DIGITAL TECHNOLOGY SUPPORTED MODEL IN PAINTING DESIGN TEACHING

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Abstract

The objectives of this study were firstly, solution problem component in painting design teaching impact, secondly digital technology supported model development in painting design teaching effected, thirdly, digital technology supported model evaluation in painting design teaching effected. The sample consists of 21 experts in China who had very good education in painting design background. The structure design questionnaires were used for interviewing. Statistical for data analysis were median and quartile.

The results of this research revealed that the impact of painting design teaching included 5 problem-solving solutions: utilization of teaching resources, quality of education research, classroom instruction, student development, and quality assurance. The development of a digital technology-supported model in painting design teaching affected 19 influencing factors, with 5 factors each for both teaching resource utilization and education research quality. Meanwhile, there were 3 factors each for classroom instruction, student development, and quality assurance. Therefore, the establishment of a theoretical framework for the development of a digital technology-supported model in painting design teaching has been unanimously affirmed by experts, demonstrating high feasibility.

Keywords: Painting Design Teaching, Digital Technology, Teaching Quality

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Chapter 1
Introduction

Rationale

With the deepening of the fourth educational revolution, digital educational resources have an increasing impact on digital art content, teaching forms, teaching methods and teaching models. The development of digital art education resources and the improvement of art classroom teaching efficiency are the goal and inevitable requirement of art reform. Digital technology as a fundamental element and revolutionary force is profoundly changing the mode, pattern and ecology of knowledge dissemination. Education is the main field of knowledge dissemination, and the embedded integration of digital technology in educational knowledge dissemination has had an all-encompassing impact on the educational system, spatial layout, environmental field, industrial development, media application, resource construction, teaching mode, knowledge perception and subject relationship (Xue, 2023). However, at present, many schools still face many challenges in implementing digital arts teaching.

Firstly, despite computer painting being included in the curriculum, students have very limited opportunities to learn digital art in computer labs, with many teachers still relying on traditional manual painting instruction. Secondly, due to variations in students' painting levels and computer basic skills, it is challenging to meet the learning needs of all students with the teaching content. Furthermore, traditional passive learning and mechanical training methods fail to effectively cultivate students' learning independence, autonomy, and creativity, posing significant challenges for art teachers to address.

As a new teaching mode, micro-video teaching resources have the unique advantages of micro-video teaching resources, which can be utilized for pre-course learning as well, but also for classroom presentations, allowing students to review the content repeatedly to meet the needs of students at different levels. As one of the main forms of new media communication in the modern information age, micro-video is intuitive and vivid, audio-visual, and has its unique advantages in the implementation of the subject curriculum, transforming the learning mode of

students' independent cooperation and inquiry, and improving the quality of ideological and political education, etc., and it is also an educational resource that is enjoyable to students (Hu, 2023). The digital technology-supported model not only solves the shortcomings of traditional passive learning, but also effectively cultivates students' independent and collaborative learning abilities.

Therefore, this study aims to explore how to utilize the painting design and teaching model supported by digital technology as a technical means to help improve teaching quality.

Research Questions

How does develop and evaluate the effective digital technology supported model in painting design teaching?

Research Objectives

1. To study the impact of problems and resolution on effective painting design teaching.

2. To develop an effective model supported by digital technology in painting design teaching.

3. To evaluate the effective digital technology supported model in painting design teaching.

The Variable

Independent Variable

According to the analysis of relevant theories and research,the characteristics of digital technology support models in painting design and teaching are as follows:

1. 1.Utilization of educational resources.
2. 2.Teaching reform.
3. 3.Classroom teaching.
4. 4.Student development.
5. 5.Quality assurance.

Dependent Variable

Digital technology supported model in painting design teaching.

Research method

1. Using the questionnaire.

2. The interview methods.

3. The EDFR (Ethnographic Delphi Future Research) type of prospective study is adopted, which requires a collection of expert studies to gather data from 21 individuals.

4. Using focus group discussion.

Population

21 persons with professional knowledge in painting design teaching or someone who have expertise in digital technology teaching.

Time

The researchers research time was from March 2023 to April 2024.

Location

China.

Advantages

1. To digital technical support for painting design and teaching mode can provide more use of educational resources and tools, help teachers to better teach knowledge and skills, thereby improving the quality of art education.

2. To digital technical support for painting design and teaching models can promote cross -disciplinary education, enable students to establish contact between different fields, help students cultivate digital literacy and skills, and improve students' ability to solve practical problems.

3. To digital technical support for painting design and teaching models can empower teachers with high-quality development pathways, thus contributing to their professional development.

Definition of Terms

Utilization of educational resources Teaching resources refer to the various conditions provided by the effective development of teaching,usually include textbooks, cases, film and television, pictures, courseware, etc.as well as teachers' resources, teaching aids, infrastructure, etc. content.

Teaching reform The quality of education refers to the degree to which the level of education is high or low and the results are favourable or unfavourable. It is ultimately reflected in the quality of the people it trains. The criteria for measurement are the aims of education and the objectives of education at all levels and in all types of schools.

Classroom teaching Classroom teaching is a means of use in education and teaching. It is the entire process of teaching knowledge and skills to students. It mainly includes all teaching aids used in teachers, students, teaching activities and teaching processes.In this study, the concept of classroom teaching also includes teaching tools using digital technology in class.

Student development Student development refers to the process and results of the physical and psychological aspects of the body and psychological aspects of the body and psychology under the interaction of students' inheritance, environmental and school education, and self -internal contradiction movement.

Quality assurance Quality assurance is a concept of quality management, and it is a part that is committed to providing trust in quality requirements in quality management. The quality assurance of this study refers to the school's goal of ensuring and improving the quality of teaching, using the principles and methods of the system to set up unified and coordinated organizations, and strictly organize the teaching quality management functions of various executive units and aspects to form a one with one. Clarify the organic whole of teaching quality management of tasks, responsibilities, authority, cooperation, and promoting each other.

Digital Technology Support Model Digital technology-supported model means that information is expressed and transmitted through digital signals or coding, and can be processed using various computer programs. It encompasses a comprehensive teaching process of technological change.

Painting Design Teaching Painting design teaching means the teaching process of planning and layout according to art teaching content,teaching objectives, teaching methods and teaching.

Delphi Study Delphi Study is a group decision-making behavior,which has the characteristics of anonymity,feedback and statistics, and is essentially based on the professional knowledge,experience and subjective judgment ability of many experts.

Focus group discussions Focus group discussions,also known as panel discussions, take the form of a mini-symposium in which a trained facilitator talks to a small group of representative and authoritative experts in an unstructured,natural format.In this way,an in-depth understanding of the issue is gained.

Research Framework

The framework is based on a digitally-supported model for teaching drawing design with 3 research objectives, and then refined with elements based on relevant literature studies and expert interviews.First -level index reference Cai Linghao (2015), Chen Yuezhong (2019), Du Chunlan (2015), Fu Keqin (2017), Beth Chatto (2018), Karantzalos (2020), R.M.Capraro & M.M.Capraro (2022), Hargreaves (2022), Reference to secondary indicators derive Luo Baoquan (2020), Bai Jie (2021), Zhang Shaogang & Yin Shuangxu (2014), Wang Ling & Chen Li (2020), You Jie (2010), Chen Yue (2018), Chen Huixin (2021), Ye Dan (2023), Lai Qingmei (2021), Wang Fang (2024), Zhang Hui (2024), Yang Jialin (2020), Wu Zeping (2023), Xu Liqun (2022), Li Li (2020), The following criteria. Details are shown below:

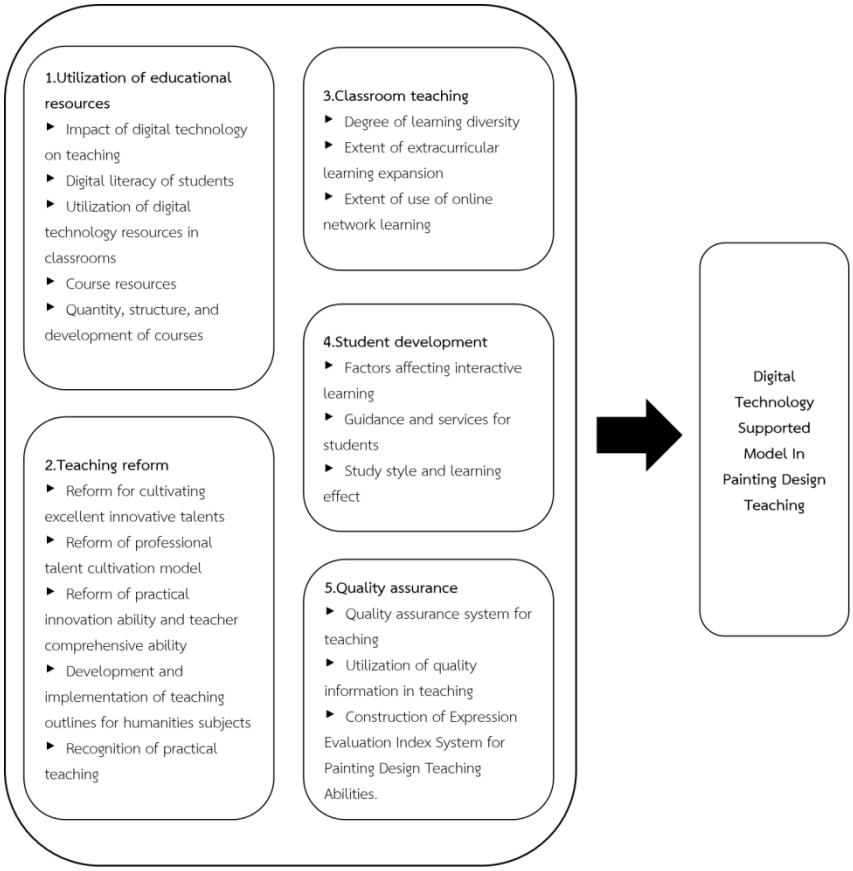

Figure 1.1 Research Framework

Chapter 2
Literature Review

In the study of "digital technology support painting design and teaching model", researchers have studied research on the following documents. It will be explained in detail from the following aspects:

1. Digital technology.
2. Painting design teaching.
3. Digital technical support model in painting teaching research.
    3.1 Utilization of educational resources.
    3.2 Teaching reform.
    3.3 Classroom teaching.
    3.4 Student development.
    3.5 Quality assurance.
4. Delphi method.
5. Focus group.
6. Related research.

Digital Technology

Concept of digital technology

Digital technology is a technology born in market demand with the iteration of the Internet. In terms of academic concepts, it is a technology that can transform various information (the carrier of the information is graph, text, sound, image, or other) into a language that can be identified by a computer for processing, storage, analysis, and transmission technology.

In the study, the specific type of digital technology is an important way to understand the connotation of digital technology. The listing method is conducive to presenting the category of digital technology through simply induction. However, the enumeration method cannot clarify its essential connotation, resulting in unclear concept boundaries and inadequate academic dialogue. Compared with the continuous addition of technology types that have been dynamically developing, some scholars pay more attention to the constituent elements of digital technology.

Nambisan (2017) defines the key performance and main applications of digital technology in entrepreneurial activities and divides them into three elements: digital components, digital infrastructure, and digital platforms. This method is currently widely accepted. In earlier research, the foundation of digital technology was considered to standardize information and enable organizations to quickly encode, store, formalize, and distribute knowledge through information and communication technology systems. Subsequently, a deeper understanding of the connotation of digital technology revealed that it includes four levels: equipment, network, service, and content.

Digital technology can be embedded in existing technologies, products and services, mainly manifested as three elements: digital components, digital platforms, and digital infrastructure. Digital components refer to applications or media content with specific functions and values embedded in digital products or services, such as mobile apps, electronic chips, trackers in car navigation, etc. Digital platforms refer to a group of shared, universal services and architectures, such as IOS systems and Android systems such as scalable operating systems or open source network communities. It is an important carrier of digital components. This element is the key direction of this study. Digital infrastructure refers to digital technology tools and systems that provide communication, collaboration or computing capabilities, and can support resource agglomeration, such as network platforms,online communities and 3D printing channels that provide computing, communication and resource agglomeration channels.

This study believes that digital technology refers to the improved information and communication technology or system, which includes both the physical parts such as digital hardware, as well as logical parts such as network connection, access and operation, but also include data, products, platforms, and infrastructure results parts. Essence For example, the virtual space brought by the development of cloud technology has greatly improved the calculation, storage, processing, sharing, and management capabilities of data.

Features of digital technology

The field of information systems emphasizes digital technologies that are independent of the physical characteristics of tissues. Taking digital components as an example, it summarizes the editability, addressability, perception, communication

ability, memory ability, traceability, and associativity of digital technology. From an application perspective, it is believed that digital technology provides potential for specific users or situations through its technical capabilities. For instance, it can manifest as genetic characteristics that spontaneously generate changes by realizing behavioral possibilities in the process of innovation. Additionally, Cai (2019) also summarized the scalability and associated characteristics of digital technology based on existing research.

Currently, there is a lack of systematic research on the classification of characteristics of digital technology. Xie (2020) categorized features of digital innovation into three main types: computation, communication, and perception. Building upon this work, Guo & Yang (2021) further refined the classification by introducing a fourth category-application-in addition to computation, communication, and connection based on functional attributes.

Digital technologies, represented by digital components, perform extensive modification and iterative calculations. Communication characteristics emphasize the unity and markup of digital technology itself while connectivity features highlight the interactive function of digital technology carriers within their environment. These communication and connection features serve as crucial foundations for establishing digital platforms or networks. Application characteristics underscore the explicit function of digital technology.

Based on this classification, this article studies the characteristics of the application -like feature emphasizing the explicit function of digital technology.

With the continuous development and progress of science and technology, digital technology has become an indispensable part of our society. In this digital era, the theory and concept of digital technology have been continuously evolved to meet changing needs and challenges. Digital technology refers to the use of digital signals and data for information processing and transmission. It includes computer science, information technology, communication technology, data science and other fields. The importance of digital technology is that it has profoundly changed our lifestyle, working method and social structure. From smartphones to cloud computing, from social media to artificial intelligence, digital technology has penetrated into almost all fields.

In the field of digital technology, some classic theories and concepts have been guiding research and application. Including the content:

Information theory: Information theory was proposed by Claude Shannon in the middle of the 20th century, and it studied the quantitative, compressed, transmitted and protected of information. This theory not only has far -reaching influence in the field of communication, but also plays a key role in the fields of data compression, cryptography, and error correction (Shannon, 1948).

Calculation theory: The calculation theory studies the basic principles and limitations of the calculation process. The concepts of Turing machine, complex theory, and automatic machine theory help us understand the working principle of the computer and the calculation of the problem solving (Turing, 1930).

The concept of data mining and machine learning: There are many pioneers in the concepts of data mining and machine learning, including Claude Xiang nong, Turing, Herbert and McCarthy. In recent years, the rise of deep learning has been driven by Hinton. Accelerating the progress of machine learning (Imielinski& Swami, 1993).

Quantum calculation: Richard Feynman introduced the concept of quantum computing, leveraging the principles of quantum mechanics to address computational challenges beyond the capabilities of classical computers. Subsequently, David deutsch and peter shor made significant advancements in the theoretical framework of quantum computing (Nielsen & Chuang, 2020).

IOT: The concept of the Internet of Things was first proposed by Kevin Ashton that he believes that the physical world to connect with the digital world through the Internet can achieve more efficient information flow and automation (Atzori, Iera, & Morabito 2010).

Artificial intelligence and deep learning: Artificial intelligence (AI) and deep learning are the hotspots in the current digital technology field. The neural network and deep learning model have achieved great success in the fields of image recognition, natural language processing, and medical diagnosis (Bengio & Bengio, 2016).

These characters and concepts represent important milestones in the field of digital technology, providing a solid foundation for its development and evolution.

In the digital age, digital education is an important indicator of the education level of a country, and it is also a necessary way to achieve modernization of education. China, in June 2016, the Ministry of Education released the "13 -year and Five -Year Education Information Plan". The plan proposes to "cultivate teachers' ability to use information technology to analyze and personalized teaching and enhance its innovative education and teaching ability information. The environment and information - based teaching is indeed the standard of teachers' teaching activities "(Ministry of Education, 2016). Since the 19th National General Assembly, China has always regarded education digitization as a systematic transformation in the system, supporting and leading the modernization of educating modernization. In April 2018, the Ministry of Education released the "Education Information 2.0 Action Plan". The plan once again clearly said: "The core concept of compliance with digital technology and education, and continued to promote the in - depth combination of information technology and education and strengthening. Study the Sustainable Development Trends of Education Digitalization" (Ministry of Education of China, 2018).

Digital technology understanding in education fields

The basic connotation of digital education in the information age is to build a smart learning environment, adopt digital teaching methods to promote learners to conduct smart learning, and then cultivate people with high intelligence and creativity; It continues to create products and values, and realize the adaptation, shaping and choice of dexterity of learning, living environment, and working environment (Zhu & He, 2012).

Digital education is a new form of education with high information support. It appropriately and effectively uses modern information technology, such as the Internet of Things, cloud computing, new shows, big data, multi -dimensional printing, virtual simulation and intelligence, to achieve intelligent teaching and intelligent learning, intelligent assessment, intelligent management, intelligent management, services and services, and Education to enhance students' senior thinking ability, innovation and creativity training (Chen & Wang, 2015).

The digital education under the perspective of technology intermediary has a cautious attitude. It is believed that the intelligence of technology and the wisdom of human beings are essentially different. The technology cannot change the essence

of education, and technology cannot change the new educational form. Therefore, the ideal development trend and state of "digital education" is the application of intelligent information technology in education. It will enable teachers and students to invest in the same time and energy in the original education and learning. learning result (Li, 2016).

Digital education is an educational form formed in the process of developing the core literacy of students. It is to gradually accumulate wisdom in promoting the core literacy of students to promote the development of students, and prepare for students' future life and development. Combine to welcome future challenges. Zhao (2014) Understands digital education from the perspective of the system, It is believed that it is a high-learning experience, high content adaptability and high teaching efficiency provided by schools, regions or countries. Can provide differentiated support and services to students, teachers, and parents, and can also promote fairness, continuous improvement of performance and breeding education through the data and teaching process data collected by them (Huang, 2014).

It is worth noting that the system/ecological perspective reflects the complexity of the interaction and dynamic balance inside and outside of the system.

From the analysis of the above researchers on the connotation of digital education, the impact and changes of digitalization on the current education and teaching are more important. With the "Internet+" concept, big data, cloud computing, and artificial intelligence applications in the field of education, not only not only The construction of smart campuses with "data technology" as the core, so that the various businesses of school education are shifting from management to governance, but also facing teaching. Intelligent applications have begun to support new learning methods such as personalized learning and adaptive learning. Studies have shown that compared with traditional methods emphasized by artificial intelligence, there is a significant positive impact compared with traditional methods Jia (2018). It can be seen that the new generation of information technology represented by artificial intelligence has greatly promoted the educational form towards intelligent and intelligent.

Painting Design Teaching

Concept cognition of painting design teaching

In the art of painting, traditional painting people need to support the support and embellishment of pen and ink, and in the digital era, people only need a computer with various drawing software and picture repair tools to start painting creation. The display replaces the drawing paper, the mouse replaces the brush, and the presentation of the work rely on the printer. Change the production method and production tools of art creation, and use the concept of virtual but minister to perform. A certain language structure determines a certain way of thinking. In computer painting, we need to consider how to generate a grid, expressing the material characteristics of the object by controlling the basic coordinates and finding the correct map method. Although the basic concepts such as colors and shapes still exist, due to their different ways of implementation, they indicate the change of their way of thinking. Adjusting the language and thinking methods in a timely manner with the times is the need for the progress of the times. For example, in 2021, at the "First international digital printmaking art exhibition" held in Hunan, China, digital prints are constantly recognized by the art world. From the exhibits in the exhibition, 150 works from home and abroad are fixed substances with fixed substance in The form exhibition, that is, they are presented by printing and micro -sprayed paper works. This is directly related to traditional prints. Judging from the language of the work, these works are obviously produced by graphic processing software, or the digital drawing of the image. The rise of digital technology, the maturity of digital image processing, has become a wind. Art works are created by digital tools and conveyed through computer language. The digital art exhibition held in the San Francisco Contemporary Art Museum in 2001 was named "010101". "010101" is the basic language of a computer. This digital technical language makes new possibilities of art creation.

In the process of combining digital art resources with art classrooms, it will take more considering the specific needs of students and support students' personalized development. In the process of learning art knowledge, students continue to understand the art classrooms The changes brought about, learning art knowledge, grasping relevant abilities, and at the same time make students improve their misunderstanding of art classrooms (Liang, 2017). The rapid development of

emerging digital technologies such as AI, Web3.0, NFT, and virtual reality in generators is deeply influenced and reconstructed the changes in the artistic professional forms, curriculum structure and talent training model of Chinese universities. The art education in the digital age needs to include three important aspects: creativity, technology and communication. We must adhere to the integration of technology and art, attach importance to the integration of practical teaching and industry, research, and research to cultivate cross -disciplinary composite talents.

Another characteristic of the digital technology era is that cultural products produced by artificial intelligence enter the human emotional field of human beings. Human emotions are considered the most essential sign of establishing human subjectivity, and they are also considered to distinguish between human and machines. However, in the 2020s, artificial intelligence entered the traditional field of artistic creation and spiritual production, and "AI writing poetry", "AI painting" and "AI calligraphy" broke through the boundary between humans and machines.

In recent years, AIGC (artificial intelligence generation content) in the broad sense has been involved in multiple types of creations including text, audio, images, and videos, and is widely used in literary creation, art creation, film and television production, news editing, corporate processes, corporate processes, corporate processes, and corporate processes Fields. In July 2017, the poem collection of "Xiao bing", the artificial intelligence writer "Little Bing", was published in China in China. This collection of poems is 100 hours "Xiao bing". After all the poets' works were completed, it was completed after it iterated. "Xiao bing" wrote a total of 70,000 poems, and the editor finally selected 139 original poetry editors and publishing, without any artificial color. Today, the versatile "Little Bing" can not only create ancient poems such as modern poetry and seven -character quatrains, but also launched the original collection of original painting and held a "individual" exhibition.

In the field of painting, in 2022, the emergence of technologies such as diffusion model, making AI generate images a reality. Use AI painting tools to generate beautiful high -definition pictures in a few seconds. On august 22, 2022, the AI painting algorithm stable diffusion (SD), which has a very fast speed and high artistic ornamental algorithm, announced an open source, which once again made AI painting a hot spot. The SD model can generate 512 × 512 pixels in a few seconds. In less than a month, SD has produced the total number of AI pictures has exceeded

the total number of works on the art station website in the past decades. On august 31, 2022, the painting "Theater Opera Spatial" generated by AI won the first place in the digital art competition in the Colorado Expo, USA. The technological innovation of "artificial intelligence technology + artistic creation" not only innovates the business model of the cultural industry, but also transforms the social soil of cultural innovation. The academician and linkage of art fiction and digital virtuality make them possible to create a world that is parallel and integrate with each other -the art world and real world, virtual world, and real world. Further cross -border online, realizing interaction and mutual benefit.

In principle, AI painting is essentially the output of AIGC based on databases and algorithms. In the final analysis, it is the result of the program. AIGC can achieve "superb technical beauty" because of super strong learning ability to existing works. The Copyright Law defines "works" as "the intellectual achievements that are original and can be expressed in a certain form of literature, art, and science." AIGC has infinitely approached the "works" created by human intelligence, and it has even been difficult to distinguish from human works in many fields. Human beings should better play the subjectivity of "people" and use AI's power to improve their creations. This is the progress of human civilization. We should appreciate it, regulate and manage it. Artists should even develop new areas at a higher position and thinking than AI level.

The key to digital technology can cross the line of art and content is the universal characteristics of digital technology. It has eliminated the natural boundaries of traditional art interval and content by establishing all artistic digital signs. Because digital art has no entity, it cannot be easily equated with the object, so the media category is difficult to locate it. Because digital art can eventually be restored to the same calculation symbol, the expression it provides is the same. The foundation of all reproduction is virtuality, which is mathematical abstract. All the symbols it provide are equivalent, no matter what media they are from.

Research on current painting teaching theory

Hu (2019) studied that The issuance of the opinions on the implementation of the national project on improving information technology application ability 2.0, the construction of smart classrooms and the improvement of teachers' information literacy are all boosting the continuous integration, innovation and development of

information technology and education and teaching. Digital boards, tablet computers and other electronic devices have entered the normal classroom, which has become an unstoppable development trend, which changes the way teachers teach and students learn, and gradually builds a digital art classroom.

Guo & Deng (2018) studied that from the development of network art resources before class to the digitization of art creation methods, as well as the extension of after-class communication and expanded learning, modern information technology has a more and more profound influence on the content and form of art teaching. The core qualities of fine arts, such as image reading, art performance, aesthetic judgment, creative practice and cultural understanding, are oriented to the largest range of students. The use of modern information technology to create digital art classroom can cultivate students 'digital learning competence, form correct aesthetic taste and aesthetic concept, cultivate students' ability to feel, appreciate and create beauty, so as to comprehensively improve students' art quality.

Zhang & Yao (2014) studied that 3dsmax 2014 animation design and production. The result of this research found that From the basic knowledge of software, by gradually explaining the example operation and skills, so that the beginners' software operation level has been greatly improved, become a high level of 3 D designer. At the same time, many chapters are used to make typical cases, and the basic knowledge of the chapters is applied to help readers further consolidate the knowledge of what they have learned. This book is detailed, clear thinking, illustrated, combining theory and practice, and makes a comprehensive introduction of 3ds Max 2014 through a large number of sample documents. This book is suitable for undergraduate and graduate students in universities, as well as readers engaged in the fields of animation and architectural design.

Lu (2017) studied that Analysis and study of the creative characteristics of digital painting and traditional painting. The result of this research found that Since ancient times, artistic creation has been an important driving force of China's social development, and also an important performance indicator of China's social development degree. In the 21st century with the rapid development of digital science and technology, the traditional artistic creation has also undergone great changes. The combination of traditional painting art and digital technology, which gives birth to digital painting technology, greatly promotes the application of artistic

creation in the development of Chinese social production. However, in the process of this combined development, it inevitably has a negative impact on China's artistic creation and development. Through the comparative study of the digital painting technology, the combination of artistic creation and digital technology, and the traditional painting technology, this paper obtains the positive and negative influence of the development of digital technology on the painting creation, and gives brief suggestions on the subjective and objective aspects.

Zhou (2018) studied that the application of traditional painting techniques in digital painting. The result of this research found that Art comes from life, and it is above life. Art is the expression of life at the ideological level, and eventually it will be return to life, and guide it forward. Through the current social science and technology is highly developed now. The paper summarizes the important application of artistic creation in the field of digitization. In the development of digital technology today. Painting creation only by taking its sail, and pay attention to avoid its wind and waves, in order to prosper for a long time.

Wang (2017) studied that study on the influence of digital technology on painting creation. The result of this research found that The Chinese government and the public should take into account its particularity and pay attention to protecting its diversity while making full use of its positive role in social development. The effective way to develop and utilize our artistic resources is to encourage the intensive cultivation and cultivation of artistic creation, improve the level and quality of artistic creation, and promote the development and prosperity of technology.

