources, more and more teachers are starting to teach in “flipped classrooms” or through micro-classes to assist teaching.

8.3. Forms of course constructed by computer technology

To be specific to the newly form of course constructed by computer technology, it mainly includes these forms, Micro-course, Live lesson

8.3.1. Micro-course

Micro-course is a kind of course form produced by computer technology, which can be used in various digital or online teaching platforms. Its main carrier is short video, which itself is an audio-visual art. A good micro-course can enable learners to be imperceptible under the influence of art.

8.3.2. Live lesson

Its biggest characteristic is the real time, the teacher making use of network technology in all kinds of video platforms or special live lesson platform for teaching, student can remotely be involved in curriculum, course time and broadcast media is fixed, learners and teachers can interact at any time is its advantage, both parties conduct discussion or display on screen.

8.4. Computer auxiliary tools in education

8.4.1. Virtual Technology tools

By digitizing the real environment, imitate the virtual environment to achieve the simulation of reality, relying on abundant computer operations. Through VR teaching resources, text can be converted to graphics, illustrations can be converted to animation, and short video can be embedded in digital media design. [7]

8.4.2. Digital Art

Only 25 percent of movie Avatar was filmed on traditional locations, while the rest was done using digital media technology.

8.4.3. Communicate Tools

Tools for clients to transmit voice, text based on the Internet, including but not limited to: WeChat, QQ, Tiktok, WeChat software has more than 600 million users.

8.4.4. Image processing software

Tools for teacher to make teaching content and provide more vivid and detailed teaching resources, such as: Action movie fx, shot five seconds or more of footage with a mobile phone and select different stunt modes, then it can automatically generate shots of missile attacks, car explosions and other scenes similar to Hollywood blockbusters, Adobe Photoshop, a famous image production software.

9. Conclusion

According to the characteristics of different disciplines, the application of computer technology in the field of art education also reflects the style of different disciplines. Different disciplines show differences, and focus on different computer technology and show certain preferences. The most obvious example is the major of art design, which actively and extensively uses various advanced computer technologies to increase the interaction, experience and innovation in teaching, such as virtual technology and specially developed computer design software. In the Course of Graphics Design, while text layout is explained, with the help of H5 website, students can practice the word spacing, line spacing, direction and position of text online. After finishing, they can click "Calculate scores" to view the exercise results, which greatly improves students' interest and participation.

Since the "Internet +" era, with the help of big data, artificial neural network and in-depth learning skills, artificial intelligence technology is changing the status quo of traditional professional art design.

With the continuous development of computer technology, especially the information technology, which has changed the style of common lives. For art education, the content and the pattern of education will change along with the progress of the computer technology, as the new digital media rapidly developing, the new technology and new achievements have been applied in the process of art education, to inspire the students' creative inspiration.

"Internet + art education" is not just a simple addition of "1+1=2", but a combination of "1+1>2" benefits, achieved by "Internet + art education" through the innovation and flexible application of art educators.

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