Tan (2015) studied that the study of the influence of digital technology on the shelf painting. The result of this research found that Artists who create painting should not forget the origin of artistic creation, and find or maintain the original intention of artistic creation. Contemporary, of course, there is no lack of artists who still do not lose their spiritual pursuit in their artistic creation, and have lofty ideals and pursuit of artistic creation. In the impetuous atmosphere of social development, contemporary artists should maintain their original heart, improve their own cultural and artistic accomplishment, find inner peace in cultural and artistic works, and return to the lofty creative passion for art in artistic creation.

Patkbad & Saracostello (2019) studied 1000 master paintings. The results of this research found that strengthening communication between teachers and

students and establishing a harmonious relationship between them are important in painting teaching. Painting teaching is different from other disciplines as it involves the appreciation of various works, including architectural appreciation. In traditional teaching methods, students often rely on the teacher's description or textbook illustrations to learn about these works, making it difficult for them to fully experience the beauty conveyed by these artworks.

The use of multimedia information technology can easily solve the aforementioned difficulties. Multimedia information technology can utilize its dynamic teaching mode to make the original abstract problem more apparent by adding images and concrete examples, enabling students to better perceive the aesthetic feelings conveyed by artworks. This enhances students' interest in learning painting and transforms their passive engagement into active participation, thereby improving their ability to think and learn independently. Additionally, it fosters a more harmonious relationship between teachers and students. However, multimedia information technology is only applicable within the classroom.

The role in teaching is obvious. However, after all, it is only a teaching method and cannot replace the teacher in the classroom. The guiding role of learning cannot fulfill the obligations and duties of teachers. Painting teachers should not only teach painting knowledge to students but also improve their aesthetic ability. Additionally, they should spend more time communicating with students to close the distance between teachers and students.

Adolf (2020) studied that the problem of form in painting art. Use multimedia to create classroom situations. The result of this research found that In the modern basic painting education, the cultivation, rendering, foil and grasp of the teaching atmosphere is crucial. Painting education is a kind of overall process of paying attention to the promotion and release of people's spiritual vitality and aesthetic emotion, which pays special attention to the teaching atmosphere. The use of multimedia computer means can make it easier for teachers to create a needed classroom situation to infect students, to achieve the purpose of aesthetic education. We can learn from TV programs, various audio and video products (videotape discs, etc.), computer networks, books and perceptual materials such as pictures, images and sounds needed for obtaining teaching in real life should be applied to classroom teaching. exploitation CAI. Technology, at the same time, gives students visual,

auditory and other comprehensive information, forming a kind of infection and impact on students 'various senses, so as to arouse their aesthetic and deep desire, so as to transform the passive acceptance process into the subject's inner impulse and requirements.

Oliver (2017) studied that Virtual Painting Art. The result of this research found that The use of high media assisted painting teaching can be simple, fast, intuitive to highlight the learning process, so that students can easily understand and understand, so as to shorten the teaching time, improve the teaching efficiency, (change abstract preaching to image demonstration, set pictures, Text, sound, image in one, rich in content, easy to modify, is the main features of CAI). The traditional painting teaching mode is "a piece of chalk, a mouth, a wall chart everywhere", mainly is the teacher to explain the demonstration, students practice consolidation, painting teaching often want to spend a lot of time and energy to explain knowledge, training skills, especially the introduction of some abstract knowledge, such as thinking about space. The training of the elephant force, sometimes spent a lot of effort to talk about the hype, mouth foam flying, but not necessarily can understand and master, and this is also May only one intuitive presentation in the multimedia can solve the problem. It is difficult for students to understand parallel perspective and Angle perspective, and it takes a lot of time to explain, and this part is difficult. In addition, in the multimedia, only from the form of the film screening, the use of the dynamic image, students can suddenly understand the changes and principles of perspective, the difficulties are easily solved, to achieve the effect of twice the result with half the effort.

Beth (2018) studied that the fine arts (normal school) major trains fine arts teachers and art teaching researchers as well as compound talents engaged in art creation, art management and other aspects in the fields of culture and art. The major of fine arts education is in the leading position of fine arts education in South China, which has trained a large number of talents for the basic art education in Guangdong. The Design category includes visual communication design, product design, digital media art, environmental design and other undergraduate majors. Cultivate with international design culture vision, Chinese design culture characteristics, suitable for the innovation era demand, in the field of professional design, enterprises, institutions, secondary institutions, research units engaged in

visual communication design, product design, digital media art, environmental design design, teaching, research and management of applied talents. The majors of the Academy of Fine Arts have been explored in the aspects of talent training mode, curriculum system, teaching organization, and dynamic mechanism of good entering and inferior going out.

Fox & Kemp (2020) studied that interactive painting. The result of this research found that Multimedia painting teaching enhances the ability of independent learning, expands the teaching time and space and uses CAI. Teachers speak less in some courses, or even do not say, give the style position to students, but the classroom is better. Multimedia for students on the Internet about the characteristics of the learning content and introduction, in the form of group summary, teachers will collect data into courseware, so under the cooperation of multimedia, a class of learning under the auspices of the teacher the students, fully embodies the leading role of the teachers and the principal role of students, both formed the atmosphere of students' autonomous learning, and enhance the enthusiasm of students' autonomous learning, more give students autonomous learning opportunities.

Russel & Kinetic (2020) studied that painting: Designs for Active Envelopes. The result of this research found that Digital technology is developing deeply into all walks of life, for the education industry, information technology. With a strong teaching guidance effect, the network and intelligent teaching methods make the classroom teaching take on a new look. In such an educational background, multimedia digital information technology and curriculum have gradually realized efficient integration, especially for such intuitive and vivid subjects as painting, the teaching environment is further activated and students. It is easier to perceive the unique beauty in painting works and form an independent artistic cognition in learning. Teachers should start from the practical teaching application strategy and discuss how to realize the clever integration of multimedia and painting teaching.

Benedict (2020) studied that the Cultural Patterns of Painting. The result of this research found that From the past teaching experience, the use of multimedia can optimize the painting teaching activities, to give students straight. The sensory stimulation makes it easier to accept the visual multimedia teaching, forming an effective teaching integration. While many teachers actively use the tool of

information technology. Assist to complete the painting teaching task, greatly reduce the teaching pressure, and provide students with more learning. The way to learn from painting. Additionally, the incorporation of multimedia elements enhances the learning environment for painting students. The flexible teaching approach broadens the scope of knowledge in painting and fosters creativity and association among students. Therefore, multimedia technology offers significant advantages in teaching painting, and teachers should leverage this advantage by integrating courses based on specific teaching situations to further develop students' fundamental art concepts.

In conclusion, Art is a form of visual expression. The application of modern information technology has diversified art teaching methods, with the inclusion of micro-classes, teaching software, interactive electronic whiteboards, multimedia tools, and WeChat. These advancements have greatly enhanced the informational capacity and technical content in art classrooms while aligning with the aesthetic needs and cognitive development trends of today's students. The deep integration of information technology into art classrooms enables better completion of the task of art teaching.

Digital technical support model in painting teaching research

In 2011, the Art Curriculum Standards pointed out that "schools with the conditions should actively develop information technology curriculum resources, make full use of the Internet, obtain the latest art education resources, develop new teaching content, and explore new teaching methods". The "13th Five-Year Plan for Education Informatization" issued by the Ministry of Education points out that it is necessary to deepen the integration and development of information technology and education teaching, create an informative teaching environment based on information technology, promote the reform of teaching concepts, teaching modes and content, and push forward the in-depth and extensive application of information technology in daily teaching, so as to meet the demands for the cultivation of high-quality talents in the information age. the needs of the information age for the cultivation of high-quality talents.

Art is a discipline based on "appreciation-commentary," "modeling-expression," "design-application," and "synthesis-exploration." Art practice requires teachers to

create colorful teaching contexts, use a variety of teaching methods and image-intuitive teaching methods, and carry out life-contextualized, interesting, and comprehensive learning activities. In the traditional art classroom, the teacher mostly creates contexts with videos and pictures, and children will gradually follow the rules in their appreciation and expression after becoming familiar with this mode. In the digital context, how can art teachers design vivid learning contexts to support students' intelligent learning and creative artistic expression? This is a question that many art teachers are thinking about and exploring.

With the popularity and development of the Internet and social media, an era of integrated media is rapidly approaching, which integrates traditional and emerging media, media and audience interaction. In the era of integrated media, strengthening the knowledge of new technologies and means, such as digitalization, and transforming the lagging teaching concepts, traditional teaching methods, and single teaching contents of art disciplines in applied undergraduate colleges and universities are important ways to promote the development of art teaching in colleges and universities towards the application-oriented development (Tang, 2023).

In general, Relying on the powerful interactive display space of the Internet and through the integration of information technology teaching resources, digital teaching materials should be continuously developed and utilized, and a variety of media should be integrated to promote the in-depth integration of information technology and art learning, to better cultivate students' interest in learning art classes.

Utilization of educational resources

Concept of educational resources

Teaching resources are various conditions that can be available for the effective development of teaching. It can be understood as the material conditions, natural conditions, social conditions, and media conditions that can be used for education and teaching. Essence generally include textbooks, cases, film and television, pictures, courseware, as well as teachers' resources, teaching aids, infrastructure, and should also involve educational policies and other content. The use of teaching resources is the goal of this study, and the use of educational

resources, especially the use of digital technology resources, involves the basis of this study.

The following three aspects of the use of teaching resources:

(1) Teaching resources help teachers 'teaching, activate the atmosphere of classroom, and stimulate students' interest in learning.

In the traditional classroom teaching process, teachers teach students 'knowledge and skills from students. From the teaching content, strategies, methods, steps, and even the students' practice, the teachers have arranged them in advance, and students can only passively participate in this process. In modern education and teaching, more and more teachers use a variety of rich teaching resources to teach. The status and role of teachers are mainly manifested in cultivating students' methods, analyzing problems, and problem -solving. Traditional teachers -centered and classroom -centered education methods. The use of teaching resources is the key condition for the professional development of teachers, which greatly increases the teaching effect.

(2) The use of teaching resources makes teaching transmission more standardized. Through the real use of digital teaching resources, students can stimulate students' interest in learning and discovery.

Teaching resources have effectively used various teaching theories and learning theories. In particular, teaching software must be carefully designed in terms of content organization and presentation. In this way, you can repeatedly scrutinize and study carefully, so that the existing teaching principles, cognitive laws, and theoretical experience and theory of learning and teaching can be implemented to maximize Among them, pay attention to methods, methods, and efficiency and effects, so that the best learning and teachings are possible.

Teachers' professional development requires the continuous update and development of teaching resources. The use of teaching resources can make teachers get rid of heavy labor. When students use the media for learning, the repeated physical labor of teachers will decrease. On the one hand, teachers can be able to conduct research. On the one hand, students in the process of identifying the learning process have encountered new situations, new problems, and can also be studied, designing and developing new teaching products to solve problems. At the same time, as an excellent student counselor and instructor, teachers can also

provide sufficient time and energy for self-improvement. Teaching resources have improved teaching and research methods and promoted the professional development of teachers.

(3) The use of teaching resources has found a good form for the reform and development of school -based teaching and research.

To rely on teaching resources to engage in teaching and research, and to learn from famous teachers, such as classic classroom records as the main content of class research, to provide teachers with provide teachers with providing teachers with The pilot of theoretical knowledge and analysis of problems allows teachers to stand at a high degree of theoretical analysis courses and avoid repeating analysis and research at low levels. In the process of theoretical learning and collective lessons, teachers recorded the teaching views, teachers, and student views of teachers in the classroom records of the classrooms according to their observation pilot records. At the same time, compare your usual teaching practice with famous teachers, and learn from the comparison. In the process of theoretical learning and collective lessons, teachers record the teaching views, teachers, and student views of teachers in the classroom records of the classrooms according to their own observation pilot records. At the same time, compare your usual teaching practice with famous teachers, and learn from the comparison. Through the observation and discussion of teaching examples, solve the disadvantages of insufficient vision and insufficient "improvement" by the school's teaching and research activities that can only rely on the interaction of teachers in the school. Especially with online teaching resources, teachers can learn the best teaching art and experience of famous teachers and famous teachers without leaving the house. It can not only save funds for the school, but also provide a broad learning space for teachers to improve their own quality. Teachers not only have the opportunity to appreciate the teaching art of famous teachers and famous masters, update the concept of education, broaden their horizons, but also have the opportunity to class with famous teachers.

Digital Literacy for Students

Internet, Internet of Things, artificial intelligence and other new-generation science and technology, the speed of iteration, the scope of influence, the depth of change is changing people's production and lifestyle, in order to adapt to the changes brought about by the changes, with good digital literacy has become an

indispensable ability of the citizens of the community. 2021, the State Council issued the "14th Five-Year Plan for the Development of the Digital Economy", stressing that "we should accelerate the development of digitalization, enhance the digital competence of all people". In 2021, the State Council issued the "14th Five-Year Plan for the Development of the Digital Economy", stressing that "we should accelerate the development of digitalization and enhance the digital capabilities of all people". Enhancing the digital literacy and skills of all people is a strategic task to meet the requirements of the digital era, improve the quality of the nation and promote the comprehensive development of human beings, and it is a necessary road to realize the transition from a large network country to a strong network country. The following is a summary of the results of the survey. In 2019, the EU published the Digital Education at School in Europe report (2019), which focuses on the use of digital technologies for teaching and learning in digital education and the development of learners' digital competences, and identifies two strategic priorities for the future at the EU level, namely "fostering the development of high-performance digital education ecosystems" and "improving digital skills and competences for digital transformation". It identifies two strategic priorities at the EU level for the future: "Promoting the development of a high-performance digital education ecosystem" and "Enhancing digital skills and competences for digital transformation". Digital literacy was first proposed by Israeli scholar yoram in 1994. Digital literacy is the comprehensive ability that citizens in the digital age should have in their learning and working lives, including information literacy, media literacy, data literacy, network literacy and other core dimensions of literacy.

The integration of digital literacy and educational disciplines aims to explore the digital literacy curriculum in schools and the integration of digital literacy and various disciplines as a means to enhance the digital literacy of primary and secondary school students.

Shi (2016) analyzed how the core literacy that primary and secondary students should possess is reflected in the current national curriculum system and textbooks of different disciplines, and proposed strategies for developing digital literacy in primary and secondary schools. Kong Xiangyu (conducted a study from the perspective of information technology disciplines and proposed appropriate

curriculum design for enhancing the digital literacy of primary and secondary school students.

Du & Wang (2019) exploring the relationship between learning content and the development of digital literacy in the field of arts education, to achieve the improvement of artistic standards while enhancing students' digital literacy.

Hua (2020) started from digital literacy to innovate foreign language teaching and improve students' comprehensive literacy. In summary, the main purpose is to analyse whether the currently used subject materials can enhance students' digital literacy, and the use of interdisciplinary teaching to enhance students' digital literacy in a comprehensive way.

Churchill (2020) develops research skills, design thinking and digital literacy through a digital storytelling project in which primary school pupils use mobile technology tools to conduct research, collect and analyse data and present their findings in the form of a digital story.

León et al (2023) developed a digital literacy assessment as a diagnostic tool for pre-service teachers' digital literacy and digital pedagogy. It was also designed using a convergent mixed-methods approach, with data collected through a quantitative pilot study and a qualitative expert panel review. These two studies are teachers enhancing students' digital literacy through project-based instruction, and researchers developing a digital literacy assessment tool to evaluate the digital literacy of primary and secondary school teachers.

In summary, teachers play an important role in enhancing the digital literacy of primary and secondary school students. Teachers should improve their own digital literacy and make appropriate use of digital technology to acquire, process, use, manage, and evaluate digital information and resources. They should also be able to identify, analyze, and solve educational and teaching problems while having the awareness and ability to optimize, innovate, and change educational activities. Furthermore, teachers should abandon the traditional "indoctrination" teaching method by allowing students to take initiative as the main body of learning and actively develop their relevant literacy skills. In the teaching process, teachers should adopt a problem-based learning approach that is linked to specific real-world situations or interdisciplinary themes. This approach enables students to independently inquire about knowledge and theory application in problem-solving

scenarios. Lastly, teachers are expected to be strong supporters of student learning rather than mere transmitters of experience.

Digital curriculum resources

The concept of digital course resources

Digital curriculum resources mainly refer to the collection of information that contains rich educational information and is released, stored, accessed and utilized in digital form, which can support the design, preparation, implementation and evaluation of curricula and give better play to the educational value of curricula.

The in-depth integration of digital information technology with education and teaching has transformed the structure of teaching and curriculum content, expanding the demand for digital curriculum resources and providing a broader space for their application. Without the support of digital curriculum resources, it is difficult to reflect the advantages of information technology in teaching and learning, which will inevitably affect people's understanding of the digitization of education, thus hindering the practical implementation of the digital transformation of education and affecting the reform and innovation of education.

In course teaching, digital course resources can be combined with specific course teaching objectives, teaching content, planning and organization of multiple forms of resources to form a resource complex, which is applied to the whole process of teaching and supports the occurrence of multi-level learning behaviors. In the whole learning process, digital course resources play a certain role in different teaching aspects of the course.

Digital curriculum resources serve as carriers of knowledge, but the amount of knowledge they can convey is limited. Often, a single resource is designed to address only one specific aspect of knowledge. When viewed individually, a single resource presents fragmented and unsystematic knowledge. On the other hand, curriculum knowledge possesses a well-organized structure and forms a complete system with logical relationships between different pieces of information. Therefore, digital curriculum resources should also maintain this same logical relationship.

Teaching reform

Teaching reform aims to promote education reform and improve teaching content, methods, systems, and other reforms. There are many reasons for promoting teaching reform, including: 1) Advances in science and technology and the

development of social productivity. 2) Social changes, including changes in the political and economic system. 3) The development of educational science and other related disciplines affects changes in educational concepts.

Teaching reform can be divided into two categories: 1) Single reform, which involves the modification of the content, system (such as the examination system), and certain principles and methods of a subject. 2) Overall reform, which refers to the coordinated transformation of teaching plans, tasks, content, methods, and systems. Teaching reform is a part of curriculum reform that encompasses updating teachers' educational concepts, changes in students' learning methods, and the reconstruction of school teaching management systems. These aspects are reflected in the process of teaching reform.

In 2019, China put forward the "Opinions on Deepening the Quality of Compulsory Education and Promoting Educational and Teaching Reform," which points out that educational and teaching reform needs to be deepened in order to improve the quality of education and promote students' comprehensive development. This document comprehensively addresses educational reform.

The document points out that there are four aspects to improve the quality of classroom teaching: 1) Optimizing teaching methods. 2) Strengthening teaching management. 3) Improving homework examination counseling. 4) Promoting the integration of information technology and education and teaching. In particular, the fourth requirement emphasizes establishing digital education resource systems for various disciplines, accelerating the construction of digital campuses, and providing high-quality learning resources for schools in rural, remote, and poor areas free of charge. Documents provide guidance on educational reform, covering five aspects including the construction of the teacher team, the quality evaluation system, strengthening family education, reducing students' learning pressure, and enhancing organizational leadership ability.

According to the educational reforms explained above, we understand that education reform is the fundamental motivation for educational development and a prerequisite guarantee for the use of digital technology. The education theoretical industry has provided numerous intangible interpretations of education. For example, some experts have stated that "education is both an investment and a form of consumption. Education must also serve domestic demands in politics, economy,

and culture." This study believes that while emphasizing the social function of education, we should not overlook its inherent purpose: to cultivate individuals' social activities. The development of educational reform signifies human progress.

The reform of education aims to systematically change education by utilizing digital, network, and intelligent technologies. It aims to build a new educational ecosystem that can achieve fairer and higher quality education, as well as enhanced digitization, tolerance for diverse learning styles, and improved governance at all levels of education. identification and classification of digital education resources can be optimized, enabling intelligent organization, management, and services of resources. Digitalization of education breaks the boundaries of time and space, promoting the generation and sharing of larger high-quality educational resources while expanding the coverage of various educational resources. The core of education digitalization includes "knowledge" and "data" dual -drives. Among them, data is the foundation and collaborative sharing is the key. Knowledge drivers, that is, students learn knowledge, cultivate their ability, and shape their core values in schools. The purpose of data -driven is to teach according to their aptitude. Through the analysis of big data on students, they find students' advantages and strengths, so as to implement precise training and promote personality development. At the same time, it can also support the construction of more connected, open and shared education systems by strengthening data sharing and data exchange between platforms.

In 2023, China's education sector, asked schools around the world to clarify the division of responsibility, establish a sound mechanism for promoting, and constantly bring the basic education curriculum and teaching reform to a deeper level. In the basic education curriculum and teaching reform deepening activities to clarify the views, the following are the views of various experts on teaching reform:

Liu Zhijun in the "deepening reform of the teaching of basic education curriculum with teaching evaluation", mentioned that the deepening reform of the teaching curriculum teaching curriculum with teaching evaluation needs to adhere to the concept of evaluation of core literacy, and on the basis of re -examining the value of knowledge and skills evaluation, It also emphasizes the important value of learning, responsibility, and practical innovation, and promote the reconstruction of the education and teaching system with teaching evaluation. In the process of

deepening curriculum teaching reform, it is necessary to effectively highlight the value of educating people, focusing on the guidance, incentives and feedback of evaluation, and promoting the selection and selection of evaluation and selection under the value -oriented value -oriented value -oriented value -oriented value. In the process of deepening curriculum teaching reform, we need to give full play to the advantages of technical empowerment, actively explore the integration of technologies such as artificial intelligence, big data and other technologies and curriculum teaching evaluations, and resolve the practice of large amounts of data collection, processing, analysis and other practices of curriculum teaching evaluation. Performances, promote the normalization of students' comprehensive quality evaluation.

Li Rumi "Carrying out the teaching evaluation education of primary and secondary schools to provide new ideas for deepening teaching evaluation reforms", proposing teaching evaluation is a function to promote the comprehensive development of students. Deepening teaching evaluation has the practical value of the healthy development of students' evaluation of literacy and the improvement of the school's teaching evaluation system.

Chen Youqing, who proposes that the implementation of different teaching goals requires matching teaching methods, states that for simply grasping knowledge, the most effective way is through teachers' transmission and students' acceptance. However, this method does not apply to the cultivation of literacy. Numerous studies at home and abroad have shown that students' literacy is formed through practical activities in which they can participate independently. For example, the thinking ability is mainly formed by the students 'personal experience and independent thinking practice; the quality of will is mainly formed by the students' personal experience and independently completed practical activities to overcome difficulties. The change of literacy -oriented teaching methods requires the adjustment of the relationship between teaching and learning. When the teaching structure shifts from teaching as the center to learning, students can act and learn independently can occupy the main teaching time and space; in this way, teaching will shift from teachers' transmission of knowledge to the main development of student literacy.

Cheng Shangrong proposed that teachers should be active actors in education reform, and the administrative departments and teaching and research

departments must empower teachers. Give teachers' professional support, provide scientific and practical strategies, methods, and tools, instruct them to solve the difficulties and confusion in reform, and make teachers a methodical and wise actor. We must respect the labor of teachers, while helping teachers learn to reflect, improve, and improve, and make teachers a actor who combines theory and practice and study.

Zhang Zengtian proposed to change the concept of teaching and make students passively "class" into the concept of active "study". Exploring the teaching form centered on student learning and reflecting the status of students. Explore multiple evaluation methods and build an evaluation system that is conducive to the development of teachers and students, teaching improvement and innovative talent training.

Pan Xinmin proposing to build a high -quality professional team in education reform, needs to focus on exploring and implementing integrated teacher education models. Carry out the ability training of teachers' needs -oriented curriculum, and provides new methods and new ideas for optimizing training courses, rich training methods, evaluation training results. Taking the development of teachers' professional ability as the key to education reform.

Che Lina proposed to implement the policy of education reform, strengthen the goal of the school's talent training, comprehensively develop and use school curriculum resources, and coordinate the planning of school curriculum implementation plans; The cultivation of literacy and the cultivation of innovation ability will comprehensively promote the deepening reform of classroom teaching.

Shi ou put forward in the curriculum reform, stressed the importance of the implementation of the curriculum reform on the ground, clearly from the development of curriculum implementation of regional planning, the development of curriculum implementation of school planning and improve the monitoring system for the implementation of the curriculum and other three aspects of the transformation of the curriculum programme on the ground to carry out a comprehensive and clear deployment.

Cui Yunguo studying the theme of interdisciplinary themes should be systematically designed around the implementation of the implementation of the implementation of the implementation of the unitization, the significance of the

theme, the structured content, the practical learning, and the expression of evaluation to achieve the cultivation of core literacy and emphasize the interaction between disciplines.

He Xinxue some people suggest that in the teaching reform middle school, it is necessary to plan the school's curriculum system and implementation strategy, and combine its own actual situation. Local education administrative departments and professional institutions must play the role of supervision and guidance to jointly promote the stable landing of curriculum teaching reform.

Qiu Zhihui proposed to carry out changes in classroom teaching methods with all flowers, and mostly adopts some of the cases that touch students' thinking and soul, active teaching methods, such as cases, inspiration, situation, discussion, and group cooperation inquiry teaching. The processing assessment of students 'academic studies with emphasis on students pay attention to the cultivation of students' innovative thinking. Design and activate the curriculum teaching system of teachers' initiative, release the kinetic energy of teachers to carry out curriculum teaching reform; develop a conscious culture of conscious curriculum teaching quality, and continue to improve the quality of curriculum teaching into a normal state.

In summary, education reform is affected by a variety of complex factors. These factors are intertwined with each other to jointly shape the development direction of the educational system. Understanding and considering these factors is essential for effective advancement and implementation of educational reform. According to the research of relevant experts, the influence of educational reform can generally be divided into the following aspects:

Government policy : The government's policies and regulations in the field of education have a profound impact on educational reform. Government decisions can promote education reform, such as increasing education budgets, reform courses, and improving teachers' treatment.

Social needs : social needs and expectations have an important impact on educational reform. If society needs more technical workers, the education system may emphasize technical training.

Technological development : The rapid development of modern technology has changed the way of education. Digital education, online learning, and intelligent

education tools have positively impact on education reform, and provide more innovative and personalized education methods.

Education workers' promotion: educators play a key role in the success of reform. Their opinions and cooperation can either accelerate or hinder the implementation of the reform.

Classroom teaching

Concept of classroom teaching

Classrooms are the basic system formed by interaction between people (teachers, students) and the environment in the educational situation. It develops a complex comprehensive form that reflects multiple cultures, has a variety of functions, and completes multiple tasks, and has a lively life orientation. Classrooms are teaching, educational, interactive, and social. It is generally believed that the constituent elements of the classroom include teachers, students, goals, classroom specifications, knowledge information, education and teaching equipment and facilities, classrooms, and specific time resources.

Classroom teaching is a concept of connotation and tension. First of all, classroom teaching is a activity system. In classroom teaching, the three most basic elements of teachers' "teaching", student "learning", and teaching content, and these three basic elements are not static and isolated. Among them, the teaching content is an intermediary of "teaching" and "learning" activities, that is, the teacher rely on the teaching content to implement the "teaching" activity, and students rely on teaching content to launch the "learning" activity; teachers '"teaching" and students' "learning "Internal unity, that is," teaching "and" learning "echo each other and complement each other. The teaching process is the dynamic unity of" learning by learning "and" teaching by teaching ". In short, classroom teaching should be an educational practice activity unified with "teaching" and "learning" based on human excellent culture. Secondly, classroom teaching is an educational culture. Culture should be a process of transmitting dynamics in human practice; education is a practical activity based on inheritance and development of excellent human culture. Teachers and students can enjoy and create excellent human culture. Again, classroom teaching is an educational practice activity. Since its internal operation mechanism is the interaction and harmony between the three most basic elements

of the curriculum content, the teacher "teaching" and the student "learning". Between teaching and students, between the content of the course content and the teaching of teachers, between the content of the course content and the student's learning, and even the inside of the three elements of the course content, the teaching of the teacher and the student's learning, it will definitely contain It means a long dialectical relationship.

Student development

Perceptions of classroom teaching

Student development guidance is the school's process of "the process of developing the physical and mental development of young people, using certain professional knowledge and experience to help students understand themselves, understand the world, and solve problems, so as to better adapt to learning and life, and to achieve the greatest extent." Student development guidance has become one of the three major functions of modern schools with equal emphasis on teaching and management. However, the current schools face various problems in advancing the development of student development, such as "lack of professional teachers and lack of social support", "schools cannot organically integrate and allocate people, wealth, things, and other resources". This requires the school to comprehensively promote the development of student development from the aspects of target formulation, path design, implementation of advancement, and evaluation feedback.

The proposal of this issue is also to better research the impact of digital technology on students 'development, especially in the art disciplines and the use of digital technology on the impact of students' development. As a new productive forces in the information age, "digitalization" has become the basic condition for cultural content in the information age of the information age. However, there are some difficulties in "currently achieving the digitalization of comprehensive art education, because most of the existing equipment in schools can only be able To meet the needs of teaching, the digitalization of art education requires multi -party support. For example, schools need fixed venues to provide students with interactive hardware to cause students' interest; related software also requires continuous development of technology to adapt to various teaching environments.

Informatization, etc. It is the general trend of the development of the world today. Information technology with multimedia and network technology as its core has become a creative tool for expanding human capabilities. In this environment, digital learning is deeply rooted in the hearts of the people. The current status of digital learning is worthy of our attention.

By analyzing the impact and effectiveness of digital technology integration on student learning, we can see that it improves the effectiveness and efficiency of student learning, increases student engagement and interest, and positively impacts student academic performance.

On the one hand, the integration of digital technologies can significantly enhance the effectiveness and efficiency of student learning. By utilizing digital tools such as multimedia teaching aids, online teaching platforms, and smart devices, teachers are able to present more vivid, concrete, and interactive learning content. Students can deepen their understanding and retention through watching videos, listening to audio materials, and engaging in online interactions. Additionally, digital technologies offer opportunities for personalized learning by tailoring learning resources and activities to students' individual learning styles and abilities in order to better meet their specific needs.

On the other hand, the integration of digital technologies has a positive impact on student engagement and interest. Traditional teaching is often monotonous and boring, which can easily lead to a decline in students' interest in learning. However, through the use of digital technologies, teachers can create more engaging and interesting learning environments. For example, through the use of educational games, virtual reality and online collaboration tools, students can actively participate in learning activities and maintain a continuous interest in learning because of their interactive and fun nature.

In summary, with the aid of digital technology, teachers can better assess students' learning progress and give timely feedback. Online quiz and assignment platforms, automated grading systems, and tools to monitor student learning data can help teachers gain a more accurate understanding of student learning and adopt personalized teaching strategies to help students improve their academic performance.

Quality assurance

Cognition of quality assurance

The quality assurance explained by this research refers to the guarantee of education quality. In today's society in information development, the quality assurance of digital teaching is also an important topic that requires research. According to the different time and place of lectures, digital education can be defined as three types of digital education services: online education, online and offline hybrid education, and classroom mixed education.

The International Network of Quality Assurance Agencies in Higher Education (INQAAHE), the European Network for Quality Assurance in Higher Education (ENQA), Euro NCAP, UNESCO, and the Asia-Pacific Economic Cooperation (APEC) are generally recognized as important international and regional quality organizations. The method of integrating digital education quality assurance involves incorporating specific considerations for digital education into existing quality assurance processes, aiming to enhance the expertise of external evaluators in digital education to ensure efficient external quality assurance.

The external quality assurance of digital education and traditional education models adopts common standards. The standard itself is enhanced by special consideration of digital education factors, or under the guidance or additional standards developed by other organizations developed by the quality guarantee institution itself or publicly funded by the public or publicly funded, supporting or additional standards to support the support or additional standards to support it. It implements in a digital environment. The system construction of education quality assurance is also to better evaluate the current status of education. In this study, the quality assurance mentioned in this study is to complete the painting design and teaching mode under the support of digital technical support.

Construction of expressive evaluation index system of painting art teachers' teaching design ability.

The performance evaluation of preprofessional teachers in the painting art major is divided into three modules: Teaching design, teaching implementation, and teaching evaluation. These three modules represent an effective teaching cycle that focuses on students' learning. Teaching set The calculation module records the

teachers' expected teaching objectives and effects, and the teaching implementation module records the teachers in practical teaching The teaching evaluation module records the students' learning mastery and how to evaluate the students. each There are four parts under the module task: what I need to consider, what I need to do, what I need to write, How my teaching practice materials are being evaluated (Huang, 2017, P.25-28).

Focus on the core discipline characteristics of the painting art specialty, This also corresponds to the curriculum standards: creating the art of painting- -making works of art such as painting, printmaking, photography, and sculpture: new art forms: such as works made with appropriate images or materials, Artistic interventions involving audiences, performing art installations, and public places: Media art includes video, film, graphic communications, animation, games, and emerging technologies: Architecture, Environmental and industrial arts, Such as urban interior products and landscape design, ceramics, fiber, jewelry and other crafts, And crafts of wood, paper, and other materials. The creation of painting artwork can serve many teaching objectives, including personal creative expression, historical and cultural surveys, responses to contemporary social commentary, and creative problem solving for exploring artistic and cultural meaning in the postmodern period.

Developing art and design works involves using techniques, experimental methods, or surveys to create artworks. The interpretation of art includes analyzing art production methods, theories, art forms, schools to express meaning. Showcasing painting art involves analyzing, selecting, preparing, and arranging objects, artifacts or artworks for display. This may include exhibitions of their own work or the work of others in various formats such as publications or digital platforms. The presentation skills of a surgeon may also be part of the presentation. Associated art is linked to context which can encompass individual, social cultural or historical perspectives. Responding to visual art entails experiencing it alone or collaboratively with others and then analyzing it by explaining or reflecting on its creation and impact on society.

Painting art professional teachers performance evaluation is the evaluation of teaching events, before the job Teachers should fully analyze the educational environment, educational level and educational characteristics of their area Give a suitable teaching plan, and can reflect the personal understanding and teaching of

visual art in the courses taught Think, provide teaching videos to observe students' ability to interpret, respond and relate to art, and ultimately each job The former teachers have their own teacher archives to record the evaluation, relative to the Chinese painting art teachers have Scientific and reference (Chang, 2022, P.31-32).

Digital technology supports the interpretation of the elements of painting design teaching model.

Table 2.1 The results of the synthesis of supporting model characteristics of digital technology in painting design teaching

Supported model characteristics of digital technology / Author	Karantzalos(2020)	Libiao and Dening(2020)	Khan.U.A and J.Moura(2020)	Beth Chatto(2018)	Cai Linghao(2015)	Chen Yuezhong(2019)	Du Chunlan(2015)	M.Simko,M.Barla and M. Bieliková(2018)	S.Cassidy(2022)	R.M.Capraro and M.M.Capraro(2022)	Fu Keqin(2017)	B.ASoloman and R.Felder(2019)	S.ELLakkah,M. A.Alimam and H. Seghiouer(2017)	GuoHu,Chang Jingjing and Deng Liangzhi(2018)	A.Y.Kolb and D. A. Kolb(2015)	Hargreaves(2022)	Kolb and D.a Kolbs(2013)	He Jing(2015)	Total
Utilization of educational resources	√	√	√			√		√		√	√	√		√	√		√	√	12
Teaching reform	√		√	√	√	√	√	√	√		√	√	√		√	√	√		14
Classroom teaching	√	√	√		√	√	√		√	√	√	√		√	√	√	√	√	15
Student development		√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	16
Quality assurance	√	√	√	√		√	√	√		√	√	√	√	√		√	√		14

Researchers analyzed documents, concepts, theories, and research related to digital technology support model features, and used it as the research framework of this research. By selection of the extraction of key elements with a frequency of 10 or above (Table 2.1). The research elements of the synthetic cost research in the five characteristics are finally used as the research framework of this thesis research (Table 2.2). As shown below: 1) use teaching resources, 2) teaching reform, 3) classroom teaching, 4) student development, 5) quality assurance.

Table 2.2 Digital technology supports painting design and teaching mode (framework) content description

Primary Element	Secondary Element	Description
1. Utilization of educational resources	The impact of digital technology on teaching	Understand what effects of digital technology on education, and what are the influencing factors.
	Students' cognition of the mathematics technology painting class	Digital technology painting courses involve many complex technical knowledge and what knowledge students have.
	The utilization degree of digital technology classroom resources	Improve the utilization rate of digital resources, and promote the development of digital
	Curriculum resources	Use various conditions and materials in teaching activities to promote the better development of teaching activities.
	Course quantity ,structure and the construction of high-quality course resources	The construction of a high -quality curriculum system must scientifically classify various courses, and clarify the relationship between various courses.

Table 2.2 (Continued)

Primary Element	Secondary Element	Description
2. Teaching reform	Reform of the training of outstanding and innovative talents	Educational high -quality resources can be used in the talent training and discipline construction that the society really needs.
	Reform of the training mode of professional talents	According to the research results of talent needs, determine the positioning and ability standards of talent training plans, and clarify the core literacy of related professionals.
	Reform of practical innovation ability and teachers' comprehensive ability	Cultivating senior talents with innovative spirit and practical ability is an important task in the field of education in recent years. It is also the demand for current education.
	The formulation and implementation degree of the humanities syllabus	With the development of student development, formulate the teaching outline of the corresponding discipline, and complete the level of implementation requirements in the current education sector.
	Recognition of practical teaching	Master the purpose and characteristics of practical teaching, and be familiar with the content of practical teaching.
3. Classroom teaching	Extracurricular learning expansion	The reform of extra -curricular expansion is to continuously optimize teaching, cultivate hobbies in different fields of students, and improve the comprehensive ability of students.
	The degree of diversity in learning	Taking care of the diversity of learning, each student's ability, motivation, needs, interests, and potentials are different. Teachers can try to help them learn better

Table 2.2 (Continued)

Primary Element	Secondary Element	Description
		according to the characteristics of the students.
	Reform of practical innovation ability and teachers' comprehensive ability	Cultivating senior talents with innovative spirit and practical ability is an important task in the field of education in recent years. It is also the demand for current education.
	The formulation and implementation degree of the humanities syllabus	With the development of student development, formulate the teaching outline of the corresponding discipline, and complete the level of implementation requirements in the current education sector.
	Recognition of practical teaching	Master the purpose and characteristics of practical teaching, and be familiar with the content of practical teaching.
4.Student development	Interactive learning	By increasing the interaction between students and teachers, stimulate students' learning interest and enthusiasm, and improve the teaching effect.
	Student guidance and service	Provide students with a comprehensive and diversified cultivation and guidance to help students develop in an all -round way and realize their self -worthy service system.
	Study style and learning effect	Teaching and learning are two inseparable parts of our teaching process. Only by matching the teaching style and learning style can we do more with less. Master the teaching style and learning style of different disciplines can we better improve the learning effect of learning.

Table 2.2 (Continued)

Primary Element	Secondary Element	Description
5.Quality assurance	Teaching quality assurance system	The establishment and improvement of the teaching quality guarantee system is of strategic significance for the long -term development of the school. It not only conforms to the guidance of the core connotation of the national education department's school teaching work, but also will effectively promote the improvement of the school from "quality" to "high quality".
	The quality information utilization of development teaching	Digital education is booming, bringing a sense of consistent gain for learners, promoting digitalization of education, and providing strong support for the balanced development of education.
	Construction of expressive evaluation index system of painting art teachers' teaching design ability	With the continuous development of education, the requirements for the evaluation system are getting higher and higher, in the discipline of art, how to establish a set of scientific and reasonable evaluation and guidance system has become an important issue for educators, and is also an important educational issue researched in this thesis.

Utilization of educational resources

The development and innovation of digital technology have transformed the teaching of intangible cultural heritage creative design from traditional craft teaching forms to digitization, according to Luo (2020). Handicraft production or modeling design cannot be separated from digital media technology. The design of digital

carriers mediated by digital images, videos, etc., has become the mainstream direction of contemporary interdisciplinary art and design development.

Zhao (2009) the characteristic of training VR systems is to model the real world, forming a virtual environment to replace the real training environment. Operators can participate in repeated operation training in this virtual environment, achieving effects similar to training in the real environment.

Bai (2021) based on a thorough understanding of the teaching objectives of the discipline of sight-singing and ear training in China, and in connection with the current development status of various fields in today's society, research is conducted on the application of digital technology in the field of sight-singing and ear training, mainly including aspects such as Internet technology, multimedia digital technology, and the use of music software. By combining the specific teaching content of online sight-singing and ear training during the epidemic period, the auxiliary role of digital technology in the teaching process of sight-singing and ear training is analyzed. Through specific practices, it is proved that the combination of sight-singing and ear training with digital technology is of great significance for both teachers' teaching and students' learning.

Suo (2020) certain analysis of the advantages of digital technology is conducted, and measures for the application of digital technology in high school sight-singing and ear training teaching are discussed. The use of digital technology increases students' sensitivity to music in visual and auditory training, thereby enhancing students' perception and empathy for music, which is conducive to promoting the development of students' thinking and the cultivation of moral qualities.

Wei (2023) in professional courses, the application of digital art resources not only broadens the educational perspective but also stimulates students' innovative thinking and practical abilities. It tightly integrates art education with technology, exploring the symphony of classical and future in the field of education.

Zhang & Yin (2014) in terms of teaching methods, a combination of virtual and real, online and offline approaches is adopted, following a path of integrated openness and integration. Strengthening offline activities involves constructing open educational parks that integrate various social resources, while expanding online presence involves incorporating high-quality open course resources from the internet.

The deep integration of information technology and education is of significant importance for the construction and structural adjustment of courses.

Teaching reform.

Wang, Wang, Duan & Zhang (2019) strengthening the integration of industry and education in talent cultivation, exploring the formulation of training programs for high-level skilled talents, deepening the "project + studio" talent training model, establishing a multi-level school-enterprise cooperation mechanism, leveraging professional technical advantages, and enhancing social service capabilities.

Wang & Chen (2020) cultivating talents in digital media applications has become a focal issue to sustain the development momentum of China's digital media industry. Combining practical content, specific suggestions are proposed for the reform of talent cultivation models in digital media application technology majors at higher vocational colleges, starting from the construction of core curriculum systems and the development of majors, aiming to help higher vocational colleges cultivate more talents in digital media applications.

Xia (2020) the rapid development of the virtual reality (VR) and augmented reality (AR) industries has created an urgent demand for talents in the VR/AR field. Based on talent demand research, a talent cultivation plan for VR/AR direction integrating regular classes and specialized creative pilot classes in the higher vocational digital media application technology major has been proposed. Additionally, a VR/AR professional curriculum system design has been established, aiming to provide reference for the establishment of VR/AR directions in other higher vocational digital media application technology majors.

You (2010) in universities, most majors have far more theoretical courses than practical ones. Students have very few opportunities for practical exercises in schools. Although there has been a continuous clamor in society emphasizing the importance of practical skills, schools still have limited emphasis on practical training. Learning abundant theoretical knowledge lays the foundation for practice. Despite the scarcity of practical teaching hours in all teaching plans, they account for a significant portion of credits. Therefore, the essence of teaching is to cultivate students' comprehensive practical abilities.

Chen (2018) integrates teachers' teaching philosophies, teaching contents, and teaching methods into the teaching syllabus. The syllabus serves as a "bridge" for

communication between teachers and students, a reference for students' learning, and an important basis for teaching evaluation and scoring. However, teachers provide only superficial introductions to the course syllabus, and there is a lack of application of the syllabus in the teaching process, resulting in students' inadequate understanding of it. The solution lies in enhancing teachers' sense of responsibility towards the course syllabus, cultivating students' awareness of it, and standardizing the writing, management, implementation, and evaluation processes.

Chen (2015) utilizing multiple strategies to enhance the professional quality of middle school chemistry teachers; mitigating the negative functions of the middle school entrance examination and returning to the efficient classroom with scientific literacy as the core; deepening the research and revision of the middle school chemistry curriculum standards; conducting in-depth research and development of chemistry textbooks based on the middle school chemistry curriculum standards; focusing on localization and developing analytical tools and methods for the consistency between classroom teaching and curriculum standards.

Chen (2021) argues that practical teaching, as an essential component of higher vocational education, plays a crucial role in achieving the goals of talent cultivation. Therefore, it is of significant importance to construct a more effective quality evaluation system for practical teaching in higher vocational colleges and investigate the quality of practical teaching in these institutions. This will enable us to scientifically construct evaluation systems and enhance the overall quality of practical teaching.

Classroom teaching.

With the construction of smart campuses and the enhancement of teachers' information technology application abilities, teaching methods and strategies are continuously improved (Zheng, 2023). The concept of smart education has led to the emergence of smart learning. In the smart learning environment, extracurricular reading teaching in primary schools is supported by advanced information technology and follows four stages: content selection, reading guidance, process monitoring, and reading assessment. Under the timely guidance and monitoring of teachers, a conducive reading atmosphere is created to help students develop good reading habits. This forms an efficient teaching path that promotes students' autonomous and in-depth reading.

The main goal of Chinese language teaching in high schools is to cultivate the core literacy of Chinese language subjects. High school Chinese language teaching should abandon traditional and outdated teaching ideologies, employ new teaching methods and approaches, create active classrooms, enhance cultural guidance, stimulate students' interest in learning, and improve classroom efficiency and quality Lai (2021). The author believes that a deep analysis and exploration have been conducted on how to cultivate the core literacy of Chinese language subjects in high school through aspects such as listening, speaking, reading, writing, moral education, and practical life.

Mo (2019) diversity in learning experiences supports the cultivation of creativity in university students, which is a common characteristic of undergraduate education in world-class universities. Diversity in learning is mainly reflected in the cutting-edge and integrated nature of course content, the participatory and challenging nature of academic experiences, the diversity and exploratory nature of teaching modes, and the process-oriented and comprehensive nature of learning assessment. This has important inspirational significance for China's construction of first-class undergraduate education and the cultivation of creative talents.

Wang (2024) combining online and offline teaching activities, and optimizing the functionality and user interface of online learning platforms to enhance student learning participation and interaction, constructing a comprehensive evaluation system to assess the application of online learning spaces comprehensively. This system comprehensively considers multiple dimensions of effects, such as learning outcomes, user engagement, content quality, and technical support.

Gao (2023) the online learning space fully leverages the unique advantages of modern media technology, integrating the strengths of information technology. By optimizing the online learning space, it can break the boundaries of time and space, stimulating students' interest in expression. In teaching, emphasis should be placed on multiple practices, making full use of classroom teaching, teacher space, and student space, developing expression capabilities in different learning stages.

Deng (2023) the behavioral willingness of college students significantly affects their self-efficacy in autonomous learning of online courses. Students' learning behavioral willingness is influenced by factors such as online course content and norms, as well as their perception of the online learning platform, with the impact of

online course content and norms being greater than that of the perception of the online learning platform. The ability for autonomous online learning is of great significance for college students to engage in various types of online learning under the context of knowledge payment on the internet.

Wu & Chen (2023) by addressing typical problems in college students' online learning behavior through strategies such as improving the network literacy and online learning ability of learners, as well as enhancing the construction of learning environment and resources, the effectiveness of online learning for college students in the new era can be further improved.

Student development.

According to Zhang, Yang, Wen & Zhao (2024) the interactive classroom supported by the Smart Learning Platform technology offers advantages such as real-time feedback on learning progress, highlighting the students' role as the main focus, and improving classroom efficiency. By empowering teaching using the interactive classroom system based on the Smart Learning Platform, teaching challenges can be overcome, teaching objectives can be achieved, and summaries and prospects can be made, facilitating better application of the system in physics teaching practice.

According to Zhang (2024) strengthening interactive learning between young children and their environment promotes healthy growth and comprehensive development of young children. Kindergartens need to transform their educational philosophy and emphasize the beautification of the environment during the process of environment creation. It is essential to explore the educational functions of the environment, allowing young children to interact well with the environment. This transition encourages children to transition from passive knowledge recipients to active explorers. By continuously exploring based on children's discoveries and demonstrating development in the process, growth is achieved.

According to Yang (2023) based on the requirements of competency cultivation in the new curriculum standards, utilizing interactive learning platforms and integrating digital resources, real-time student learning information is understood to swiftly optimize teaching plans, forming an effective model of "assess before teaching, learn before teaching, and teach based on learning." By adjusting traditional learning and teaching methods, exploring a more suitable teaching and learning path

for student development is sought to enhance the educational value of the classroom.

According to Yang (2020), private colleges should adhere to a student-centered and student-oriented education concept that focuses on strengthening learning objectives in educational and teaching activities. By analyzing the prospects and existing problems of academic guidance services in private colleges, suggestions for improvement are proposed. These include clarifying the objectives of academic guidance work, improving the service system, enriching content and extending academic guidance efforts to align with college students' actual needs. Furthermore, it aims at enhancing their satisfaction with both learning experience as well as overall quality of life while providing valuable insights for educational reform within private colleges. Ultimately, this will lead to continuous improvement in talent cultivation effectiveness.

According to Li & Mei (2023) for the same class, teachers can utilize data analysis from preliminary courses to understand the learning styles of the corresponding class and adopt targeted teaching strategies. For different teaching classes of the same course, teachers should also adopt different teaching strategies according to different learning styles. Additionally, learning behavior data varies for each course. It is recommended that teachers design online learning activities from the dimensions of learning input and learning ability, identify students' learning styles, and conduct teaching design based on this.

According to Wu (2023) Massive Open Online Courses (MOOCs) have spurred explosive growth in online education, but online education still faces issues such as low participation, low investment, and high dropout rates. Currently, most research uses various technological tools to analyze educational data to alleviate the crisis of online learning. However, these studies focus on the instrumental rationality of learning analysis tools, neglecting the value rationality based on human development needs. Therefore, exploring the influencing factors of online learning effectiveness and devising intervention measures that can reflect its value rationality are key to improving learning quality.

According to Zhang (2023) the continued development of Internet plus education has made online learning a common study method for college students. Massive open online courses and online learning platforms provide students with

abundant learning resources and equal learning opportunities. Laptops and other Internet access devices facilitate online learning for college students. However, the rich media environment of online learning also tends to induce multitasking behavior among college students. While engaging in online learning, college students often simultaneously use social media, listen to music, and browse the web, among other media activities. This increasingly prevalent media usage pattern has raised concerns among educational researchers and teachers about the effectiveness of college students' online learning.

Quality assurance.

According to Zhan, Ji & Li (2023) the purpose of establishing an internal quality assurance system in higher vocational colleges is to improve the quality of school operation. However, in the construction of internal quality assurance systems in Chinese higher vocational colleges, there are still issues such as incomplete quality assurance mechanisms, unclear goal setting for diagnosis and improvement, imperfect assessment indicators, and insufficient construction of internal quality culture.

According to Zhang (2022) with the widespread application of online teaching in major universities, the problems it brings have become increasingly prominent. These mainly manifest in the transformation of the teacher's role, the rebooting of teaching methods, the optimization of the teaching quality supervision system, and the improvement of the efficiency evaluation system for online teaching. This article reflects on the aforementioned issues, explores and constructs a quality assurance system for online teaching in universities, and promotes innovation in university teaching reform.

According to Zhu (2021) in order to keep pace with the rapid development and extensive application of online education and teaching methods, ensuring the construction of an online teaching quality assurance system can meet the needs of practical work and guarantee the high-quality operation of online teaching. The author, based on the practice of constructing the online teaching quality assurance system in their vocational college, has explored and formed a relatively complete quality assurance system construction model. This model focuses on improving the organizational system for teaching quality assurance, constructing a system of teaching quality evaluation indicators, and leveraging the demonstration and

guidance functions of teaching supervision. Continuous improvement has yielded positive results.

According to Wu (2021) the construction of online open courses is a product of the development of education in the Internet age and is an innovation in education and teaching under the concept of "Internet plus." The quality of online open courses in art and design in higher vocational education varies, so it is imperative to construct a comprehensive quality system for online open courses in art and design. Through the static and dynamic cycles, by setting goals, establishing standards, formulating plans, organizing implementation, diagnosing monitoring, and improving and enhancing, the quality system of online open courses in art and design is deeply explored. This leads to the establishment of a normalized self-quality assurance system for online open courses, promoting curriculum teaching reform and quality improvement.

According to Zhang (2021) elementary school art courses serve as enlightening courses for students' artistic literacy and aesthetic concepts, playing an important role in promoting students' comprehensive development. Information technology teaching is a result of educational progress and development, greatly enhancing the teaching of art subjects at the elementary school level.

According to He (2018) how teachers can effectively utilize modern information technology in classroom teaching to promote students' active thinking, independent inquiry, and to make abstract teaching content concrete and vivid, optimizing the teaching process and enhancing teaching effectiveness, thereby improving teaching quality. Teachers need to guide and stimulate students' interest in learning with richer and more interesting content, according to the characteristics of information technology, allowing students to learn and experience mathematics through sound, images, animation, and other forms, enriching the teaching context and encouraging students to actively participate in mathematics learning.

According to Li & Zhang (2015) information technology provides more possibilities for the development and progress of teaching, and has a profound impact on educational concepts and teaching models. Under the influence of information technology society, education and teaching will inevitably move towards informatization. Information technology has had a profound impact on educational reform and teaching models, playing a crucial role in educational reform and

teaching models. Information technology constitutes modern teaching technology, which is crucial for improving students' adaptability and enhancing classroom teaching quality. Teaching quality requires perfect coordination between teachers and students, and information technology as a tool is essential for improving the overall quality of education and teaching.

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According to Li (2020) to achieve the best results in sports dance competitions, one must pursue exquisite technique, more creative choreography, optimal stage effects, and highly infectious expressive performance. Through the correlation analysis and practical examination of the evaluation index system of artistic expression in sports dance, it was found that the constructed evaluation index system of artistic expression in sports dance has high rationality and overall applicability, with high promotional value.

Delphi method.

Definition of Delphi:

Delphi, also known as expert investigation, was founded and implemented by the United States Rand in 1946. It is essentially a method of anonymous feedback investigation. The general process is based on a specific system program and utilizes an anonymous approach where experts express their opinions. Through several rounds of repeated expert opinion consultation, induction, and modification, reliable research results are formed based on reaching a basic consensus.

The characteristics of Delphi

Anonymous

Because of this method, all the members of the expert group do not meet directly, but only communicate through communication, so that the impact of authority can be eliminated. This is the main feature of this method. Anonymous is an extremely important feature of Delphi Experts participating in the prediction do not know who is participating in the prediction. They exchange opinions in a completely anonymous way. Later, the improved Delphi allowed a special discussion to convene an expert meeting.

Information feedback

This method requires 3 rounds of information feedback so that the investigation team and expert group can conduct in-depth research in each round. This ensures that the final result can accurately reflect the expert's basic ideas and understanding of the information, making it more objective and reliable. The communication among group members is facilitated through answering questions from the organizer. Generally, several rounds of feedback are necessary to complete the forecast.

Statistics

The most typical group prediction results reflect the opinions of most people, and can only summarize the opinions of a few people at most, but this does not show the different opinions of the group. Statistical answers are not. It reports one median and two quarterly digits, half within two quarters, half of which are outside the two quarters. In this way, each point of view is included in statistics, avoiding the shortcomings of the expert meeting law only reflect the disadvantages of most people's opinions.

Application method of Delphi:

Because Delphi generally selects authoritative experts in related fields and adopts a multi-round consultation process with anonymous feedback, its research results are highly reliable and authoritative. For example, Tigelaar (2004) used Delphi to develop and validate a model for assessing university teachers' teaching abilities. Marieke van Der Schaaf (2005) also utilized Delphi to propose evaluation criteria for teachers' teaching and research abilities.

Specific steps are as follows:

1. Open first round expert interview

(1) The first round of interviews sent by the author to experts are open, and only the prediction problems are raised. Experts are requested to propose predictions around forecast issues.

(2) I summarize and organize the expert interview form, classify similar events, eliminate secondary events, and use accurate terms to propose a list of prediction events as an expert.

2. Evaluation based on the second round of expert interviews

(1) Experts evaluate each event listed in the second round of interview forms.

(2) The author handles the opinions of the second round of experts and compiles the third round of interview forms. The third round of interview forms include the median number of events, the incidence of incidents, the number of upper and lower quarters, and the cause of the incident rate exceeding the quadrilateral.

3. The third round of expert interviews

(1) Release the third round of expert interview forms, experts will evaluate and weigh them again, and make new predictions.

(2) Recover the third round of expert forms, calculate the median and ;of each event, and summarize the reasons and arguments of various opinions.

(3) Obtain the model.

This article mainly uses Delphi to complete the target 1 and target 2. Through three rounds of expert consultation, the painting design and teaching model supported by digital technology support was established.

1. The first round of expert interviews:

(1) Establish an expert interview form and set up open issues, including

1) Investigation of the problems and the problem of problem solving the status quo of the problem in studying effective painting design and teaching;

2) Solution to develop effective digital technology support mode in painting design and teaching;

(2) Organize expert interview forms, gather expert opinions, extract model element scales using accurate terminology (using a five level scale), and send them as the second round of questionnaires to experts.

2. The second round of expert survey items:

(1) Invite experts to evaluate the elements contained in the model.

(2) Statistically deal with the opinions of the second round of experts, and compile the third questionnaire (a five -level table).

The model is the same as the second round of models, displaying the medium and quarterly distance to display the statistical value and original opinions of the respondent so that experts can review their original answers.

3. The third round of expert research:

(1) Ask experts to make new evaluations of the elements of the painting design and teaching mode supported by digital technology.

(2) Recycling the third expert questionnaire, calculate the median number of each element and the two -point digit, and summarize the reasons and arguments of various opinions.

(3) Digital technology supports painting design and teaching model.

Focus group

Definition of focus group:

The focus group is a qualitative research method commonly used in social science research. Generally speaking, trained researchers will use semi-structured methods (i.e., pre-set interviews) to guide a group of respondents in engaging in dialogue. Specifically, it refers to a method of investigating a certain number of observation objects from the total observation objects determined by the research institution and inferring overall characteristics based on sample information. The main purpose of the group interview is to listen to the opinions of the interviewees regarding research issues.

The development process of key groups:

1. Determine the time, place, and group members of the focus group meeting.
2. Choose the host and organize the meeting effectively and orderly.
3. Form the outline of the focus group discussion.

4. Formally implement the focus group meeting, and the host inspires the group members to discuss in -depth discussions, allowing them to communicate with each other and generate more ideas. Finally, summarize important conclusions.

5. Use the recording equipment to record the discussion process, and write the focus group meeting report after the meeting.

6. Discussion results of the focus group meeting to verify the feasibility of the model.

Advantages of Focus Group Method:

1. Convenient operation;

2. Short time consumption;

3. Higher reliability and validity.

The application of the focus group in this study:

Step 1: Determine the time, place and 9 group members of the focus group meeting.

Step 2: Select the host and organize the meeting effectively and orderly.

Step 3: Form out the outline of the focus group discussion.

Step 4: Formally implement the focus group meeting, and the host guides the members of the group to discuss in -depth discussions. Members communicate with each other and make opinions on the assumptions in the study. Finally, summarize important conclusions.

Step 5: Use the recording equipment to record the discussion process, and write the focus group meeting report.

Step 6: Get uniform opinions on the feasibility of the model.

Related Research

Cai (2015, p.15-20) studied that in terms of the teaching reform of this major, fine arts education was awarded as a key major construction project in Guangdong Province in 2013. It improved the talent training mode by focusing on the teaching skill training of art education teachers and adjusted the curriculum system accordingly. Additionally, it explored reforms in curriculum content and teaching methods.

Du (2015, p.4-8) studied that the college has always attached great importance to formulating and revising the undergraduate curriculum syllabus,

considering it as a crucial part of quality control and teaching improvement. The syllabus represents the specific manifestation of talent training goals in curriculum construction, serves as the primary basis for teachers' instruction, and acts as an important criterion for assessing students' academic performance. Following the requirements of the school's revised undergraduate curriculum syllabus and template, along with reference to the 2012 undergraduate personnel training program objectives and requirements at professional level, as well as curriculum planning and content definition, attention is given to guidance and operability in completing revisions of six professional seven talent training programs at college grade level according to national professional teaching steering committee guidelines. In the revision process, the course content was discussed and written by the course leader before being finally confirmed by the academic committee of the college. The college requires teachers to complete their course teaching according to the course syllabus, which serves as a concrete embodiment of talent training goals and reflects developments in discipline theory and technology. The college also emphasizes that the course content should highlight scientific professionalism and reflect specific characteristics of each course. Furthermore, it encourages teachers to incorporate their own research or technological achievements into their teaching materials, as well as introduce new theories and technologies to students.

Capraro & Capraro (2022, P..590-602) studied that In traditional teaching, students generally do not do too much preview work before class, most of them prepare learning materials for corresponding hours. Teachers are mainly responsible for searching for relevant teaching materials and making PPT courseware. The teaching activity occurring in this situation is sudden and broken down. With the help of the digital teaching of modern information technology, the activities of teachers and students, because of the intervention of teaching software, micro-class and other technical means, more highlight the teaching concept of students as the main body and mobilize students' active learning enthusiasm. Before class, with the help of various learning platforms and mobile terminals, teachers transmit the learning guide plans and preview the micro-lessons through the Internet, and create a variety of teaching situations, such as problem situation and inquiry situation. Students watch the micro-class before class, complete the guide plan on the learning platform, and understand the main teaching content. In the learning plan, teachers should guide

students to collect, analyze and explore of learning resources by creating multiple problem situations, so as to give full play to students' subjective initiative. Especially for some schools located in remote villages and towns, most of their students have never heard of the famous historical paintings, Chinese and foreign historical sites and garden buildings involved in the learning field of art "appreciation and evaluation", while the application of modern information technology in class can shorten the distance between teachers and students and art. For example, in the class of "changing", teachers used virtual reality technology (VR technology) to make a micro class of "VR Play Chinese classical Garden" before class, which generated QR code and sent it to students through the learning platform. With the help of VR glasses, students gently sweep, they seem to be in a classical garden, with a sense of immersive experience. Coupled with the teacher's explanation, it will be easier to understand. With the help of micro-class before class, to give full play to the advantages of short micro-class, teachers can create a unique teaching situation and implement more accurate teaching.

For another example, with the help of some art teaching App, such as font beautification master, design gentleman, brocade color, students can preview independently before class. With the "Font Beautification Master" App, students can download a variety of character libraries, view the beauty of simplified Chinese characters presented in many artistic effects, or make beautiful greeting cards. Using the "golden color" App, students can conduct debugging and color matching exercises, and compare and analyze similar colors, contrast colors and other color matching schemes.

Barla & Bieliková (2018,P..367-378) studied that the college attaches great importance to practical teaching, takes the improvement of students' practical innovation ability as the goal, and vigorously promotes the reform of practical teaching. Fine arts major has built an "integrated" practical teaching system, and design majors have constructed a design undergraduate practice teaching mode oriented by independent learning and applied according to the characteristics of the major, with remarkable results. The college emphasizes the importance of design and comprehensive experiments. At present, there are independent design, comprehensive experimental courses or course design in the training programs of the six majors. The student practice and innovation base of the college is open all the

year round. All kinds of professional laboratories are open under the circumstances of course design, design and practice, college students 'innovation and business plan projects, students' extracurricular science and technology project approval, various competition preparation, and graduation design. The college reviews and evaluates all kinds of educational practice in strict accordance with the requirements of the school. Professional teachers shall be evaluated according to the internship plan formulated by the college. According to the relevant regulations of the school and the comprehensive evaluation of internship defense, professional teachers are arranged to report the internship situation of the students to understand the students who participated in the internship team organized by the college will evaluate the internship results according to the internship materials to ensure the internship effect.

Fu (2017, P.50-56) studied that modern information technology can be both teaching AIDS for teachers and learning AIDS for students. It can create a personalized learning situation that reflects the characteristics of the fine arts discipline, put students' knowledge and skills learning into the teaching situation, and change the learning style. However, teachers should avoid turning "human irrigation" into "electric irrigation", and classify and integrate the micro-class resources and teaching software appropriately, so as to better serve the art teaching.

He (2015, P18-21) studied that the college will generally adopt the white paper of the Academic Affairs Office at the joint meeting of the Party and the government, and discuss the existing problems. The white paper and the student feedback teaching opinions will be reported at the conference of the college. I hope that all the teachers of the college will understand and pay attention to the problems, and the relevant opinions will be fed back to the relevant teachers. The college will require the director of the teaching and research section or teachers with teaching experience to attend the class in class and give specific guidance to the problems existing in classroom teaching.

He (2017, P78-80) studied that the field of teaching design requires teachers to make teaching objectives and teaching scientifically according to the actual teaching environment and situation learning plan, so as to make full use of teaching resources including local characteristic resources, hardware facilities and other design teaching process, Finally, help students to master knowledge methods, guide them

to design personalized learning plans, and promote comprehensive literacy promote. In terms of the art discipline of painting, Art core literacy of "image reading, art, aesthetic judgment, creative practice and cultural understanding" five aspects from a certain extent requires painting art teachers on the teaching design and ability requirements: image reading focus on teachers in teaching design to help students to understand the image modeling, color, material, such as painting art discipline of professional information, Combined with the knowledge of other disciplines to interpret and understand: painting art expression focuses on teachers' use of modern or traditional painting art language in teaching design, Express their own thoughts and feelings combined with life: aesthetic judgment focuses on cultivating students' cognition of beauty, Learn to perceive, describe, analyze and evaluate beauty: Creative practice requires teachers to focus on cultivating students' creative thinking to create artistic works in curriculum design: Cultural understanding provides a reference standard for teaching design in terms of values and humanistic feelings. These five core qualities are interlinked, interact and influence, requiring painting art teachers to fully consider in teaching design.

Hua (2015.P88-90) studied that cultivate the connection between key point-s and quality, and fully practice the objectives in the teaching process and teaching evaluation. The examination objective in the knowledge and teaching ability of painting art stipulates the teaching design ability of painting art refers to the ability to use the "painting Art Curriculum Standards (experiment)" to guide the teaching. For students cognitive characteristics, knowledge level and learning need to choose the appropriate teaching content: to master the basic knowledge of painting art discipline. The basic methods of knowledge and painting art creation and appreciation are effectively applied in the teaching of painting art; master the theory and method of painting art teaching, understand the nature and basic idea of high school art curriculum, master the organization form and basic steps of painting art teaching, and properly use the teaching strategies and teaching methods: accurate expression And present the teaching content, effectively guide and organize the students' learning activities, and targeted to the students into Practice of learning method guidance: the use of modern educational technology for painting art. According to the elements of painting art design, the dimension of painting art teachers' teaching design ability is divided into The following six aspects: learning

needs analysis ability, teaching content analysis ability, teaching objective design ability, teaching Learning method and teaching strategy selection ability, teaching process design ability, teaching evaluation design ability.

Li & De (2020, P.1568-1577) studied that the school of Fine Arts has 6 undergraduate majors, including Fine Arts (Normal), Visual Communication Design, Product Design, Digital Media Art, Environmental Design, Clothing and Clothing Design. The purpose of the college is to train art teachers, art creation, design and theoretical research talents who are excellent in character and learning and have all-round development of morality, intelligence and physique. Academy of fine arts with Anhui province characteristic key disciplines "art education", fine arts master degree award, master degree award and fine arts (normal) level discipline master, have "recommended an exemption for a master's degree graduate student" (hereinafter referred to as "free"), 2014 master graduate admission ratio (including "from" 12%.

Han (2015) studied that the application of digital teaching resources in painting teaching. The result of this research found that Use digital resources to stimulate students' interest in learning. Digital teaching resources to adopt a more interesting teaching Form to attract students' attention, stimulate the interest in learning. A large number of network resources can provide students with more abundant learning materials. The teaching content is not only limited to the textbook, but also can collect some other resources to enrich the teaching, expand students' knowledge, and leave a deeper impression on students. In this process, Through the display of materials, students can learn more knowledge, feel the fun of learning, so as to stimulate the interest in learning.

Yu (2015) studied that Effective integration and analysis of classroom teaching painting technology and information technology. The result of this research found that Through multimedia teaching auxiliary tools to create a good classroom atmosphere, so that students get different learning experience, use some pictures or videos to reproduce some situations, so that students can get visual experience, as if the immersive general feel the artistic beauty of the painting. These tasks should be done in the teaching preparation stage. Teachers can use the form of courseware to show some pictures or videos, so that students can watch, change the traditional mode of single explanation, in a more vivid form to let students learn painting knowledge. In the process of learning, students will feel more relaxed and stimulate

interest through appreciation, independently appreciate and comment on painting works, and unconsciously improve their aesthetic ability unconsciously.

Wang (2017) studied that on the application of multimedia techno-logy in painting teaching. Interest is a powerful motivation for students to learn proactively. The result of this research found that Teachers should give correct and effective guidance, make students interested in learning through the form of network resources, become interested in some things they have not been contacted with before, and are willing to study and explore, and gradually stimulate and cultivate their innovation ability. In painting teaching, of course, it is also necessary to exercise students 'painting ability, but the simple form of paper and pen painting is difficult to stimulate students' interest, teachers can use digital resources to carry out different painting teaching. The use of information technology can not only exercise students 'painting skills, but also cultivate and develop students' innovative ability.

Tian (2018) studied that on the application of multimedia techno-logy in painting teaching. The result of this research found that The result of this research found that In addition to carrying out some teaching activities in the painting class, it should also be filled Use digital resources to pay more attention to the cultivation of students' practical ability. Painting is actually a relatively comprehensive subject, which can be integrated in the teaching process Realize comprehensive learning together with other subjects. In order to cultivate the comprehensive quality of the students, open exhibition and practice activities are very necessary. Teachers should learn to integrate information resources, abundant Rich teaching at the same time to expand the students' knowledge, painting teaching in various forms learning, let the students' learning style become more flexible. With the development of information technology Exhibition and application, a variety of teaching software continues to emerge, applied to painting teaching software is also more, can let students achieve painting practice on the computer, the use of software to painting design, a variety of forms for students to choose. Teachers can also carry out some practical activities accordingly, so that students can make full use of the digital capital Source to learn, in the practice of activities to improve the ability.

Wu (2020) studied that digital media art in the painting teaching. The result of this research found that book introduces the digital media art relying on advanced computer technology and art teaching, using gradual guided teaching method to

guide students to actively participate in the art learning and creation, not only through digital media art taught students the art teaching knowledge, also cultivate the students' ability of independent learning. Digital media art is open for our teaching opened a new door, through the reference of excellent works of art, constantly optimize the teaching work of painting, but also expanded With the students' artistic vision, teachers and students can grasp the development of art in the classroom and improve the quality of teaching.

Li (2020) studied the renewal of Chinese painting concepts and explored new techniques. The results of this research revealed that the first monograph in the history of Chinese art deviates from traditional aesthetic concepts and technique systems, aiming to comprehensively create new art theories, techniques, and schools.

The study conducted by Qin (2019, p.249-252) concluded that an efficient classroom is one that achieves maximum learning benefits with minimal teaching and learning investments. Its fundamental characteristics include "independent construction, interactive stimulation, efficient generation, pleasure, and sharing. For contemporary students, acquire knowledge. The way of knowledge is no longer limited to the classroom, but as the main channel for students to acquire knowledge, in the digital age, the efficiency of classroom teaching in colleges and universities needs to be improved urgently. In the limited time, let the students acquire more knowledge, to enrich students' learning experience and learning style is the collision between the digital era and college classroom teaching the spark of wisdom.

Du (2016) studied that HTML5 Interactive animation development practice. The result of this research found that is suitable for those who want to learn HTML 5 new technology and Web front-end developers, and can also be used for digital media, animation design or web development related majors in universities. The book does not require programming experience, but with a programming foundation, it is easier to understand the book. The textbook is open to all students who are interested in dynamic web pages and interactive animation. The teaching content will be changed from shallow to deep, combining theory and practice, and gradually transition from basic grammar to students who personally design animation interaction to stimulate students' interest in web interaction design.

Zhang & Yao (2014) studied that 3dsMax animation design and production. The result of this research found that from the basic knowledge of software, by gradually explaining the example operation and skills, so that the beginners' software operation level has been greatly improved, become a high level of 3D designer. At the same time, many chapters are used to make typical cases, and the basic knowledge of the chapters is applied to help readers further consolidate the knowledge of what they have learned. This book is detailed, clear thinking, illustrated, combining theory and practice, and makes a comprehensive introduction of 3dMax 2014 through a large number of sample documents. This book is suitable for undergraduate and graduate students in universities, as well as readers engaged in the fields of animation and architectural design.

Zhou (2018) studied that the application of traditional painting techniques in digital painting. The result of this research found that art comes from life, and it is above life. Art is the expression of life at the ideological level, and eventually it will be return to life, and guide it forward. Through the current social science and technology is highly developed now. The paper summarizes the important application of artistic creation in the field of digitization. In the development of digital technology today. Painting creation only by taking its sail, and pay attention to avoid its wind and waves, in order to prosper for a long time.

Wang (2017) conducted a study on the influence of digital technology on painting creation. The results of this research indicate that the Chinese government and the public should consider its uniqueness and pay attention to preserving its diversity while fully utilizing its positive role in social development. The effective way to develop and utilize our artistic resources is to encourage the intensive cultivation and cultivation of artistic creation, improve the level and quality of artistic creation, and promote the development and prosperity of technology.

Tan (2015) studied that the study of the influence of digital technology on the shelf painting. The result of this research found that artists who create painting should not forget the origin of artistic creation, and find or maintain the original intention of artistic creation. Contemporary, of course, there is no lack of artists who still do not lose their spiritual pursuit in their artistic creation, and have lofty ideals and pursuit of artistic creation. In the impetuous atmosphere of social development, contemporary artists should maintain their original heart, improve their own cultural

and artistic accomplishment, find inner peace in cultural and artistic works, and return to the lofty creative passion for art in artistic creation.

Han (2015) studied that the application of digital teaching resources in painting teaching. The result of this research found that use digital resources to stimulate students' interest in learning. Digital teaching resources to adopt a more interesting teaching Form to attract students' attention, stimulate the interest in learning. A large number of network resources can provide students with more abundant learning materials. The teaching content is not only limited to the textbook, but also can collect some other resources to enrich the teaching, expand students' knowledge, and leave a deeper impression on students. In this process, Through the display of materials, students can learn more knowledge, feel the fun of learning, so as to stimulate the interest in learning.

Karantzalos (2020,P.330-332) studied that curriculum construction planning and implementation in terms of curriculum construction, according to the orientation of the college and the talent training objectives and requirements of various majors, the curriculum system of each major is constructed. In view of the demand of teachers' ability in the basic education reform and the demand of professional talents in the technical development in the industry, some courses are adjusted timely to ensure that students can meet the requirements of employers after graduation. The college strictly carries out the course plans of each major to ensure the quality of talent training.

Cassidy (2022,P.419-444) studied that the college has incorporated the construction of the second classroom into the talent training system, which believes that it is the way to cultivate students' practical innovation ability and learn to find and solve problems according to practical problems. The main forms of the second class of the college are: Among all the professional training programs of the school, the courses of art practice and art investigation (which have been opened for nearly 30 years), the course is connected with the second class, with 4 required credits, and are completed both in and out of the class. Encourage students to participate in all kinds of extra-curricular scientific research projects and professional competitions, specifically for college students 'innovation and entrepreneurship plan projects, extracurricular scientific research projects, national and provincial college students' art and design competitions, and international art and design competitions.

Kolb & Kolb (2015,P.193-212) studied that the first is to do a good job of freshmen enrollment adaptation and professional education work. In the first semester of students' enrollment, the college has carried out guidance and education work on enrollment adaptation, study planning and major consolidation throughout the whole semester. By the college. The vice president in charge, deputy secretary and director of each department are specialized in professional learning, ideological and political affairs and daily norms. Lecture, so that students into the university as soon as possible, advocate active learning, excellence. The second is implementation. Teaching head teacher system. Have an in-depth communication with each student once every semester, participate in and guide the students in the class. Two collective activities, guide the students to enter the role in all aspects. The third is to introduce peer education. Invite seniors and. Some alumni and freshmen exchange experience, and actively guide students to make a good study plan as soon as possible, and then plan. The road of life. In addition, the college also includes students who are included in the innovative education and comprehensive talent training program.

Roberto & Tedbart (2023) studied that different teaching creativity in painting. The result of this research found that correct use of multimedia information technology, stimulate students' initiative in learning painting. In the process of painting teaching, teachers should use multimedia information technology correctly and give full play to it The advantages of multimedia technology in classroom teaching promote the classroom teaching of painting towards diversification. To the continuous development, this is also a necessary means to improve the quality of painting classroom teaching. Therefore, in the use of more than a few In the process of teaching media information technology means, more scientific and reasonable ways should be adopted, as far as possible avoid formal teaching, can through image, video, sound and other multimedia technology, make painting teaching materials The content is more vivid and interesting in front of the students, fully mobilize the mentality function of the aesthetic subject, make the students become more willing to learn, more love painting.

Nigel (2018) studied Leonardo Da Vinci's painting and found that it not only encompasses the history of painting but also delves into profound and extensive ideological content. From the perspective of physiology and visual perception, Da

Vinci deeply explores composition, form, formal language, and content expression in his artwork. He boldly innovates and presents numerous subversive views. For example, he believes that the color of the no The idea that color is a reflection of light rather than the color of the object itself is still instructive today. He also explores the balance between realistic and imaginative expression, and puts forward the concept of "rational". The painter should show the essentially more profound truth and aesthetic feeling through his own thinking, imagination and feeling.

Khan (2020.P.4919-4935) studied that teaching reform is the key to improve the quality of undergraduate teaching level and talent training quality. The college attaches great importance to teaching reform and actively encourages teachers to apply for national, provincial and university-level quality engineering and teaching reform projects. With the backlog of teaching reform for many years, the overall idea of college teaching reform at three levels has gradually formed, namely, the reform of training excellent innovative talents, the reform of professional talent training mode, and the reform around the practical innovation ability and the comprehensive ability of teachers.

Lakkah, Alimam & Seghiouer (2017,P.1-5) studied that the end of an art class is not the end of the creative process. After the creation of art works is completed, the teacher should guide the students to show and re-create through Wechat, QQ, listen to many suggestions, constantly improve and optimize the works, or turn the creative design works into real objects, which is the original intention of the maker. When the students' creative enthusiasm is ignited, the teacher should guide the students to complete the further expansion after class. To this end, the author created the "Zero Point Animation" community, developed the digital art sample course resources, guide students to participate in the national youth information technology innovation practice activities. In the national computer production activities, many of the students have won the first prize. After graduating from the university art major, many students have become the leaders in the field of automotive industry design and game animation design. After years of practice, the author has summarized the process for implementing digital art classroom teaching. This includes guiding students through cloud-based multimedia situations (such as games, videos, and stories), engaging in teacher/student activities (such as interactive electronic whiteboards, microphones, and digital story teaching), providing

information resources for learning tasks and creating digital boards, reviewing the digital environment and network media display, and promoting collaborative learning. This is an ecological and experiential teaching chain based on the information environment.

Soloman & Felder (2019,P.22-24) studied that from the projector and infrared electronic whiteboard to the large screen touch all-in-one machine, from a digital board to a tablet computer with electromagnetic pen for each person, the interaction between teachers and students is becoming more and more frequent in class. Teachers can not only show the good teaching courseware, but also introduce some audio and video and network resources into the classroom with the help of mobile terminals and digital boards, so as to enrich the content and methods of digital teaching. For example, teaching".

Hargreaves (2022,P86-88) studied that since the establishment of the department of fine arts in 1986 and the establishment of the department of fine arts in 1990, the discipline has gradually developed into a multi-level undergraduate and master talent training system with the tradition of teacher education and Ling nan art characteristics. At present, it has trained 2781 undergraduate and junior college students, 450 master's students, and more than 7000 non-academic education. The employment rate has reached 100% over the years. It has won awards in the National Art Exhibition, Guangdong Art Exhibition, Guangdong College Student Art Normal Skills Competition, National College Student Innovation and Entrepreneurship Competition, National College Student Advertising Competition, College Student Film Festival and other competitions. The college has always put talent training in the first place, and taken the control of the quality of talent training as the general starting point of teaching, scientific research, service and other work. Through strict school registration system, attendance system, the early credit screening system of serious learning discipline, forging good credits, guide students to active learning, independent success: creating "sketch, color basic skills contest" characteristic project, encourage students to professional foundation and comprehensive quality training, actively the professional learning and comprehensive ability training results into all kinds of competition entries or patent achievements, form college art design subject characteristic brand project.

Vasily (2020) studied that on the spirit of art. The result of this research found that Art is the product of The Times, it can create a spiritual atmosphere, directly improve and purify the human mind. The creative task of art is to serve the form to the inner meaning. Art is a forward and upward movement, just like the spiritual life. When society develops to the modern era when religion, science and morality are shaken, the human sight turns from the outside to the heart. Internal need is the basis of various size problems in painting, and people today are looking for a way to turn themselves from the outside to the inner foundation. Although painting has taken an important step in rejecting the three-degree space and moving towards a single plane, it must be liberated from the material restrictions to a harmonious structure that is more infectious to the mind than to the eyes.

Microsoft (2020) studied that windows media encoder SDK for windows media 9 Series. The result of this research found that The teaching of digital technology painting expands students' horizons. The classroom teaching of painting, we must have a rich painting works as the content of appreciation. Multimedia information technology Art can be through the Internet powerful search function, from the network to collect many ancient and modern Chinese and foreign paintings, for students to appreciate in the painting teaching classroom, in the improvement of students' painting appreciation ability at the same time, expand the students' painting vision. Make the students in the painting class, they can be exposed to some of the art works that are not accessible at ordinary times, which not only enriches the students' knowledge, but also stimulates their infinite potential, and improves the teaching quality of the painting teaching.

Grout (2017) studied that virtual painting art. The result of this research found that The use of high media assisted painting teaching can be simple, fast, intuitive to highlight the learning process, so that students can easily understand and understand, so as to shorten the teaching time, improve the teaching efficiency, (change abstract preaching to image demonstration, set pictures, Text, sound, image in one, rich in content, easy to modify, is the main features of CAI). The traditional painting teaching mode is "a piece of chalk, a mouth, a wall chart everywhere", mainly is the teacher to explain the demonstration, students practice consolidation, painting teaching often want to spend a lot of time and energy to explain knowledge, training skills, especially the introduction of some abstract knowledge,

such as thinking about space .The training of the elephant force, sometimes spent a lot of effort to talk about the hype, mouth foam flying, but not necessarily can understand and master, and this is also May only one intuitive presentation in the multimedia can solve the problem. It is difficult for students to understand parallel perspective and Angle perspective, and it takes a lot of time to explain, and this part is difficult. In addition, in the multimedia, only from the form of the film screening, the use of the dynamic image, students can suddenly understand the changes and principles of perspective, the difficulties are easily solved, to achieve the effect of twice the result with half the effort.

Fox & Kemp (2020) studied that interactive painting. The result of this research found that Multimedia painting teaching enhances the ability of independent learning, expands the teaching time and space and uses CAI. Teachers speak less in some courses,or even do not say, give the style position to students, but the classroom is better. Multimedia for students on the Internet about the characteristics of the learning content and introduction, in the form of group summary, teachers will collect data into courseware, so under the cooperation of multimedia, a class of learning under the auspices of the teacher the students, fully embodies the leading role of the teachers and the principal role of students, both formed the atmosphere of students' autonomous learning, and enhance the enthusiasm of students' autonomous learning, more give students autonomous learning opportunities.

Forteyer & Kinetic (2020) studied that painting: Designs for active envelopes. The result of this research found that digital technology is developing deeply into all walks of life, for the education industry, information technology. With a strong teaching guidance effect, the network and intelligent teaching methods make the classroom teaching take on a new look. In such an educational background, multimedia digital information technology and curriculum have gradually realized efficient integration, especially for such intuitive and vivid subjects as painting, the teaching environment is further activated and students. It is easier to perceive the unique beauty in painting works and form an independent artistic cognition in learning. Teachers should start from the practical teaching application strategy and discuss how to realize the clever integration of multimedia and painting teaching.

Arnheim (2020) studied that painting art and visual vision. The result of this research found that using the digital technology information platform to share a variety of paintings. Pictures are vast, and several basic textbooks can only include some of which are representative. It is difficult for students to have contact with the vast art world, once the lack of teachers' supervision or In teaching expansion, it is easy to fall into a narrow vision of knowledge, and can not be led in the process of comprehensively observing the overall picture of the painting subject. Slightly diverse in its beauty. Therefore, teachers can actively apply the information platform to share one in the classroom teaching. The website and links of some painting works, from the united states, painting network to petal network, painter tong, can be learned. Students learn to paint, understand the medium of painting. The display of information also makes the paintings "within reach", learning. Students can not only see the excellent works of "big touch" and "famous masters" from the sharing of the platform, but also see how the immature style step by step faded and draw more and more wonderful and more vivid, so as to enhance personal confidence in learning painting.

Frolov (2020) studied that history of science. The result of this research found that The application of digital technology in painting teaching obtained the good effect, teachers can increase the proportion of multimedia teaching, according to the teaching of the students' actual interest and learning needs to adjust, and play the application value of multimedia, inspire the enthusiasm of students to learn painting and talent, promote the painting teaching ecological gradually improve.

Dai (2019) "Application of the delphi method to construct the investigation of primary school calligraphy teaching evaluation system". The article puts forward the teaching evaluation is a very important link in the complete teaching activities, teaching evaluation is the whole teaching activities connecting the teacher and the students, teaching and teaching between the important hub. Primary school calligraphy teaching evaluation plays an important role in primary school calligraphy education, it is the teaching and learning activities in the calligraphy course has reached or has not yet reached, but it is possible to reach the value of the judgement, is to take a certain evaluation criteria and evaluation methods so that the students of calligraphy learning activities for description and judgement. Teaching evaluation has a great summarizing and guiding role in improving teaching quality.

This paper explores the theoretical problems faced by the teaching evaluation of primary school calligraphy in the construction of the evaluation system, adopts the Delphi method as the basic practical method, and explores through questionnaire survey method, interview method, comparative experimental method and other research methods. Through the collection of opinions from fifteen professionals in related fields, he formed a theoretical framework and applied it in practice with the actual situation of calligraphy class in a primary school in Beijing, and put forward his personal understanding and opinions. He comprehensively demonstrated the use of the Delphi method in educational research, which brought great reference to my dissertation research.

Chen & Yang (2023) it is proposed to construct a performance evaluation index system of excellent youth science fund projects, which can provide a scientific basis for the national natural science foundation of china and the supporting units to carry out the project management of excellent youth science fund. Through literature analysis, a preliminary framework of the performance evaluation index system of excellent youth science fund projects is formulated; the Delphi method is adopted,25 experts from national universities and research institutes are selected for consulting, the evaluation indexes are scored and screened, and the weights of the indexes are determined by using the hierarchical analysis method, and the performance evaluation index system of the excellent youth science fund projects is formed at last. The results show that the performance evaluation index system of excellent youth science fund projects constructed through the combination of Delphi method and hierarchical analysis method is scientific and reasonable, and the degree of expert enthusiasm, authority and coordination is high.

Ma (2022,37-44) in order to further improve the school-based training mechanism and build a high-quality, professional and innovative team of teachers' professional development leaders, The study attempts to analyze the competency characteristics of outstanding kindergarten training organization leaders through the key behaviors they have demonstrated, and to compile a "kindergarten training organization leader competency model" by using the Delphi expert consultation method. "The model was developed using the Delphi expert consultation method. At the theoretical level, it aims to strengthen the research on the connotation and standard of training organization construction, clarify the role and responsibilities of

kindergarten training organization leaders, and enrich the existing teacher education theory; at the practical level, it tries to solve the confusion of kindergarten training organization leaders in training activities, and provide reference and reference for the selection, training and assessment of leaders, as well as the organization and implementation of kindergarten teachers' training activities and the improvement of their quality. The study is an attempt to solve the confusion of kindergarten training organization leaders in their training activities.

Zhang & Wang (2021, p47-52) utilized the Delphi method to gather three rounds of opinions from 19 experts affiliated with universities and research institutes regarding the components, connotations, and weights of the evaluation index system for students' quality of mathematical innovation. This resulted in five primary indicators and thirteen secondary indicators: knowledge mastery (level of basic mathematical knowledge, acquisition of new knowledge, and organization of knowledge), thinking power (divergent thinking and convergent thinking), self-monitoring (evaluation, reflection, regulation), practical ability (discovering and proposing mathematical problems, designing and implementing problem solutions, as well as resource use and management), communication (acquiring and expressing opinions). These indicators provide standards and tools for cultivating and assessing students' quality in mathematical innovation education.

Gao, Zhang & Wang (2021,p32-34) it is believed that with the development and application of network information technology, the application of information technology in education and teaching has been gradually popularized and deepened, and all kinds of online teaching platforms and teaching APPs have emerged in an endless stream, and online teaching has become a regular teaching method through auxiliary teaching means in the past, especially in the period of prevention and control of the Xin Guan epidemic, the online teaching has gained greater and wider popularity and application. The organizational form, teaching resources, and teaching process of online teaching are all different from traditional classroom teaching. Therefore, the evaluation of the quality of online teaching cannot be copied from the evaluation method and standards used in classroom teaching. After conducting literature reading and group discussions, we have initially developed an expert consulting index system based on national quality course standards. We then utilized the Delphi method for two rounds of expert

consultations to modify, add, or delete indexes based on experts' scores and feedback. Additionally, we calculated the level of expertise among the experts, their motivation levels, as well as the degree of coordination among their opinions. Finally, we established a comprehensive set of criteria for evaluating online teaching quality.

Zhou (2023. p184-186) suggests that in English applied linguistics, there are undoubtedly advantages and disadvantages to each research method in terms of the purpose of the research and the particular context. A comparison with participant observation and personal interview methods reveals that focus groups (group interviews) have the advantages of being efficient, relaxed and less costly, and that they lead to the collision of more novel ideas, while mail (postal) questionnaires are far less costly than interviews when compared with standardized interviews, while avoiding the problem of bias on the part of the interviewer. However, both research methods, focus groups and questionnaires, also have some limitations.

Han (2021, p57-58) suggests that with the continuous advancement of economic globalization and the large-scale popularization of the Internet, there is a growing demand for international communication in China. Basic English application ability is not only limited to a few professionals, but also an important skill for most people in their study and work. College English teaching is generally characterized by a single teaching mode, inappropriate choice of teaching materials, and insufficient attention from teachers and students. The study initially explores the rationality and feasibility of teaching English reading ability in tertiary institutions under the guidance of input theory, in order to provide reference for tertiary teachers to carry out English reading teaching.

Hao (2016 P139-140) suggests that nowadays, the competition in the social product market is very fierce, and there are many acquaintance social products and stranger social products. The article uses the qualitative research method of focus group to explore the user's needs for social apps, aiming to explore a social app with the theme of horoscope. The study found that the app is suitable for communicating with semi-cooked relationship circles composed of second- and third-degree connections, and it mainly provides users with horoscope analyses, friend-matching recommendations, chat windows, and entrances to offline activities, and other functions.

Chapter 3
Research Methodology

The purpose of the paper is to develop and evaluate effective digital painting design and teaching technical support models. Through the 3 research goals to achieve the research results.

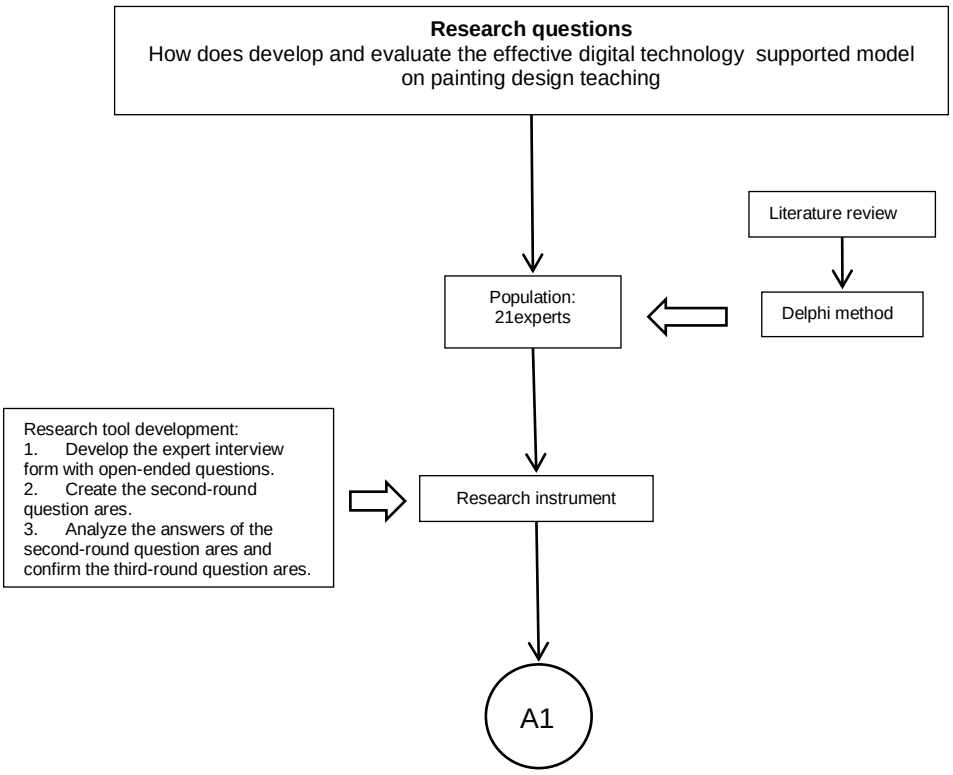
1. To study the component of problem and resolution on effective painting design teaching.

2. To develop an effective digital technology supported model on painting design teaching.

3. To evaluate the effective digital technology supported model on painting design teaching model.

There were three processes of research which were research proposal preparation, research procedures, and research report. The research procedures consisted of tow phases: (1) Employ the Delphi method to achieve objective 1 and objective 2. (2) Employ the focus groups to achieve objective 3.

The overall research process and steps can be summarized sa shown in the following figure.



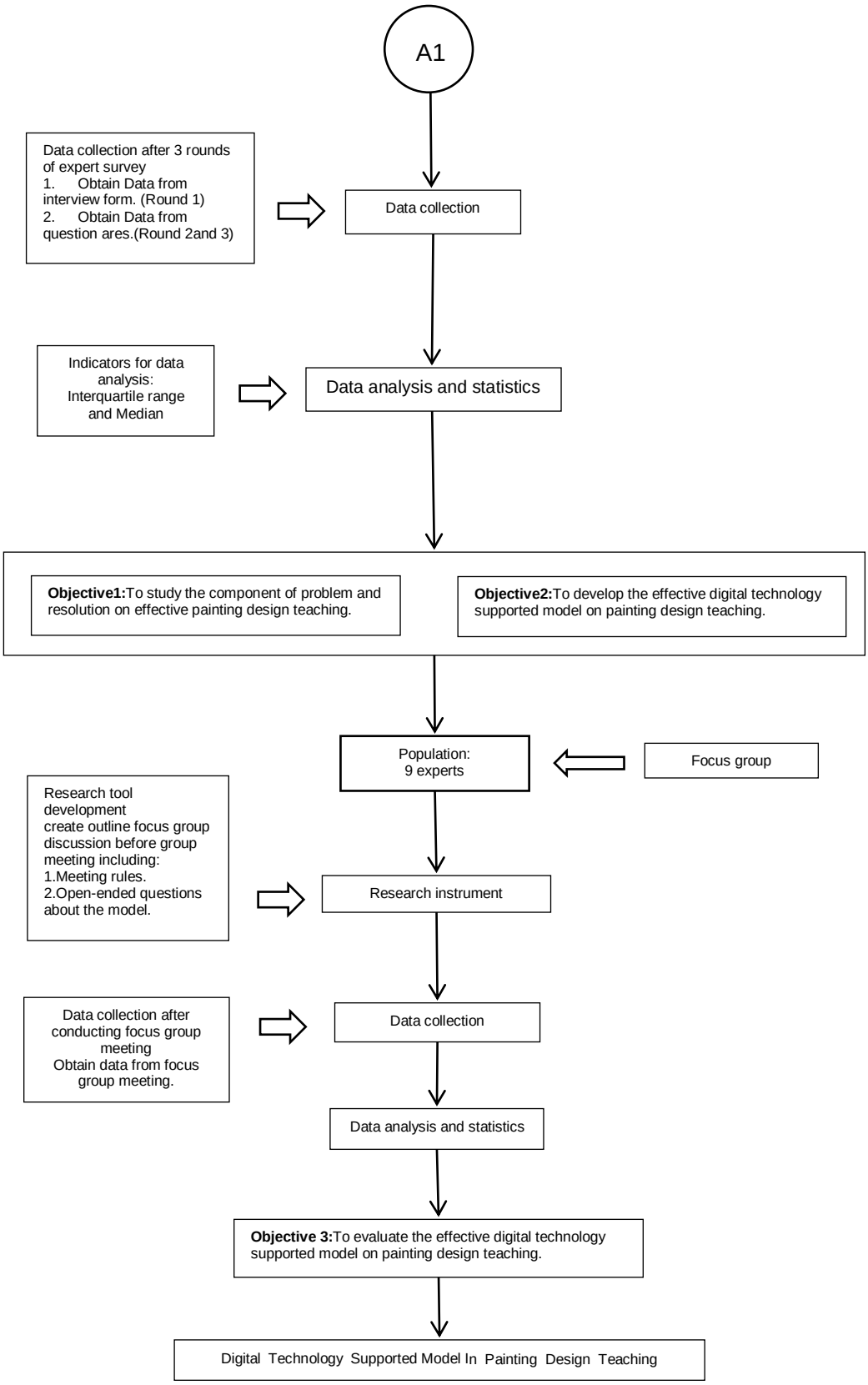


Figure 3.1 Details of the research process step

The detailed content of the research method is as follows:

Stage 1

Employ the Delphi method to achieve objective 1 and objective 2.

The Population

Selection of 21 experts from the field of teaching drawing and design or teaching digital technology within the Chinese region.

The qualifications of these 21 experts are as follows.

1. More than 10 years of work or teaching experience.

2. Having an intermediate or above professional title or a doctoral degree.

3. Teachers in the field of art or digital technology fields.

4. Extensive experience in teaching drawing and design, as well as using digital technology.

Research Instruments

1. Expert questionnaire content

There are three versions of the expert questionnaire, corresponding to three rounds of expert opinion consultation:

(1) The first version is an expert interview form. Researchers use a questionnaire consisting of three parts, as follows:

Part I: Demographic variables checklist and general information of the respondents.

Part II: Variables determining effective painting design teaching (rated on a five-point scale).

Part III: Suggestions and additional comments (open-ended).

The instrument proposed an effective painting design teaching model, requiring the respondents to determine the degree to which each statement reflects the components of effectiveness. Each statement was measured on a 5-point Likert scale (1932).

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. As shown in the table 02.

Table 3.1 Measurement scale of effective painting design teaching

Perception level	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

(2) The second version is a five-level estimation questionnaire that combines the opinions of the first round of experts. The specific content is:

The characteristics of painting design and teaching models that affect digital technology support.

(3) The third version is a five-level estimation questionnaire with the same content as the second round, and includes the corresponding indicator values (Quartile range, median) for the second round of scoring results.

2. Construction process of expert questionnaire:

Step 1: Construct the first-round of expert questionnaire;

Step 2: Invite 5 experts to test the target consistency index (IOC) of the expert questionnaire;

Step 3: Modify the expert questionnaire based on the expert's suggestions;

Step 4: Distribute expert questionnaires to 21 experts;

Step 5: After collecting opinions on the questionnaire, prepare the first draft of the second-round of expert questionnaire;

Step 6: Conduct the remaining two rounds of expert questionnaires (the same method as the first five steps);

Step 7: Summarize three rounds of expert opinions to obtain a digital technology supported model on painting design teaching.

Data Collection

Researchers collect data based on research tools. The steps are as follows:

1. Design and develop an expert questionnaire to determine a list of 21 experts who can participate in three rounds of questioning.

2.The researchers requested that the graduate school of Bansomdejchaopraya Rajabhat University issue a letter requesting the collection of 21 experts.

3. Implement three rounds of expert opinion survey and feedback.

4. Analysis of expert opinions. After each round of expert feedback, opinions are gathered based on the content of the expert questionnaire, ultimately forming a consensus view.

Data Analysis

In the data analysis of this study, researchers analyzed the questionnaires provided by experts in the fist and second rounds using statistical indicators, as follows:

Mode (Mo)

The mode refers to the number of occurrences or the most frequent value in a set of data, which is a positional average and is not affected by the values of extreme variables. Plurality is primarilyused to measure concentration trends in categorical data, but can also be used to measure concentration trends in ordinal and numeric data.

Interquartile range (IQR)

The Interquartile range can be used to analyze the concentration and distribution of expert opinions. This article adopts the consensus standard from Wu Jianxin's (2014) viewpoint, as follows.

Table 3.2 Interquartile range consensus standard

Interquartile range	Consensus Degree
0≤IQR≤1.8	High
1.8≤IQR≤2.0	Medium
IQR≥2.0	Low

Median (Md)

The median is the score in the middle of the score data provided by all experts in order. It can describe the concentration trend of expert opinions, and then explain the meaning according to the standards set by the researcher as follows

Table 3.3 Median range consensus criteria

Median	The possibility of this item
Md ≥ 4.50	Most likely
3.50 ≤ Md ≤ 4.49	More likely
2.50 ≤ Md ≤ 3.49	Moderate likely
1.50 ≤ Md ≤ 2.49	Least likely
Md ≤ 1.50	Least likely

The median was obtained from the Answers from all experts, Then interpret the meaning according to the criteria set by the researcher as follows:

The median of 4.50 and above means that the group of experts considers that. The statement is most probable.

The median value is between 3.50-4.49, meaning that the group of experts considers that the statement is very likely.

The median value is between 2.50-3.49, meaning that the group of experts considers that the message is likely Moderately possible.

The median value is between1.50-2.49, meaning that the group of experts agrees that the message is likely Less likely.

The median value is less than1.50, indicating that the group of experts considers the message least likely.

This paper develops the questionnaire of digital technology supported model in painting design teaching, Anhui province, China, and determines the suitability and feasibility of the questionnaire answers through the results of the second and third rounds of questionnaire feedback. After the feedback of the third round of questionnaire, the median value is 3.5or higher, which is considered as the high level agreed by experts. Experts believe that IQR (Interquartile distance) is consistent at 1.50 and below.

Stage 2

Employ the focus groups to achieve objective 3.

Research Instruments

Discussion Outline

In the effective teaching of drawing design, the researcher utilized each component of the problem and solution, starting with stage (2), and evaluated the model through focus group discussions in order to bring experts together for discussion and consensus on the final opinion.

Population and Sample

The main personnel are composed of 9 experts.

Condition requirements for major personnel:

1. They are professionals who propose to teach drawing and design or work with digital technologies using relevant management experience.

2. They have reasonable experience or achievements in the evaluation of drawing and design teaching models.

3. They are widely recognized for their mode of teaching painting design, which is supported by digital technology.

The key informants weaseled ted by purposive sampling technique with the above criteria.

Discussion Outline

A discussion outline is a summary of the topics to be covered in the focus group meeting. The discussion outline generally includes two parts:

(1) meeting rules.

(2) Open-ended questions about the model.

Data Collection

The data collection steps are as follows:

Step 1: Determine the time, location, and 9 group members for the focus group meeting.

Step 2: Keep contact with key line people and show your identity and willingness. Select researchers as host, orderly organizing meetings.

Step 3: Develop a focus group discussion outline.

Step 4: Formally implement a focus group meeting, with the host stimulating in-depth discussions among group members. Members interact each other and have more ideas.

Step 5: Use the recording device to record the discussion process of the meeting, and write the focus group meeting report after the meeting.

Data Analysis

Based on the voice recordings and meeting reports of the focus group meeting. Analyze their acceptance of the feasibility of the research model. The details are as follows:

1. The focus group discussion was chaired by the researcher, this discussion was about evaluating painting design teaching model in higher vocational colleges.

2. Based on the principles of freedom and voluntary, the experts spoke freely during the discussion, and gave the direction of objective 2 (To develop an effective digital technology supported model on painting design teaching).

3. According to the research results of researcher objective1 (To study the component of problem and resolution on effective painting design teaching), and gave more new ideas on digital technology supported model on painting design teaching.

Summarize

This study is mainly divided into the following two stages. The author will complete it one by one in the order of time:

Stage 1: Use Delphi to achieve objective 1 and 2, that is, the painting design and teaching model of digital technical support to obtain digital technology supports whether the factors that affect digital technology support are reasonable. The author then develops the model through the elements of literature review and expert opinion.

Stage 2: Use the focus group to achieve objective 3, that is, evaluate the feasibility of painting design and teaching models supported by digital technology.

Chapter 4
Results of Analysis

The aim of this study is to investigate a teaching model for painting and design supported by digital technology. The objectives of this research are:

1. To study the impact of problem and resolution in effective painting design teaching.

2. To develop the effective digital technology supported model in painting design teaching.

3. To evaluate the effective digital technology supported model in painting design teaching.

The data analysis results of the study are as follows:

1. Symbols and Abbreviations
2. Data Analysis
3. Data Analysis Results

Symbols and Abbreviations

IQR	Refers to the Inter-Quartile Range
Md	Refers to the Median
Mo	Refers to the Mode

Data Analysis

Part One: Analysis Results of Interviewees' Personal Information, Classified by Gender and Educational Background. The researchers presented the data in terms of frequency and percentage.

Part Two: Analysis Results of Interview Data on the Current Situation and Issues of Drawing Design Teaching Modes Supported by Digital Technology.

Part Three: Analysis Results of Questionnaire Data on Drawing Design Teaching Modes Supported by Digital Technology, Classified by Median, Mode, and Quartile Range.

Part Four: Analysis Results of Focus Group Discussions on Drawing Design Teaching Modes Supported by Digital Technology Through Qualitative Analysis.

Part Five: Descriptive Analysis Results of Drawing Design Teaching Modes Supported by Digital Technology.

Data Analysis Results

Researchers divided the data into 5 sections for analysis as follows:

Part One: Analysis Results of Interviewees' Personal Information, Classified by Gender and Educational Background. The researchers presented the data in terms of frequency and percentage.

Table 4.1 Translation of Interviewees' Personal Information

	Personal Information	Frequency	Percentage
Gender	Male	19	90.4%
	Female	2	9.6%
	Total	**21**	
Age	40-49 years	17	90.9%
	50-70 years	4	9.1%
	Total	**21**	
Working years	10-20 years	16	71.4%
	20 years and above	5	23.8%
	Total	**21**	
Title	Associate Professor	13	62.0%
	professor	8	38.0%
	Total	**21**	
Professional field	Feld of art	13	62.0%
	Digital technology field	8	38.0%
	Total	**21**	

According to Table 4.1, there were 19 male respondents, accounting for 90.4%, and 2 female respondents, accounting for 9.6%. In terms of age distribution, there were 17 individuals aged 40-49, constituting 90.9%, and 4 individuals aged 50-70, constituting 9.1%. Regarding years of work experience, 16 individuals had 10-20 years of experience, making up 71.4%, while 5 individuals had over 20 years of experience, comprising 23.8%. Additionally, 13 respondents held the title of associate professor, representing 62.0%, and 8 respondents held the title of professor, representing 38.0%. In the professional field, there were 13 participants engaged in teaching fine art, accounting for 62.0%, and 8 participants serving as Digital technology field, accounting for 38.0%.

Part Two: Analysis Results of Interview Data on the Current Situation and Issues of Drawing Design Teaching Modes Supported by Digital Technology.

Round 1 results

In order to study the elements of studying the component of problem and resolution on effective painting design teaching, 21 expert were interviewed and the following results were obtained.

Table 4.2 Analysis of the Current Situation of Digital Technology Supported Model in Painting Design Teaching

Items	High	Medium	Low	Unspecified	Total
Utilization of Educational	19	2	0	0	21
Resources	90.5%	9.5%	0.00%	0.00%	
Teaching reform	18	3	0	0	21
	85.7%	14.3%	0.00%	0.00%	
Classroom Teaching	19	2	0	0	21
	90.5%	9.5%	0.00%	0.00%	
Student Development	21	0	0	0	21
	100%	0.00%	0.00%	0.00%	
Quality Assurance	17	4	0	0	21
	80.9%	19.1%	0.00%	0.00%	
Items	**High**	**Medium**	**Low**	**Unspecified**	**Total**

According to Table 4.2, which reflects the survey findings of 21 experts on Q1: What are the current problems in the teaching mode of painting design supported by digital technology? The survey on current issues covers the use of educational resources, quality of education research, classroom teaching, student development, quality assurance, etc. Each aspect is evaluated as high, moderate, low, or uncertain levels. The overall level of using educational resources was rated as high by 90.5% of respondents, with a moderate level of acceptance at 9.5%; the overall level of education quality research was rated as high by 87.5% of respondents, with 14.3% rating it as moderate; the overall level of classroom teaching was rated as high by 90.5% of respondents, with 9.5% rating it as moderate; the overall level of student development was rated as high by 100% of respondents; the overall level of quality assurance was rated as high by 80.9% of respondents, with 19.1% rating it as moderate.

Table 4.3 Round 1 Survey Results: Utilization of Educational Resource

N0. The strategy for effective Utilization of educational resources
Impact of digital technology on teaching.
1. Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.
2. Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.
3. Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.
Digital literacy of students.
4. Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.
5. Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.

Table 4.3 (Continued)

N0.	The strategy for effective Utilization of educational resources
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.
Utilization of digital technology in classroom resources.	
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.
9.	Encourage students to actively participate in the use of digital technology resources.
Curriculum resources	
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.
Curriculum resources.	
13.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.
14.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.
15.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.

Table 4.3 (Continued)

N0.	The strategy for effective Utilization of educational resources
Quantity, Structure, and development of courses.	
16.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.
17.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.
18.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students.
Teachers' Digital Literacy Teachers' Digital Literacy.	
19.	Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction.
20.	Establish digital technology communities or networks where teachers can share experiences, resources, and teaching strategies. Through collaborative learning, teachers can inspire each other, solve problems together, and learn from each other's best practices.
21.	Provide specialized training courses and workshops focusing on digital technology to help teachers acquire skills in using digital tools and resources, understand the latest educational technology trends and best practices. Training should be ongoing to ensure that teachers can keep pace with technological developments and continually enhance their digital literacy levels.

According to Table 4.3, which reflects the responses of 21 experts to the current problem of "teaching mode of painting design supported by digital technology," what do you think are the effective strategies for Utilization of educational resources in the teaching mode of painting design supported by digital technology? Analyzing textual data, categorize effective strategies for educational resource allocation into six classes from Study 1 to Study 18.

Table 4.4 Round 1 Survey Results: Teaching reform

N0.	The strategy for effective Teaching reform
Reform for cultivating excellent innovative talents.	
1.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.
2.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.
3.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.
Reform of Professional talent cultivation model.	
4.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.
5.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.
6.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.
Reform to enhance teachers' comprehensive abilities.	
7.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.
8.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.

Table 4.4 (Continued)

N0.	The strategy for effective Teaching reform
9.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.
Development and implementation of teaching outlines for humanities subjects	
10.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.
11.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.
12.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.
Recognition of practical teaching.	
13.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.
14.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical
15.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.
School management reform.	
16.	Establish and improve school information management systems, including student information management, teacher information management, course management, exam result management, to achieve digitization and networking of educational management.

Table 4.4 (Continued)

N0.	The strategy for effective Teaching reform
17.	Introduce intelligent management tools and platforms such as smart learning ,systems online examination ,campus management systems to enhance management efficiency and service ,management systems .quality
18.	online ,Build an online teaching platform that supports remote teaching providing ,and learning management ,teaching resource management .with a convenient online learning environment teachers and students

According to Table 4.4, which reflects the responses of 21 experts to the current problem of "teaching mode of painting design supported by digital technology," what do you think is the strategy for effective teaching reform in the teaching mode of painting design supported by digital technology? Analyzing textual data, categorize effective strategies for teaching reform into six classes from Study 1 to Study 18.

Table 4.5 Round 1 Survey Results: Classroom teaching

N0.	**The strategy for effective Classroom teaching**
Extent of extracurricular learning expansion.	
1.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.
2.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.
3.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.
The extent of the teaching strategies	
4.	Utilize digital technology to facilitate interdisciplinary integration, breaking down barriers between subjects, and engaging in interdisciplinary projects

Table 4.5 (Continued)

N0.	The strategy for effective Classroom teaching
	and collaborations to provide richer learning experiences and broaden knowledge perspectives.
5.	Explore innovative teaching models and instructional environment designs, such as flipped classrooms, blended learning, smart classrooms, to enhance teaching effectiveness and student engagement.
6.	Utilize digital technology to promote collaborative teaching among teachers and interdisciplinary integration, breaking down the boundaries between subjects, creating interdisciplinary learning environments, and enhancing students' comprehensive literacy and innovation capabilities.
Degree of learning diversity.	
7.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.
8.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.
9.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.
Extent of use of online network learning.	
10.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.
11.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.
12.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.
Teachers' teaching ability in the classroom	
13.	Offer specialized training courses to help teachers learn how to effectively integrate digital technology into classroom teaching, including the use of interactive whiteboards, teaching software, online learning platforms, and other tools, to enhance teaching effectiveness and student engagement.

Table 4.5 (Continued)

N0.	The strategy for effective Classroom teaching
14.	Encourage teachers to experiment with innovative teaching methods and strategies, such as leveraging virtual labs, online collaboration tools, gamification of learning, to enhance students' learning interest and engagement.
15.	Provide timely technical support and services to ensure that teachers can smoothly resolve technical issues and difficulties when using digital technology for teaching.
Content of the course design.	
16.	Enhance the interactivity of the curriculum using digital technology, such as utilizing online discussion forums, virtual experiments, interactive courseware, to stimulate students' learning interest and engagement.
17.	Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate.
18.	Design personalized learning paths and instructional activities based on students' learning levels, interests, and needs, leveraging intelligent technology to provide customized learning experiences.

According to Table 4.5, which reflects the responses of 21 experts to the current problem of "teaching mode of painting design supported by digital technology," what do you think is the strategy for effective classroom teaching in the teaching mode of painting design supported by digital technology? Analyzing textual data, categorize effective strategies for classroom teaching into six classes from Study 1 to Study 18.

Table 4.6 Round 1 Survey Results: Student development

N0.	The strategy for effective Student development
Interactive learning	
1.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.
2.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.
3.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.
Guidance and services for students.	
4.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.
5.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.
6.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.
Students' learning level and attitude.	
7.	Utilize digital teaching resources and multimedia technology to design engaging and interactive instructional content, such as animations, videos, games, to stimulate students' learning interests and enhance their motivation to learn.
8.	Integrate content and activities related to the cultivation of digital literacy into the curriculum, helping students master basic operations and application skills of digital technology, enhancing their information literacy and fostering innovation awareness.
9.	Through project-based learning, practical tasks, and case studies, students are encouraged to apply their acquired knowledge to solve real-world problems, fostering their problem-solving abilities and innovative thinking.

Table 4.6 (Continued)

N0.	The strategy for effective Student development
Study style and learning effect.	
10.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.
11.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.
12.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.
Learning motivation and self-study ability.	
13.	Help students set clear, challenging, and measurable learning goals to stimulate their learning motivation and goal orientation.
14.	Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative.
15.	Utilize diverse learning resources and activities, including virtual experiments, gamified learning, multimedia courseware, to stimulate students' curiosity and desire for exploration, thereby enhancing their learning motivation.
The evaluation mechanism of the learning effect.	
16.	Utilize learning analytics and big data technology to assess students based on their learning data and behavior patterns, identifying learning issues and potential needs, and providing targeted support and recommendations.
17.	Pay attention not only to students' learning outcomes but also to their learning processes and thinking processes. Evaluate their learning depth and understanding ability by observing their learning behaviors and thought processes.
18.	Utilize digital tools and online learning platforms to design diverse assessment tools, including online quizzes, assignment submissions, project presentations, online discussions, to comprehensively evaluate students' learning performance.

According to Table 4.6, which reflects the responses of 21 experts to the current problem of "teaching mode of painting design supported by digital technology," what do you think is the strategy for effective student development in the teaching mode of painting design supported by digital technology? Effective strategies were classified through text data analysis into six classes from Study 1 to Study 18.

Table 4.7 Round 1 Survey Results: Quality assurance

N0.	The strategy for effective Quality assurance
Quality assurance system for teaching.	
1.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.
2.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.
3.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.
Teaching management and supervision mechanism.	
4.	specifying teaching ,Establish teaching quality standards and indicators system for the purpose of ,and performance indicators ,evaluation criteria ,objectives .teaching effectiveness assessing and supervising
5.	Regularly invite education experts or external review committees to evaluate party assessments to promote -providing objective third ,and review teaching .the improvement of teaching quality
6.	,reflection and improvement-self 'Establish a mechanism for teachers encouraging teachers to regularly reflect on and summarize their own teaching .continuously improving teaching methods and strategies ,practices
Utilization of quality information in teaching.	
7.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.

Table 4.7 (Continued)

N0.	The strategy for effective Quality assurance
8.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.
9.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.
Technology research and development and innovative application.	
10.	Create an organizational culture and atmosphere that supports innovation, encouraging employees to propose new ideas, experiment with new technologies, and allowing room for the possibility of failure, thus fostering the continuous emergence of technological research and innovative applications.
11.	Allocate funds and resources to support technology research and innovative application projects, establish dedicated technology innovation funds or incubators, and encourage entrepreneurs and research teams to engage in technological innovation and commercialization applications.
12.	Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological research and innovation achievements, and encourage enterprises and individuals to invest in innovation.
Construction of evaluation index systems.	
13.	Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.
14.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.
15.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.

Table 4.7 (Continued)

N0.	The strategy for effective Quality assurance
Learn about culture and teaching ideas	
16.	Advocate the concept of digital education, enrich teaching resources and provide personalized learning experience with the help of digital technology, and promote the innovation of teaching methods and teaching content.
17.	Advocate sharing and open educational resources, promote open educational resource platform, make learning resources more universal and convenient access, and promote the popularization and development of learning culture.
18.	Establish learning communities and networks, provide a platform for learning exchange and resource sharing, let students and teachers interact and cooperate, and promote the construction and sharing of learning culture.

According to Table 4.7, which reflects the responses of 21 experts to the current problem of "teaching mode of painting design supported by digital technology," what do you think is the strategy for effective quality assurance in the teaching mode of painting design supported by digital technology? Effective strategies were classified through text data analysis into six classes from Study 1 to Study 18.

Before conducting the expert questionnaire survey, invite five experts to confirm the Index of Objectivity Consistency (IOC) of the questionnaire. After analysis, these five experts have no consistency issues in the overall category.

Part Three: Analysis Results of Questionnaire Data on Drawing Design Teaching Modes Supported by Digital Technology, Classified by Median, Inter-Quartile Range, and Mode.

The basic process and results of the second round of expert consultation are as follows:

Basic process.

The research process of this round is divided into five steps.

Step 1: Researchers invite experts through email, WeChat, phone calls, and other social media platforms. WeChat and phone calls are generally used to invite experts with whom the researchers are personally familiar, while email is used to invite unilaterally familiar experts.

Step 2: The previously constructed "Theoretical Framework of Painting Design Teaching Mode Supported by Digital Technology" (as shown in Table 1.7) is converted into a "Consultation Form for Standard Framework of Painting Design Teaching Mode Supported by Digital Technology" using a 5-level scale.

Step 3: Based on the "Consultation Form for Standard Framework of Painting Design Teaching Mode Supported by Digital Technology," the "Research Expert Consultation Questionnaire for Standard Framework of Painting Design Teaching Mode Supported by Digital Technology" is compiled.

Step 4: The questionnaire, along with the theoretical basis for its development and relevant explanations, is sent to the selected 21 experts for evaluation through direct delivery, email, or electronic correspondence to solicit their opinions on the framework.

Step 5: The opinions of the experts are collected, tabulated, analyzed, and summarized.

(The process for the third round is as described above.)

(2) Research result.

The results of the round-2 survey are as follows:

Table 4.8 Survey Results Round 2: Utilization of educational resources

Items	Utilization of educational resources	Md	Mo	IOR	Consensus
Impact of Digital technology on teaching.					
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.	5.0	5.0	0.0	85.71%
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate	5.0	5.0	0.0	85.71%

Table 4.8 (Continued)

(n = 21)

Items	Utilization of educational resources	Md	Mo	IOR	Consensus
	students' interest in learning.				
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.	4.0	5.0	0.5	80.95%
Digital literacy of students.					
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.	4.0	5.0	0.5	80.95%
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.	5.0	5.0	0.0	85.71%
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.	5.0	5.0	0.0	85.71%
Utilization of digital technology in classroom resources.					
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.	4.0	5.0	0.5	80.95%

Table 4.8 (Continued)

(n = 21)

Items	Utilization of educational resources	Md	Mo	IOR	Consensus
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.	5.0	5.0	0.5	90.48%
9.	Encourage students to actively participate in the use of digital technology resources.	4.0	5.0	0.5	80.95%
Curriculum resource.					
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.	5.0	5.0	0.5	90.48%
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.	4.0	5.0	0.5	80.95%
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.	5.0	5.0	0.5	90.48%
Quantity, Structure, and development of courses					
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to	4.0	5.0	0.5	80.95%

Table 4.8 (Continued)

(n = 21)

Items	Utilization of educational resources	Md	Mo	IOR	Consensus
	ensure the coverage of all subjects and knowledge points.				
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.	5.0	5.0	0.5	90.48%
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students.	4.0	5.0	0.5	80.95%
Teachers' Digital LiteracyTeachers' Digital Literacy.					
16.	Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction.	3.0	4.0	1.0	42.86%
17.	Establish digital technology communities or networks where teachers can share experiences, resources, and teaching strategies. Through collaborative learning, teachers can inspire each other, solve problems together, and learn from each other's best.	3.0	4.0	1.0	47.62%

Table 4.8 (Continued)

(n = 21)

Items	Utilization of educational resources	Md	Mo	IOR	Consensus
18.	Provide specialized training courses and workshops focusing on digital technology to help teachers acquire skills in using digital tools and resources, understand the latest educational technology trends and best practices. Training should be ongoing to ensure that teachers can keep pace with technological developments and continually enhance their digital literacy levels.	3.0	4.0	1.0	42.86%

According to Table 4.8, in the second round of meetings, consensus was reached on over 83.3% of the 6 effective strategies for utilizing educational resources. Considering the results of this study, The levels from highest to lowest are as follows: The highest such as Strategy 8: Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning (Md=5.0, Mo=5.0, IQR=0.5) and Strategy 10: Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students (Md=5.0, Mo=5.0, IQR=0.5). The lowest such as Strategy 16: Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction (Md=3.0, Mo=4.0, IQR=1.0).

Table 4.9 Survey Results Round 2: Teaching reform

Items	Teaching reform	Md	Mo	IOR	Consensus
Reform for cultivating excellent innovative talents					
1.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.	4.0	5.0	0.5	80.95%
2.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.	5.0	5.0	0.5	90.48%
3.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.	4.0	5.0	0.5	80.95%
Reform of Professional talent cultivation model.					
4.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.	5.0	5.0	0.5	90.48%
5.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the	5.0	5.0	0.0	95.24%

Table 4.9 (Continued)

Items	Teaching reform	Md	Mo	IOR	Consensus
	industry, and improve the competitiveness of employment.				
6.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.	5.0	5.0	0.5	90.48%
Reform to enhance teachers' comprehensive abilities.					
7.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.	5.0	5.0	0.5	90.48%
8.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.	5.0	5.0	0.0	95.24%
9.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.	4.0	5.0	0.5	80.95%
Development and implementation of teaching outlines for humanities subjects.					
10.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of	4.0	4.0	0	85.71%

Table 4.9 (Continued)

Items	Teaching reform	Md	Mo	IOR	Consensus
	The Times and the frontier of the discipline.				
11.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.	5.0	5.0	0.5	85.71%
12.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.	4.0	4.0	0	85.71%
Recognition of practical teaching.					
13.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.	5.0	5.0	0.5	85.71%
14.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.	5.0	5.0	0.0	95.24%
15.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong	5.0	5.0	0.0	85.71%

Table 4.9 (Continued)

Items	Teaching reform	Md	Mo	IOR	Consensus
	support for their future employment or continued study.				
School management reform					
16.	Establish and improve school information management systems, including student information management, teacher information management, course management, exam result management, to achieve digitization and networking of educational management.	3.0	4.0	1.0	42.86%
17.	Introduce intelligent management tools and platforms such as smart campus management systems, online examination systems, learning management systems, to enhance management efficiency and service quality.	3.0	4.0	1.0	42.86%
18.	Build an online teaching platform that supports remote teaching, online teaching resource management, and learning management, providing teachers and students with a convenient online learning environment.	3.0	4.0	1.0	42.86%

According to Table 4.9, in the second round of research, consensus was reached by over 83.3% of the 21 experts on the 6 effective strategies for Teaching reform. The levels from highest to lowest are as follows: The highest such as Strategy 5: Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the

industry, and improve the competitiveness of employment. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 8: Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 18: Build an online teaching platform that supports remote providing ,and learning management ,esource managementonline teaching r ,teaching .teachers and students with a convenient online learning environment(Md=3.0, Mo=4.0, IQR=1.0).

Table 4.10 Survey Results Round 2: Classroom teaching

Items	Classroom teaching	Md	Mo	IOR	Consensus
Extent of extracurricular learning expansion.					
1.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.	5.0	5.0	0.0	95.24%
2.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.	5.0	5.0	0.0	85.71%
3.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.	5.0	5.0	0.0	85.71%
The extent of the teaching strategies.					
4.	Utilize digital technology to facilitate interdisciplinary integration, breaking down barriers between subjects, and	3.0	4.0	1.0	47.62%

Table 4.10 (Continued)

Items	Classroom teaching	Md	Mo	IOR	Consensus
	engaging in interdisciplinary projects and collaborations to provide richer learning experiences and broaden knowledge perspectives.				
5.	Explore innovative teaching models and instructional environment designs, such as flipped classrooms, blended learning, smart classrooms, to enhance teaching effectiveness and student engagement.	3.0	4.0	1.0	42.86%
6.	Utilize digital technology to promote collaborative teaching among teachers and interdisciplinary integration, breaking down the boundaries between subjects, creating interdisciplinary learning environments, and enhancing students' comprehensive literacy and innovation capabilities.	3.0	4.0	1.0	42.86%
Degree of learning diversity.					
7.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.	5.0	5.0	0.0	95.24%
8.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.	5.0	5.0	0.0	95.24%

Table 4.10 (Continued)

Items	Classroom teaching	Md	Mo	IOR	Consensus
9.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.	5.0	5.0	0.0	85.71%
Extent of use of online network learning.					
10.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time.	5.0	5.0	0.5	90.48%
11.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.	5.0	5.0	0.0	95.24%
12.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.	5.0	5.0	0.0	85.71%
Teachers' teaching ability in the classroom.					
13.	Offer specialized training courses to help teachers learn how to effectively integrate digital technology into classroom teaching, including the use of interactive whiteboards, teaching software, online learning platforms, and other	3.0	4.0	1.0	47.62%

Table 4.10 (Continued)

Items	Classroom teaching	Md	Mo	IOR	Consensus
	tools, to enhance teaching effectiveness and student engagement.				
14.	Encourage teachers to experiment with innovative teaching methods and strategies, such as leveraging virtual labs, online collaboration tools, gamification of learning, to enhance students' learning interest and engagement.	3.0	4.0	1.0	47.62%
15.	Provide timely technical support and services to ensure that teachers can smoothly resolve technical issues and difficulties when using digital technology for teaching.	3.0	4.0	1.0	42.86%
Content of the course design.					
16.	Enhance the interactivity of the curriculum using digital technology, such as utilizing online discussion forums, virtual experiments, interactive courseware, to stimulate students' learning interest and engagement.	3.0	4.0	1.0	42.86%
17.	Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate.	3.0	4.0	1.0	42.86%

Table 4.10 (Continued)

Items	Classroom teaching	Md	Mo	IOR	Consensus
18.	Design personalized learning paths and instructional activities based on students' learning levels, interests, and needs, leveraging intelligent technology to provide customized learning experiences.	3.0	4.0	1.0	47.62%

According to Table 4.10, in the second round of research, consensus was reached by over 50% of the 21 experts on the 6 effective strategies for Classroom teaching. The levels from highest to lowest are as follows: The highest such as Strategy 1: Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 7:Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 17: Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate. (Md=3.0, Mo=4.0, IQR=1.0).

Table 4.11 Survey Results Round 2: Student development

Items	Student development	Md	Mo	IOR	Consensus
Interactive learning.					
1.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.	5.0	5.0	0.0	95.24%
2.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.	5.0	5.0	0.0	85.71%
3.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.	5.0	5.0	0.0	85.71%
Guidance and services for students					
4.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.	4.0	5.0	0.5	80.95%
5.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.	5.0	5.0	0.5	90.48%

Table 4.11 (Continued)

Items	Student development	Md	Mo	IOR	Consensus
6.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.	5.0	5.0	0.0	95.24%
Students' learning level and attitude.					
7.	Utilize digital teaching resources and multimedia technology to design engaging and interactive instructional content, such as animations, videos, games, to stimulate students' learning interests and enhance their motivation to learn.	3.0	4.0	1.0	42.86%
8.	Integrate content and activities related to the cultivation of digital literacy into the curriculum, helping students master basic operations and application skills of digital technology, enhancing their information literacy and fostering innovation awareness.	3.0	4.0	1.0	47.62%
9.	Through project-based learning, practical tasks, and case studies, students are encouraged to apply their acquired knowledge to solve real-world problems, fostering their problem-solving abilities and innovative thinking.	3.0	4.0	1.0	42.86%

Table 4.11 (Continued)

Items	Student development	Md	Mo	IOR	Consensus
Study style and learning efft.					
10.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.	4.0	5.0	0.5	80.95%
11.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.	5.0	5.0	0.5	90.48%
12.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.	4.0	5.0	0.5	80.95%
Learning motivation and self-study ability.					
13.	Help students set clear, challenging, and measurable learning goals to stimulate their learning motivation and goal orientation.	4.0	4.0	0.5	66.67%
14.	Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative.	3.0	4.0	1.0	33.33%

Table 4.11 (Continued)

Items	Student development	Md	Mo	IOR	Consensus
15.	Utilize diverse learning resources and activities, including virtual experiments, gamified learning, multimedia courseware, to stimulate students' curiosity and desire for exploration, thereby enhancing their learning motivation.	3.0	4.0	1.0	42.86%
The evaluation mechanism of the learning effect.					
16.	Utilize learning analytics and big data technology to assess students based on their learning data and behavior patterns, identifying learning issues and potential needs, and providing targeted support and recommendations.	3.0	4.0	1.0	42.86%
17.	Pay attention not only to students' learning outcomes but also to their learning processes and thinking processes. Evaluate their learning depth and understanding ability by observing their learning behaviors and thought processes.	3.0	4.0	1.0	42.86%
18.	Utilize digital tools and online learning platforms to design diverse assessment tools, including online quizzes, assignment submissions, project presentations, online discussions, to comprehensively evaluate students' learning performance.	4.0	4.0	0.5	66.67%

According to Table 4.11, in the second round of research, consensus was reached by over 50% of the 21 experts on the 6 effective strategies for Student development. The levels from highest to lowest are as follows: The highest such as Strategy 1: Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 6:Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 14: Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative. (Md=3.0, Mo=4.0, IQR=1.0).

Table 4.12 Survey Results Round 2: Quality assurance

Items	Quality assurance	Md	Mo	IOR	Consensus
Quality assurance system for teaching.					
1.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.	5.0	5.0	0.0	95.24%
2.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.	5.0	5.0	0.0	95.24%

Table 4.12 (Continued)

Items	Quality assurance	Md	Mo	IOR	Consensus
3.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.	4.0	5.0	0.5	80.95%
Teaching management and supervision mechanism.					
4.	Establish teaching quality standards and indicators system, specifying teaching objectives, evaluation criteria, and performance indicators, for the purpose of assessing and supervising teaching effectiveness.	3.0	4.0	1.0	42.86%
5.	Regularly invite education experts or external review committees to evaluate and review teaching , providing objective third-party assessments to promote the improvement of teaching quality.	3.0	4.0	1.0	33.33%
6.	Establish a mechanism for teachers' self-reflection and improvement, encouraging teachers to regularly reflect on and summarize their own teaching practices, continuously improving teaching methods and strategies.	3.0	4.0	1.0	42.86%
Utilization of quality information in teaching.					
7.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.	5.0	5.0	0.0	95.24%

Table 4.12 (Continued)

Items	Quality assurance	Md	Mo	IOR	Consensus
8.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.	5.0	5.0	0.0	95.24%
9.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.	4.0	5.0	0.5	80.95%
Technology research and development and innovative application.					
10.	Create an organizational culture and atmosphere that supports innovation, encouraging employees to propose new ideas, experiment with new technologies, and allowing room for the possibility of failure, thus fostering the continuous emergence of technological research and innovative applications.	3.0	4.0	1.0	42.86%
11.	Allocate funds and resources to support technology research and innovative application projects, establish dedicated technology innovation funds or incubators, and encourage entrepreneurs and research teams to engage in technological innovation and commercialization applications.	4.0	4.0	0.5	66.67%

Table 4.12 (Continued)

Items	Quality assurance	Md	Mo	IOR	Consensus
12.	Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological research and innovation achievements, and encourage enterprises and individuals to invest in innovation.	3.0	4.0	1.0	33.33%
Construction of evaluation index systems.					
13.	The performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.	5.0	5.0	0.0	95.24%
14.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.	4.0	5.0	0.5	80.95%
15.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed	5.0	5.0	0.0	95.24%
Learn about culture and teaching ideas.					
16.	Advocate the concept of digital education, enrich teaching resources and provide personalized learning	3.0	4.0	1.0	42.86%

Table 4.12 (Continued)

Items	Quality assurance	Md	Mo	IOR	Consensus
	experience with the help of digital technology, and promote the innovation of teaching methods and teaching content.				
17.	Advocate sharing and open educational resources, promote open educational resource platform, make learning resources more universal and convenient access, and promote the popularization and development of learning culture.	3.0	4.0	1.0	42.86%
18.	Establish learning communities and networks, provide a platform for learning exchange and resource sharing, let students and teachers interact and cooperate, and promote the construction and sharing of learning culture.	4.0	4.0	0.5	66.67%

According to Table 4.12, in the second round of research, consensus was reached by over 50% of the 21 experts on the 6 effective strategies for Quality assurance. The levels from highest to lowest are as follows: The highest such as Strategy 8: According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 13:The performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 12: Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological

research and innovation achievements, and encourage enterprises and individuals to invest in innovation. (Md=3.0, Mo=4.0, IQR=1.0).

Based on the statistical analysis of expert opinions from the previous round, revise the questionnaire for the third round of research.

The results of the round-3 survey are as follows:

Table 4.13 Survey Results Round 3: Utilization of educational resources

Items	Utilization of educational resources	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Impact of digital technology on teaching.							
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.	4.74	5.0	5.0	0.5	90.48%	1
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.	4.70	5.0	5.0	0.0	95.24%	3
Impact of digital technology on teaching.							
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.	4.74	5.0	5.0	0.5	90.48%	1

Table 4.13 (Continued)

Items	Utilization of educational resources	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.	4.70	5.0	5.0	0.0	95.24%	3
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.	4.73	5.0	5.0	0.5	90.48%	2
	Total			**4.72**			
Digital literacy of students.							
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.	4.63	5.0	5.0	0.5	90.48%	4
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.	4.49	5.0	5.0	0.0	90.48%	5
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such	4.46	5.0	5.0	0.5	90.48%	7

Table 4.13 (Continued)

Items	Utilization of educational resources	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
	as digital painting works, animation, to show their creative achievements.						
	Total				**4.52**		
Utilization of digital technology in classroom resources.							
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.	4.47	5.0	5.0	0.0	95.24%	6
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.	4.18	5.0	5.0	0.0	95.24%	10
9.	Encourage students to actively participate in the use of digital technology resources.	4.42	5.0	5.0	0.5	90.48%	8
	Total				**4.35**		
Curriculum resources.							
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.	4.16	5.0	5.0	0.5	90.48%	11
11.	Teachers can guide students on how to use curriculum resources	4.31	5.0	5.0	0.0	95.24%	9

Table 4.13 (Continued)

Items	Utilization of educational resources	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
	effectively, provide guidance and advice on use to help them better learn and apply knowledge.						
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.	4.12	5.0	5.0	0.0	90.48%	14
	Total				**4.19**		
Quantity, Structure, and development of courses.							
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.	4.10	5.0	5.0	0.5	90.48%	15
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.	4.15	5.0	5.0	0.0	90.48%	12
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning	4.13	5.0	5.0	0.0	95.24%	13

Table 4.13 (Continued)

Items	Utilization of educational resources	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
	resources for teachers and students						
	Total				**4.12**		

According to Table 4.13, in the second round of research, consensus was reached by over 100% of the 21 experts on the 5 effective strategies for Utilization of educational resources. The levels from highest to lowest are as follows: The highest such as Strategy 2: Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 7: Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 3: Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect. (Md=5.0, Mo=5.0, IQR=0.5).

According to Table 4.13, the results of relevant factors in the Utilization of educational resources from highest to lowest level are as follows: the highest level is Impact of digital technology on teaching ($\overline{X}$=4.72), followed by Digital literacy of students ($\overline{X}$=4.52), Utilization of digital technology in classroom resources ($\overline{X}$=4.35), Curriculum resources ($\overline{X}$=4.19), and Quantity, Structure, and development of courses being the lowest level ($\overline{X}$=4.12).

Table 4.14 Survey Results Round 3: Teaching reform

Items	Teaching reform	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Reform for cultivating excellent innovative talents.							
1.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.	4.85	5.0	5.0	0.0	95.24%	1
2.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.	4.83	5.0	5.0	0.0	95.24%	2
3.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.	4.80	5.0	5.0	0.0	90.48%	4
	Total					**4.82**	
Reform of Professional talent cultivation model.							
4.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.	4.42	5.0	5.0	0.5	90.48%	10

Table 4.14 (Continued)

Items	Teaching reform	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
5.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.	4.49	5.0	5.0	0.5	90.48%	7
6.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.	4.64	5.0	5.0	0.0	80.95%	5
	Total					**4.51**	
Reform to enhance teachers' comprehensive abilities							
7.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.	4.45	5.0	5.0	0.5	90.48%	9
8.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.	4.48	5.0	5.0	0.0	90.48%	8

Table 4.14 (Continued)

Items	Teaching reform	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
9.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.	4.81	5.0	5.0	0.0	95.24%	3
	Total					**4.58**	
Development and implementation of teaching outlines for humanities subjects.							
10.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.	4.50	5.0	5.0	0.5	90.48%	6
11.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.	4.37	5.0	5.0	0.5	90.48%	14
12.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.	4.41	5.0	5.0	0.0	90.48%	11
	Total					**4.43**	

Table 4.14 (Continued)

Items	Teaching reform	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Recognition of practical teaching.							
13.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.	4.35	5.0	5.0	0.0	95.24%	15
14.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.	4.40	5.0	5.0	0.0	95.24%	12
15.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.	4.38	5.0	5.0	0.5	90.48%	13
Total					**4.38**		

According to Table 4.14, in the third round of meetings, consensus was reached by over 100% of the 21 experts on the 5 effective strategies for Teaching reform. The highest such as Strategy 13: Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition. (Md=5.0, Mo=5.0, IQR=0.0) and Strategy 14:Practical teaching reward system should

be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities. (Md=5.0, Mo=5.0, IQR=0.0). The lowest such as Strategy 6: Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability. (Md=5.0, Mo=5.0, IQR=0.0).

According to Table 4.14, the results of relevant factors in Teaching reform from highest to lowest level are as follows: the highest level is Reform for cultivating excellent innovative talents ($\overline{X}$=4.82), followed by Reform to enhance teachers' comprehensive abilities ($\overline{X}$=4.58), Reform of Professional talent cultivation model ($\overline{X}$=4.51), Development and implementation of teaching outlines for humanities subjects ($\overline{X}$=4.43), and Recognition of practical teaching being the lowest level ($\overline{X}$=4.38).

Table 4.15 Survey Results Round 3: Classroom teaching

Items	Classroom teaching	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Extent of extracurricular learning expansion.							
1.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.	4.49	4.0	5.0	0.5	80.95%	6
2.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.	4.54	5.0	5.0	0.0	95.24%	4

Table 4.15 (Continued)

Items	Classroom teaching	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
3.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.	4.62	5.0	5.0	0.0	90.48%	3
	Total				**4.55**		
Degree of learning diversity.							
4.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.	4.95	5.0	5.0	0.0	80.95%	1
5.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.	4.48	5.0	5.0	0.0	90.48%	7
6.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.	4.34	4.0	5.0	0.5	80.95%	8
	Total				**4.43**		
Extent of use of online network learning.							
7.	Schools can set up an online	4.49	5.0	5.0	0.0	90.48%	5

Table 4.15 (Continued)

Items	Classroom teaching	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
	learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.						
8.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.	4.14	4.0	5.0	0.5	80.95%	9
9.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.	4.93	5.0	5.0	0.5	90.48%	2
	Total					**4.52**	

According to Table 4.15, in the third round of meetings, consensus was reached by over 100% of the 21 experts on the 3 effective strategies for Classroom teaching. The strategies are as follows: Strategy 2: Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility. (Md=5.0, Mo=5.0, IQR=0.0); The lowest such as Strategy 8: Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students. (Md=4.0, Mo=5.0, IQR=0.5).

According to Table 4.15, the results of relevant factors in Classroom teaching from highest to lowest level are as follows: the highest level is Extent of

extracurricular learning expansion ($\overline{X}$=4.55), followed by Extent of use of online network learning ($\overline{X}$=4.52), and Degree of learning diversity being the lowest level ($\overline{X}$=4.43).

Table 4.16 Survey Results Round 3: Student development

(n = 21)

Items	Student development	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Interactive learning.							
1.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.	4.83	5.0	5.0	0.0	95.24%	1
2.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.	4.63	4.0	5.0	0.5	80.95%	2
3.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.	4.36	5.0	5.0	0.0	95.24%	7
	Total				**4.60**		
Guidance and services for students.							
4.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.	4.53	5.0	5.0	0.0	80.95%	4

Table 4.16 (Continued)

Items	Student development	$\bar{X}$	Md	Mo	IOR	Consensus	Rank
5.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.	4.36	5.0	5.0	0.5	90.48%	8
6.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.	4.59	5.0	5.0	0.5	90.48%	3
Total		**4.49**					
Study style and learning effect.							
7.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.	4.53	5.0	5.0	0.0	90.48%	5
8.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.	4.19	4.0	5.0	0.5	80.95%	9

Table 4.16 (Continued)

Items	Student development	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
9.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.	4.46	5.0	5.0	0.0	80.95%	6
	Total				**4.39**		

According to Table 4.16, in the third round of meetings, consensus was reached by over 100% of the 21 experts on the 3 effective strategies for Student development. The strategies are as follows: Strategy 3: Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills. (Md=5.0, Mo=5.0, IQR=0.0); The lowest such as Strategy 9: Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest. (Md=5.0, Mo=5.0, IQR=0.5).

According to Table 4.16, the results of relevant factors in Student development from highest to lowest level are as follows: the highest level is Interactive learning ($\overline{X}$=4.60), followed by Guidance and services for students ($\overline{X}$=4.59), and Study style and learning effect being the lowest level ($\overline{X}$=4.39).

Table 4.17 Survey Results Round 3: Quality assurance

Items	Quality assurance	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
Quality assurance system for teaching.							
1.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.	4.98	5.0	5.0	0.0	80.95%	1
2.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.	4.82	5.0	5.0	0.0	95.24%	2
3.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.	4.35	5.0	5.0	0.0	95.24%	6
Total					**4.71**		
Utilization of quality information in teaching.							
4.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.	4.81	4.0	5.0	0.5	80.95%	3

Table 4.17 (Continued)

Items	Quality assurance	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
5.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.	4.47	5.0	5.0	0.0	90.48%	5
6.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.	4.25	4.0	5.0	0.5	80.95%	9
Construction of evaluation index systems.							
7.	The performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.	4.35	5.0	5.0	0.0	90.48%	6
8.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.	4.33	5.0	5.0	0.0	80.95%	7

Table 4.17 (Continued)

Items	Quality assurance	$\overline{X}$	Md	Mo	IOR	Consensus	Rank
9.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.	4.32	5.0	5.0	0.0	80.95%	8
	Total				**4.33**		

According to Table 4.17, in the third round of the meeting, 21 experts reached a consensus of 100% or more on the three effective strategies for Quality assurance. The strategies are as follows: Strategy 3:Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect. (Md=5.0, Mo=5.0, IQR=0.0); The lowest such as Strategy 9: In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed. (Md=5.0, Mo=5.0, IQR=0.5).

According to Table 4.17, the results of relevant factors in Quality assurance from highest to lowest level are as follows: the highest level is Quality assurance system for teaching ($\overline{X}$=4.71), followed by Utilization of quality information in teaching ($\overline{X}$=4.51), and Construction of evaluation index systems being the lowest level ($\overline{X}$=4.33).

According to After adjustments, the questionnaire results of the third round fall within the acceptable range for MD and IQR. It can be seen that experts generally agree that the framework of the painting design teaching mode supported by digital technology covers five dimensions: Utilization of educational resources, Teaching reform, classroom teaching, student development, and quality assurance.

Utilization of educational resources includes: Impact of Digital technology on teaching, Digital literacy of students, Course Resources, Quantity, Structure, and development of courses, Utilization of digital technology in classroom resources.

Teaching reform includes: Reform for cultivating excellent innovative talents, Reform of Professional talent cultivation model, Reform of practical innovation ability and teachers' comprehensive ability, Development and implementation of teaching outlines for humanities subjects, Recognition of practical teaching,

Classroom Teaching includes: Extent of extracurricular learning expansion, Degree of learning diversity, Extent of use of online network learning.

Student Development includes: Interactive learning, Student guidance and service, Study style and learning effect.

Quality Assurance includes: Teaching quality assurance system, Quality information utilization of development teaching, Construction of evaluation index systems.

Eventuate the framework of the painting design teaching mode supported by digital technology has been constructed (Figure 4.1).

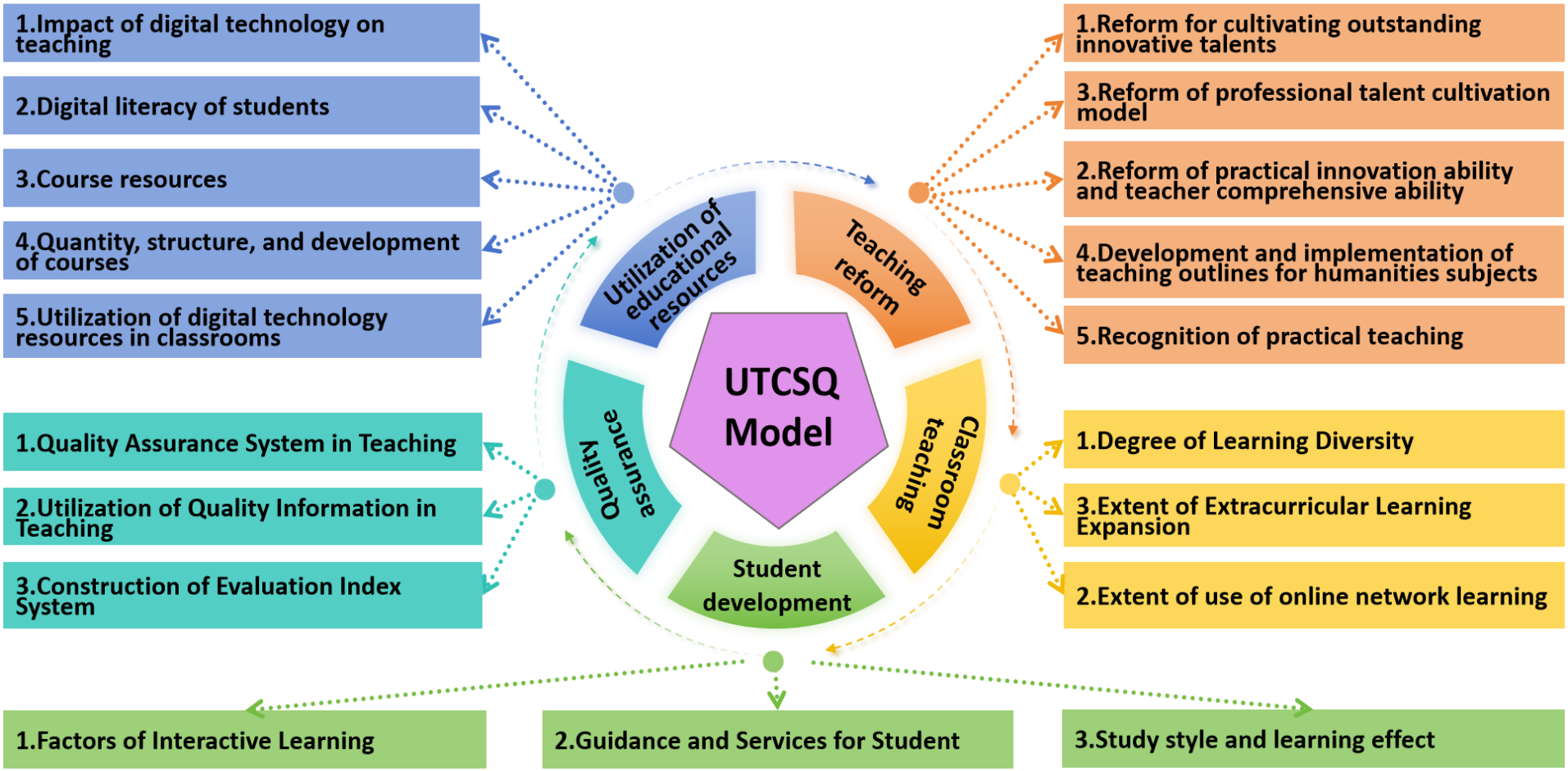


Figure 4.1 Digital technology supports painting design and teaching model framework

indicator selection, researchers made revisions, mergers, and additions to the factors influencing the indicators of the digital technology-supported painting design teaching model. Ultimately, the digital technology-supported painting design teaching model was determined. Compared with the initially selected indicators, there are a total of 5 primary indicators that remained unchanged. Based on their importance level, they are: Utilization of educational resources; Teaching reform; Classroom teaching; Student development; Quality assurance. There are 19 secondary indicators in total, with 7 deleted and 4 merged. Based on their importance level, they include: Impact of Digital technology on teaching; Digital literacy of students; Course Resources; Quantity, Structure, and development of courses; Utilization of digital technology in classroom resources; Reform for cultivating excellent innovative talents; Reform of Professional talent cultivation model; Reform to enhance teachers' comprehensive abilities ; Development and implementation of teaching outlines for humanities subjects ; Recognition of practical teaching ; Degree of learning diversity ; Extent of extracurricular learning expansion ; Extent use online network learning ; Factors interactive learning ; Guidance services students Study style learning effect Quality assurance system for teaching Utilization quality information in teaching Construction evaluation index systems This ultimately formed digital technology-supported painting design teaching model (Figure 4.1).

The guidelines of develop an effective digital technology supported model on painting design teaching:1)Integrate digital technology into the teaching design and teaching process to improve the teaching efficiency and quality. Digital technology is used to realize personalized teaching, and differentiated teaching is conducted according to students' characteristics and needs. Digital literacy will be incorporated into the school education and teaching system to promote students' all-round development. Through practical operation and application, to help students to master the basic operation and application skills of digital technology.

Establish a special training mechanism to provide personalized training plans and support services for outstanding and innovative talents, paying attention to cultivating students' innovative thinking and practical abilities, stimulating their innovative potential, and promoting the growth and development of innovative talents. Provide a diverse learning environment and resources, encouraging students to study and practice interdisciplinary subjects while cultivating their comprehensive

abilities and innovative consciousness. Focus on developing students' professional knowledge and skills, improving their professional quality and practical abilities so that they can adapt to social needs effectively. Strengthen practical education by providing opportunities such as internships and practical training, enabling students to enhance their professional skills as well as problem-solving abilities through hands-on experience.

Encourage students to study interdisciplinary, broaden their professional horizons, cultivate comprehensive ability and innovative consciousness, and meet the development needs of a diversified society. Encourage students to participate in practical projects and innovative activities, cultivate their practical ability and creativity, and promote the improvement of practical innovation ability. Improve teachers' teaching ability and professional quality, strengthen their practical experience and scientific research ability, and improve their comprehensive teaching level and ability. Actively promote the teaching reform, explore innovative teaching methods and modes, improve the teaching effect and students 'learning experience, and promote the improvement of practical innovation ability and teachers' comprehensive ability. Practical teaching is regarded as an important part of school teaching, and the importance of the practical ability cultivation and practical operation is emphasized. Promote the cooperation between different disciplines, promote the diversification of practical projects and the integration of interdisciplinary disciplines, and improve students' comprehensive ability and innovative thinking.

Provide students with professional mentor guidance, help them master skills and knowledge in practice, and guide them to independent thinking and innovative practice. Students are encouraged to participate in diversified extracurricular learning activities, including social practice, volunteer service, subject competitions, to expand students' vision and ability. Promote cooperative learning and interactive communication among students, cultivate teamwork ability and communication skills, and improve the learning effect and results. Students are encouraged to learn through inquiry and discussion, stimulate their interest and initiative in learning, and cultivate their critical thinking and problem-solving ability. Understand students' learning style and preferences, and make personalized learning plans and guidance

programs according to the characteristics of different students. Advocate diversified learning methods, including reading, listening,

practice and other learning methods, to meet the learning needs and habits of different students. Teach students effective learning strategies and methods, help them improve their learning efficiency and quality, and develop their self-directed learning and problem-solving skills. Collect and feedback the teaching quality information in time, analyze and solve the problems and challenges arising in the teaching process, and adjust the teaching strategies and methods in time. Clear evaluation and evaluation indicators of teaching design ability of painting art teachers, including but not limited to teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.

Establish scientific and reasonable evaluation standards to ensure that the evaluation indicators are objective, accurate and operable, and facilitate the evaluation and improvement of teachers' teaching design ability. Use digital technology to innovate teaching methods. Guide students to conduct innovative practice in the field of digital technology. Teachers are encouraged to make full use of digital technology resources, such as multimedia teaching, online teaching platform. According to the students' learning situation, digital technology classroom resources are designed to meet the learning needs of different students. cultivate students' independent learning ability and stimulate their learning interest and motivation.

Teachers are encouraged to use diversified curriculum resources, such as textbooks, multimedia materials, practice cases, etc. Teachers should integrate various curriculum resources to form a systematic teaching content. Curriculum resources should pay attention to practice and application, help students to transform theoretical knowledge into practical ability. Depending on students' learning needs and educational objectives. Optimize the course structure, reasonably arrange the course content and credit hours allocation. Actively develop and introduce high-quality course resources. In the formulation of the humanities syllabus, we should base on humanistic care, pay attention to students 'humanistic quality .Strengthen the integration of disciplines, incorporate the connection and interaction between different disciplines into the syllabus.

Emphasize the practical and applied content of the humanities syllabus, so that students can apply knowledge to real life in the process of learning. Support students in self-learning and self-improvement, encourage them to participate in personalized learning programs and extracurricular extension courses. Pay attention to the cultivation of students 'comprehensive quality in extracurricular learning, including the improvement of cultural literacy, sports literacy. Students are encouraged to choose suitable learning methods and subjects. Promote cross-learning and interdisciplinary inquiry between disciplines. students can improve the effectiveness and practicability of learning through practical activities and project learning. Students are encouraged to use online learning platform to learn.

Establish an interactive online learning environment to promote communication and cultivate students' information literacy abilities, teaching them network search and information screening skills. Encourage students to contribute novel ideas and engage in interactive learning to stimulate critical thinking. Provide personalized guidance and services based on their individual needs and characteristics, including comprehensive student support such as learning counseling, career planning, and mental health assistance. Implement a robust tutorial system with professional tutor guidance. Establish a sound evaluation mechanism and feedback system to assess the teaching process and outcomes.

Attach importance to curriculum construction and teaching content update. establish a sound quality assurance system, to ensure the stability and continuous improvement of teaching quality. to provide support and guidance for developmental teaching. With the help of data analysis and evaluation tools, the teaching process and effect are quantitatively analyzed and evaluated. to evaluate teachers' teaching design ability in a comprehensive and multi-angle way. (Figure 4.1)

Part Four: Analysis Results of Focus Group Discussions on Drawing Design Teaching Modes Supported by Digital Technology Through Qualitative Analysis.

Table 4.18 Discussion results of the painting Design Teaching Mode Supported by Digital Technology (level project factors-First)

(n = 9)

Items	Digital Technology Supported Model In Painting Design Teaching (level project factors-First)	$\overline{X}$	Result	Rank
1	Utilization of educational resources	4.38	Pass	5
2	Teaching reform	4.54	Pass	1
3	Classroom teaching	4.50	Pass	2
4	Student development	4.52	Pass	3
5	Quality assurance	4.51	Pass	4

According to table 4.18, The results of relevant factors in Design Teaching Mode Supported by Digital Technology from highest to lowest level are as follows: the highest level is Teaching reform ($\overline{X}$=4.54), followed by Classroom teaching ($\overline{X}$=4.50), Student development ($\overline{X}$=4.52), Quality assurance ($\overline{X}$=4.51), and Utilization of educational resources being the lowest level ($\overline{X}$=4.38). This indicates that the main evaluation indicators of the digital technology-supported model in painting design teaching have relatively high reliability.

Table 4.19 Discussion results of the painting Design Teaching Mode Supported by Digital Technology (Secondary project factors)

(n = 9)

Items	Digital Technology Supported Model In Painting Design Teaching	Result
1	Impact of Digital technology on teaching	Pass
2	Digital literacy of students	Pass
3	Course Resources	Pass
4	Quantity, Structure, and development of courses	Pass
5	Utilization of digital technology in classroom resources	Pass
6	Reform for cultivating excellent innovative talents	Pass
7	Reform of Professional talent cultivation model	Pass
8	Reform to enhance teachers' comprehensive abilities	Pass
9	Development and implementation of teaching outlines for humanities subjects	Pass
10	Recognition of practical teaching	Pass

Table 4.19 (Continued)

Items	Digital Technology Supported Model In Painting Design Teaching	Result
11	Degree of learning diversity	Pass
12	Extent of extracurricular learning expansion	Pass
13	Extent of use of online network learning	Pass
14	Factors of interactive learning	Pass
15	Guidance and services for students	Pass
16	Study style and learning effect	Pass
17	Quality assurance system for teaching	Pass
18	Utilization of quality information in teaching	Pass
19	Construction of evaluation index systems	Pass

From Table 4.19, After discussion on the aforementioned 19 items, the project received unanimous approval from 9 experts. Three experts (33.3% of the experts) suggested distinguishing within the professional scope for all 19 "evaluation index system construction" items, and explicitly stating that the construction of the evaluation index system is conducted within the scope of expression of painting design teaching capabilities. Item 19, "Evaluation index system construction," is modified to "Construction of Expression Evaluation Index System for Painting Design Teaching Abilities."

According to the expert's opinion, the guidelines of the model are revised.

Compared to the third round of impact indicators, there are five key indicators, which remain unchanged. They are: Utilization of educational resources, Teaching reform, Classroom teaching, Student development and Quality assurance.

There are 19 secondary indicators. Utilization of educational resources includes: the impact of digital technology on teaching, digital literacy of students, course resources quantity, structure and development, utilization of digital technology in classroom resources. Teaching reform includes: reform for cultivating excellent innovative talents, reform of the professional talent cultivation model, reform of practical innovation ability and teachers' comprehensive ability, development and implementation of teaching outlines for humanities subjects, recognition of practical teaching. Classroom teaching includes: extent of extracurricular learning expansion, degree of learning diversity, extent of use online

network learning. Student development includes: interactive learning, student guidance and service, study style and learning effect. Quality assurance includes: a teaching quality assurance system, quality information utilization for developing teaching abilities, construction expression evaluation index system for painting design.

Through the study, the digital technology-supported model in painting design teaching was further confirmed and received recognition from the experts. Subsequently, the elements obtained were subjected to model design, model interpretation, and model evaluation. The final modified version yields the Painting Digital technology supported model In painting design teaching (Figure 4.2).

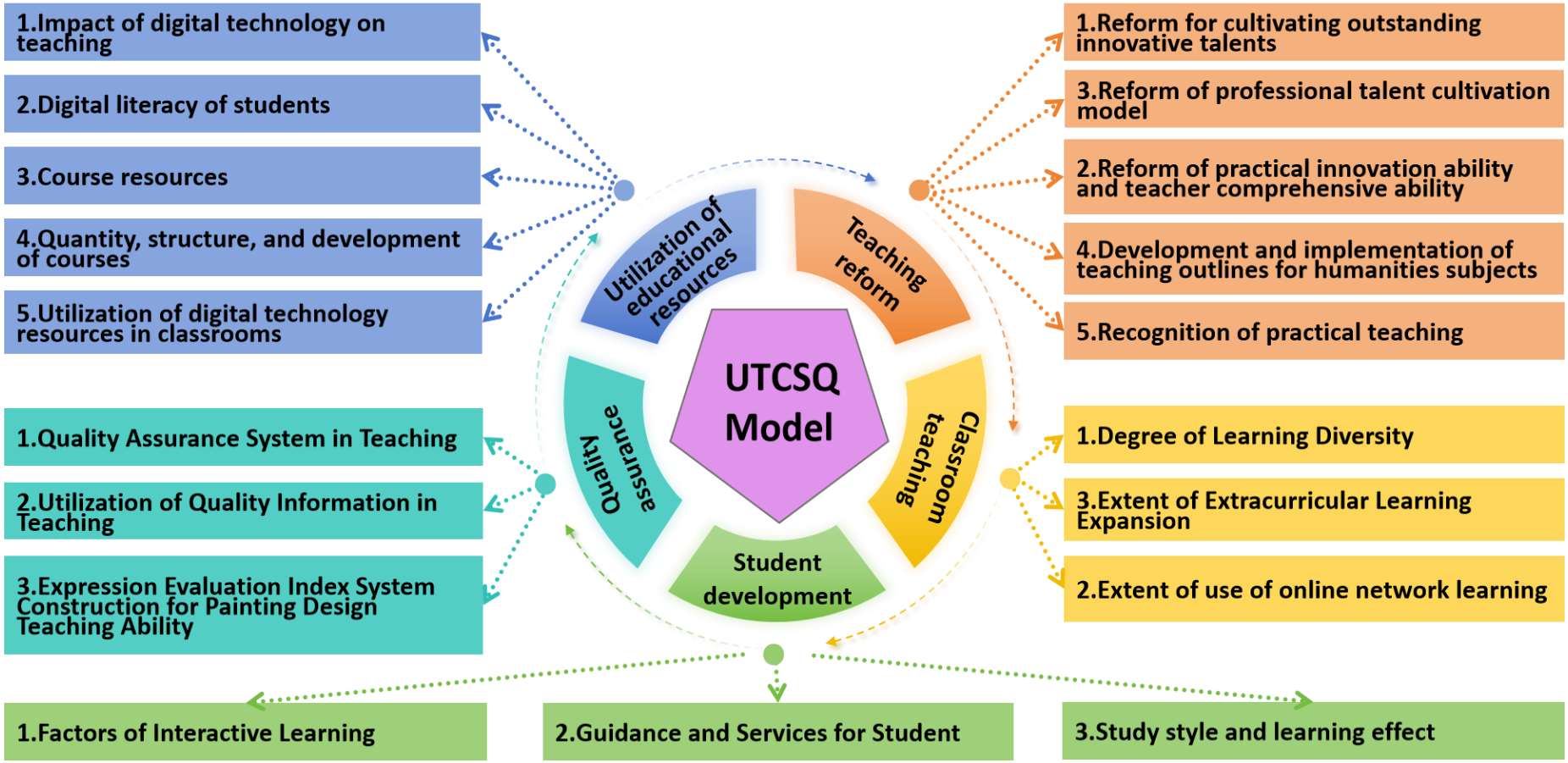


Figure 4.2 Digital technology supported model in painting design teaching framework (Final edition)

Model Description: It is evident that the main indicator factors in Design Teaching Mode Supported by Digital Technology rank from highest to lowest level as follows: Teaching reform, Classroom teaching, Student development, Quality assurance, Utilization of educational resources.

In Teaching reform, the relevant factors rank from highest to lowest level as follows: Reform for cultivating excellent innovative talents, Reform of Professional talent cultivation model, Reform to enhance teachers' comprehensive abilities, Development and implementation of teaching outlines for humanities subjects, Recognition of practical teaching.

In Classroom teaching, the relevant factors rank from highest to lowest level as follows: Extent of extracurricular learning expansion, Degree of learning diversity, Extent of use of online network learning.

In Student development, the relevant factors rank from highest to lowest level as follows: Interactive learning, Guidance and services for students, Study style and learning effect.

In Quality assurance, the relevant factors rank from highest to lowest level as follows: Quality assurance system for teaching, Utilization of quality information in teaching, Construction of Expression Evaluation Index System for Painting Design Teaching Abilities.

In Utilization of educational resources, the relevant factors rank from highest to lowest level as follows: Impact of digital technology on teaching, Digital literacy of students, Utilization of digital technology in classroom resources, Curriculum resources, Quantity, Structure, and development of courses.

Part Five: Descriptive Analysis Results of digital technology supported model in painting design teaching.

Researchers identified five main issues and corresponding strategies for addressing them in the current digital technology-supported painting design teaching through interviews and literature review. These issues are Utilization of educational resources, quality of education research, classroom teaching, student development, and quality assurance. They proposed 30 corresponding strategies, as shown in Tables 4.3 to 4.7.

Through Research Objective 1, a digital technology-supported painting design teaching model was designed. Through three rounds of expert interviews, a model

consisting of 5 main indicator factors and 19 secondary indicator factors was designed, as shown in Figure 4.1.

Based on Research Objective 1 and Research Objective 2, a focus group interview was conducted inviting 9 experts to evaluate the model. The model's 5 main indicator factors and 19 secondary indicator factors were unanimously recognized by the experts. However, three experts suggested that in the 19th secondary indicator factor, "Construction of evaluation index system," it should be differentiated by professional field. They pointed out that the construction of the evaluation index system should be within the scope of expression of painting design and teaching abilities. Following the experts' suggestions, the 19th secondary indicator factor of the model was modified to "Construction of evaluation index system for painting design and teaching abilities." Finally, the digital technology-supported painting design teaching model was obtained.

It is evident that experts generally agree on a framework for the Digital Technology Supported Model in Painting Design Teaching, which comprises five dimensions: Utilization of educational resources, quality of education research, classroom teaching, student development, and quality assurance.

Utilization of educational resources includes: the impact of digital technology on teaching, students' digital literacy, course resources, quantity, structure, and development of courses, and utilization of digital technology in the classroom. Teaching reform includes: reform for cultivating outstanding innovative talents, reform of professional talent training models, reform to enhance teachers' comprehensive abilities, development and implementation of teaching outlines for humanities subjects, and recognition of practical teaching. Classroom teaching includes: degree of learning diversity, extent of extracurricular learning expansion, and extent of use of online network learning. Student development includes: factors of interactive learning, guidance and services for students, and learning styles. Quality assurance includes: quality assurance system for teaching, utilization of quality information in teaching, and construction of expression evaluation index system for painting design teaching abilities.

Chapter 5
Conclusion Discussion and Recommendations

The purpose of the paper is to develop and evaluate effective digital painting design and teaching technical support models. Through the 3 research goals to achieve the research results.

1. To study the impact of problem and resolution in effective painting design teaching.

2. To develop the effective digital technology supported model in painting design teaching.

3. To evaluate the effective digital technology supported model in painting design teaching.

Conclusion

Stage1

Part 1 Results of data analysis of Round One Interview Questions.

There is data analysis of 5 digital technology-supported model links, namely the utilization of teaching resources, teaching reform, classroom teaching, student development, and quality assurance. There is data analysis of 5 digital technology-supported model links, namely the utilization of educational resources, teaching reform, classroom teaching, student development, and quality assurance.

Utilization of educational resources: The impact of digital technology on teaching. .technology painting class,Digital Literacy for Students The utilization degree .of digital technology classroom resources .Curriculum resources Course quantity .course resources quality-structure and the construction of high,

Teaching reform:includes Reform of the training of outstanding and .innovative talents .Reform of the training mode of professional talents Reform of .comprehensive ability 'practical innovation ability and teachers The formulation and .implementation degree of the humanities syllabus .Recognition of practical teaching

:Classroom teaching includes .Extracurricular learning expansion The degree of .diversity in learning .Use of online network learning

:Student development includes .Interactive learning Student guidance and .service .Study style and learning effect

:Quality assurance includes .Teaching quality assurance system The quality .information utilization of development teaching Construction of expressive .teaching design ability 'tem of painting art teachersevaluation index sys

Part 2 Results of data analysis obtained from round two evaluation of elements form research objective.

Results of data analysis of study the elements of digital painting design and .1 Dimension of ,teaching technical support modelsUtilization of educational resources.

The results of data analysis were used to define the the elements of digital dimension of using of ,and teaching technical support models painting design ,found that ,teaching resources ,for the impact of digital technology on teaching Provide teachers with training and guidance on relevant digital technology. Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect It %90 frequency are the highest and recognized by to mportant equipment and infrastructureneeds iprovide teachers with training and guidance on relevant digital technology. Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect. Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning .tioned itof experts men %6 8 and ,is the lowest

For Digital Literacy for Students ,technology painting classStudents are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievementsexperts %90 frequency are the highest and recognized by .It needs important equipment and infrastructure toStudents are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation. to show their creative achievements. ,Then Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software. Organize

students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability .of experts mentioned it %86

The utilization degree of digital technology classroom resources can be improved by teachers fully considering the application of digital technology resources in classroom design, such as utilizing teaching videos, interactive courseware, and other rich teaching content to stimulate students' interest in learning. This approach has been recognized by 90% of experts. It is important for teachers to have necessary equipment and infrastructure for effective utilization of digital technology resources in the classroom. Providing training and guidance on digital technology classroom resources is also crucial for teachers to effectively use these resources for teaching, as mentioned by 86% of experts at an intermediate communication level. Encouraging students to actively participate in the use of digital technology resources, such as allowing them to utilize electronic devices in the classroom, can enhance their learning effectiveness; however, only 70% of experts mentioned this aspect.

For curriculum resources, students are encouraged to participate in the evaluation and feedback of course materials, understand their needs and opinions, and make timely adjustments and improvements to the content and usage mode. This aspect has received the highest recognition from 90% of experts, indicating the importance of having necessary equipment and infrastructure. On the other hand, enriching course resources such as teaching videos, online textbooks, and practical cases to cater to different students' learning needs and interests has been mentioned by only 70% of experts.

quality course -and construction of high ,structure ,To ensure the quantity quality teaching resources from both -it is crucial to actively introduce high ,resources and This can be achieved by establishing a digital .domestic and international sources personalized curriculum resource database that provides abundant learning materials of %90 These measures have been highly recognized by .for teachers and students it requires important equipment and infrastructure to implement ,However .experts .tiatives effectivelyini these

2. Results of data analysis of study the elements of digital technology supported model in painting design teaching, teaching reform.

There is data analysis on the impact of the Reform of training outstanding and the Reform of ,training mode 'the Reform of professional talents ,innovative talents as well as the ,comprehensive ability 'practical innovation ability and teachers Recognition of .formulation and implementation degree of humanities syllabus .udedpractical teaching is also incl

Data analysis of the impact of the Reform on the training of outstanding and innovative talents, the reform on the training mode of professional talents, the reform on practical innovation ability and teachers' comprehensive ability, as well as the formulation and implementation degree of humanities syllabus revealed that for the Reform on the training of outstanding and innovative talents, it is crucial to formulate an innovative talent training plan based on market demand and industry development trends. This plan should clearly define training targets and paths while also emphasizing international exchange and cooperation projects to introduce exceptional foreign talents and educational resources in order to enhance students' international perspective and global competitiveness. This aspect received high recognition from 90% experts. However, it is important to note that carrying out international exchange programs requires significant equipment and infrastructure investment. Additionally, strengthening practical education links by providing more real-life cases and project practices can effectively cultivate students' innovation abilities and practical skills; this aspect was mentioned by 80% of experts.

The highest frequency and recognition by 90% of experts are for the reform of the training mode of professional talents, promoting interdisciplinary education among different majors, cultivating students' comprehensive quality and cross-field ability, and improving their adaptability and innovation ability. It is necessary to have important equipment and infrastructure to promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability. Then, introduce a project-driven teaching mode so that students can learn and apply knowledge through practical project practice, cultivating their practical ability and problem-solving skills. Strengthen cooperation with enterprises and scientific research institutions to carry out teaching practice activities that combine industry, university, and research so that students can better understand the needs and development

trends of the industry while improving employability competitiveness at an intermediate communication level mentioned by 86% of experts.

,comprehensive ability 'For reform of practical innovation ability and teachers Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality ,experts %90 frequency are the highest and recognized by It needs important equipment and infrastructure tocarry out teaching research and innovative practice, and improve the teaching effect and quality ,Then,Provide students with more practical opportunities, such as internship, practical training, scientific research projects, etc. To cultivate their practical ability and innovative consciousnessof experts mentioned %86 and,is intermediate communication level .itTo provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional levelxperts of e %81 and,is the lowest .mentioned it

The formulation and implementation of the humanities syllabus require the participation of experts and scholars in relevant fields to ensure that the content is consistent with the development of the times and the forefront of the discipline. It is necessary to regularly collect students' feedback and suggestions on the humanities syllabus, make timely adjustments and optimizations to improve teaching quality and learning effectiveness. This aspect has received high recognition from 90% of experts, indicating its importance in terms of equipment and infrastructure. Additionally, providing teachers with relevant training and guidance helps them better understand and implement the humanities syllabus, thereby improving their teaching level and effectiveness. However, this aspect has been mentioned by only 86% of experts.

For recognition of practical teaching, Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition frequency are the highest and recognized by 90% experts, It needs important equipment and infrastructure to Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition, provide practical

experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study is the lowest,and 86% of experts mentioned it.

3. Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of classroom teaching.

The results of data analysis on the study of elements in Digital Technology with a specific focus on classroom ,Supported Model in Painting Design Teaching ening hours and providing additional time indicate that extending school op ,teaching and space for extracurricular study would afford students greater opportunities to This finding was highly acknowledged by .independently engage in learning activities note that implementing such measures it is important to ,However .of experts %90 On the other .necessitates significant investment in equipment and infrastructure organizing student participation in social volunteer activities can enhance their ,hand of %86 and ,nevertheless ;ponsibilitypractical skills and foster a sense of social res .experts mentioned it

It is crucial to support students in selecting learning content and methods based on their personal interests and specialties, promoting diversity in learning and enabling personalized learning that enhances both interest and potential. This approach has been recognized as highly effective by 90% of experts. To facilitate this process, it is essential to provide the necessary equipment and infrastructure. Additionally, students should be encouraged to engage in interdisciplinary studies, participate in courses and projects across different disciplines, broaden their horizons, and develop comprehensive abilities. This intermediate level of communication was mentioned by 86% of experts.

For the use of online network learning, teachers can interact with students through the online teaching platform and provide services such as online Q&A, real-time discussions, and other means to promote communication and interaction between teachers and students. This approach has been recognized by 90% of experts as having the highest frequency. It requires important equipment and infrastructure for teachers to interact with students through the online teaching platform and provide services such as online Q&A, real-time discussions, etc. Additionally, schools can establish an online learning platform to offer students

access to resources and courses for studying anytime and anywhere. This level of communication is considered intermediate according to 80% of experts' opinions. Schools can also provide tools for online learning, such as video lectures or quizzes, in order to facilitate better engagement in online learning activities and review sessions. This aspect was mentioned by 81% of experts.

4. Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of using of student development.

The results of data analysis on the elements of a digital technology-supported model in painting design teaching revealed that for interactive learning, the most engaging and challenging activities were designed to actively involve students, resulting in higher frequency and effectiveness of learning. These activities were recognized by 100% of experts. However, it is important to note that providing necessary equipment and infrastructure for such interactive learning experiences, like interactive whiteboards and online discussion platforms, was found to be lacking. This lack hindered communication and interaction between students as mentioned by 86% of experts.

For student guidance and service, each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice frequency are the highest and recognized by 100% experts, It needs important equipment and infrastructure to Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice, A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life. Then, Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance is intermediate communication level, and 90% of experts mentioned it.

5. Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of using of quality assurance.

The results of data analysis on the elements of a digital technology-supported model in painting design teaching revealed that providing continuous

professional development training and support for teachers can improve their teaching level and ability, ensuring an enhancement in teaching quality. Monitoring and evaluating the curriculum setting, teaching content, and methods, as well as making timely adjustments to improve the curriculum, were found to have the highest frequency of recognition by 100% of experts. It is crucial to have necessary equipment and infrastructure for monitoring and evaluating the curriculum setting, teaching content, and methods in order to enhance teaching quality and effectiveness. Establishing a comprehensive teaching evaluation system that includes student evaluation, peer evaluation, and teaching supervision is essential for objective assessment and supervision of teaching quality; this aspect was mentioned by 90% of experts.

To effectively utilize quality information in development teaching, educational technology and information tools should be combined to optimize the teaching process, improve efficiency and quality. The most frequently recognized tools for this purpose are online teaching platforms and virtual laboratories, which require important equipment and infrastructure to establish a Technology Management Process. Based on analysis results, specific improvement plans should be made with clear goals and measures. Regular evaluation and adjustment of the plan is necessary to continuously improve teaching quality. This communication level is intermediate, as mentioned by 86% of experts.

For construction of expressive evaluation index system of painting art teachers' teaching design ability, Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation frequency are the highest and recognized by 90% experts, It needs important equipment and infrastructure to Keep abreast of industry trends and Tracking competitor, Then, Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on is intermediate communication level, and 86% of experts mentioned it.

It is crucial to support students in selecting learning content and methods based on their personal interests and specialties, promoting diversity in learning and enabling personalized learning that enhances both interest and potential. This approach has been recognized as highly effective by 90% of experts. To facilitate this process, it is essential to provide the necessary equipment and infrastructure. Additionally, students should be encouraged to engage in interdisciplinary studies, participate in courses and projects across different disciplines, broaden their horizons, and develop comprehensive abilities. This intermediate level of communication was mentioned by 86% of experts.

For the use of online network learning, teachers can interact with students through the online teaching platform and provide services such as online Q&A, real-time discussions, and other means to promote communication and interaction between teachers and students. This approach has been recognized by 90% of experts as having the highest frequency. It requires important equipment and infrastructure for teachers to interact with students through the online teaching platform and provide services such as online Q&A, real-time discussions, etc. Additionally, schools can establish an online learning platform to offer students access to resources and courses for studying anytime and anywhere. This level of communication is considered intermediate according to 80% of experts' opinions. Schools can also provide tools for online learning, such as video lectures or quizzes, in order to facilitate better engagement in online learning activities and review sessions. This aspect was mentioned by 81% of experts.

4. Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of using of student development.

The results of data analysis on the elements of a digital technology-supported model in painting design teaching revealed that for interactive learning, the most engaging and challenging activities were designed to actively involve students, resulting in higher frequency and effectiveness of learning. These activities were recognized by 100% of experts. However, it is important to note that providing necessary equipment and infrastructure for such interactive learning experiences, like interactive whiteboards and online discussion platforms, was found to be lacking.

This lack hindered communication and interaction between students as mentioned by 86% of experts.

For student guidance and service, each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice frequency are the highest and recognized by 100% experts, It needs important equipment and infrastructure to Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice, A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life. Then, Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance is intermediate communication level, and 90% of experts mentioned it.

For study style and learning effect, provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students frequency are the highest and recognized by 90% experts, It needs important equipment and infrastructure to Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students, Then, Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance is intermediate communication level, and 86% of experts mentioned it. Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest is the lowest, and 81% of experts mentioned it.

5. Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of using of quality assurance.

The results of data analysis on the elements of a digital technology-supported model in painting design teaching revealed that providing continuous professional development training and support for teachers can improve their teaching level and ability, ensuring an enhancement in teaching quality. Monitoring

and evaluating the curriculum setting, teaching content, and methods, as well as making timely adjustments to improve the curriculum, were found to have the highest frequency of recognition by 100% of experts. It is crucial to have necessary equipment and infrastructure for monitoring and evaluating the curriculum setting, teaching content, and methods in order to enhance teaching quality and effectiveness. Establishing a comprehensive teaching evaluation system that includes student evaluation, peer evaluation, and teaching supervision is essential for objective assessment and supervision of teaching quality; this aspect was mentioned by 90% of experts.

To effectively utilize quality information in development teaching, educational technology and information tools should be combined to optimize the teaching process, improve efficiency and quality. The most frequently recognized tools for this purpose are online teaching platforms and virtual laboratories, which require important equipment and infrastructure to establish a Technology Management Process. Based on analysis results, specific improvement plans should be made with clear goals and measures. Regular evaluation and adjustment of the plan is necessary to continuously improve teaching quality. This communication level is intermediate, as mentioned by 86% of experts.

For construction of expressive evaluation index system of painting art teachers' teaching design ability, Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation frequency are the highest and recognized by 90% experts, It needs important equipment and infrastructure to Keep abreast of industry trends and Tracking competitor, Then, Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on is intermediate communication level, and 86% of experts mentioned it.

Part 3 Results of round three evaluation of guidelines form.

Utilization of educational resources

Integrate digital technology into teaching design and the teaching process to enhance teaching efficiency and quality. Utilize digital technology for personalized instruction, tailoring lessons based on students' characteristics and needs. Incorporate digital literacy into the school education system to promote students' holistic development. Through practical application, assist students in acquiring fundamental skills in operating and utilizing digital technology. The median data analysis score is 5.0, with an interquartile range of 0.5, indicating unanimous recognition of these projects by experts. Employ digital technology to innovate teaching methods and approaches that stimulate students' interest and motivation in learning. Guide students towards innovative practices within the realm of digital technology, fostering their problem-solving abilities and innovative spirit.

Teachers are encouraged to fully utilize digital technology resources, such as multimedia teaching and online teaching platforms, to enhance the content of classroom instruction. Personalized digital technology classroom resources should be designed based on students' learning situations and interests in order to meet their individual learning needs. By utilizing digital technology resources, teachers can foster students' independent learning abilities and stimulate their interest and motivation for learning. Furthermore, teachers are encouraged to incorporate diverse curriculum resources, including textbooks, multimedia materials, and practical cases, to enrich the classroom content. Teachers should integrate various curriculum resources to create a systematic teaching content and enhance the coherence and integrity of the curriculum. Curriculum resources should focus on practical application, helping students translate theoretical knowledge into practical skills, thus improving the effectiveness of the curriculum. Depending on students' learning needs and educational objectives, it is important to ensure a reasonable number of courses without compromising quality. The course structure should be optimized by arranging the content and credit hours allocation in a logical manner to maintain cohesion among different courses. Active development and introduction of high-quality course resources are essential for enhancing the quality and level of education, ultimately promoting students' all-round development.

Teaching reform

Establish a special training mechanism to provide personalized training plans and support services for outstanding and innovative talents, paying attention to cultivating students' innovative thinking and practical abilities, stimulating their innovative potential, and promoting the growth and development of innovative talents. Provide a diverse learning environment and resources, encouraging students to study and practice interdisciplinary subjects while cultivating their comprehensive abilities and innovative consciousness. Focus on nurturing students' professional knowledge and skills, improving their professional quality and practical abilities so that they can adapt to social needs effectively. Strengthen practical education by providing opportunities such as internships and practical training so that students can enhance their professional skills and problem-solving abilities through hands-on experience. Encourage interdisciplinary studies among students to broaden their professional horizons, cultivate comprehensive abilities, foster an innovative mindset, thus meeting the developmental requirements of a diversified society.

Encourage students to participate in practical projects and innovative activities, cultivate their practical abilities and creativity, and promote the improvement of their practical innovation abilities. To enhance teachers' teaching ability and professional quality, strengthen their practical experience and scientific research skills, and improve their overall teaching level and capabilities. Actively promote teaching reforms, explore innovative teaching methods and modes, enhance the effectiveness of instruction, improve students' learning experiences, as well as foster the enhancement of both practical innovation abilities and teachers' comprehensive capabilities. Data analysis shows that the median (Mdn) is 4.0 which indicates unanimous recognition of these projects by experts.

In formulating the humanities syllabus, we should be based on humanistic care and pay attention to students' humanistic qualities and emotional education, cultivating their humanistic sentiments and social responsibility. We should strengthen the integration of disciplines by incorporating connections and interactions between different subjects into the syllabus, promoting interdisciplinary learning and comprehensive skill development. Emphasis should be placed on practical and applied content so that students can apply their knowledge to real-life situations during the learning process, thereby enhancing the effectiveness and

practicality of their studies. The minimum (Mdn) is 5.0 with an (IQR) of 0.5. Practical teaching is considered a crucial component of school education as it emphasizes the cultivation of practical abilities and operational skills while promoting collaboration among various disciplines, diversifying practical projects, integrating interdisciplinary subjects, enhancing students' comprehensive abilities as well as innovative thinking skills. Additionally, providing professional mentor guidance enables students to acquire practical knowledge and skills while guiding them towards independent thinking and innovative practices.

Classroom teaching

Students are encouraged to participate in diverse extracurricular learning activities, including social practice, volunteer service, and subject competitions, in order to expand students' vision and abilities. The median (Mdn) for data analysis is the highest at 5.0, with an interquartile range (IQR) of 0.0, indicating unanimous recognition of these projects by experts. Support students in self-learning and self-improvement; encourage them to participate in personalized learning programs and extracurricular extension courses; cultivate their abilities and interests in independent learning. Pay attention to the cultivation of students' comprehensive qualities through extracurricular learning, including improving cultural literacy, sports literacy, artistic accomplishments, and other aspects that promote all-round development. Encourage students to choose suitable learning methods and subjects based on their own interests and abilities to achieve personalized learning goals. Promote interdisciplinary inquiry between disciplines to broaden students' knowledge fields and thinking modes while cultivating comprehensive abilities and innovative thinking. Emphasize the practicality and application of the content learned so that students can enhance the effectiveness and applicability of their learning through practical activities and project-based learning experiences. The lowest median (Mdn) is 4.0 with an interquartile range (IQR) of 0.5.

Student development

Promote cooperative learning and interactive communication among students, cultivate teamwork abilities and communication skills, and improve the learning effect and results. Students are encouraged to learn through inquiry and discussion, stimulating their interest and initiative in learning, as well as cultivating their critical thinking and problem-solving abilities. The data analysis shows that the

median (Mdn) is the highest at 5.00, with an interquartile range (IQR) of 0.00; this indicates that these projects have been unanimously recognized by experts. Students are encouraged to utilize online learning platforms for flexible time and location arrangements to meet personalized learning needs. Establishing an interactive online learning environment will promote student communication and cooperation while enhancing the overall learning experience.

Cultivate students' information literacy abilities, teach them skills such as network searching, information screening, and data analysis to enhance their independent learning capabilities in online education. Encourage students to propose novel ideas and engage in interactive learning to promote critical thinking and foster innovative thinking. Stimulate creativity and innovation by providing personalized guidance and services tailored to their needs and characteristics. Offer comprehensive student support services including academic counseling, career planning, mental health support, etc., ensuring holistic development and healthy growth of students. Establish a robust tutorial system that provides professional tutor guidance to facilitate students' academic and professional advancement. The minimum (Mdn) is 5.0 with an (IQR) of 0.5. Understand the learning styles and preferences of individual students; develop personalized learning plans and guidance programs based on their unique characteristics. Advocate diverse learning methods such as reading, listening, practice exercises, etc., catering to the different learning needs and habits of students. Teach effective learning strategies and techniques that help improve efficiency and quality of study while fostering self-directed learning skills.

Quality assurance

Collect and provide timely feedback on the quality of teaching, analyze and address challenges that arise during the teaching process, and make necessary adjustments to teaching strategies and methods. Develop comprehensive evaluation criteria for assessing painting art teachers' ability in designing effective lessons, including but not limited to goal setting, content design, method selection, and resource utilization. Establish objective, accurate, and practical evaluation standards to facilitate the assessment and improvement of teachers' instructional design skills. The median value for data analysis is 4.0 (the highest possible score), with an interquartile range of 0.0 indicating unanimous recognition by experts. Implement a

robust evaluation mechanism and feedback system to assess both the process and outcomes of teaching, gain insights into teaching quality issues promptly, and continuously enhance overall instructional effectiveness.

Attach importance to curriculum construction and updating teaching content, constantly improving the quality of the curriculum and the level of teaching to meet the needs of students and social development requirements. Strengthen management and supervision of teaching quality, establish a sound quality assurance system to ensure stable and continuous improvement in teaching quality. Actively integrate and utilize various information resources, including student feedback, teaching evaluations, and teaching data, to provide support and guidance for developmental teaching. Utilize data analysis tools and evaluation methods to quantitatively analyze and evaluate the teaching process and its effectiveness, providing a scientific basis for instructional improvement and decision-making. Design effective evaluation tools in the form of questionnaire surveys, observation records, classroom observations etc., allowing comprehensive multi-angle assessment of teachers' instructional design abilities. The minimum value (Mdn) is 5.0 with an interquartile range (IQR) of 0.5.

The second stage:

Results of the focus groups evaluation of guidelines form.

By evaluating the results of the model using the focus interview method, the results of the digital technology-supported design teaching model are as follows: there are five main indicator factors of the model. Discussions were conducted by experts to derive the level of importance of the five factors through the mean data, with the highest level being pedagogical reforms ($\overline{X}$=4.54), followed by classroom teaching ($\overline{X}$=4.50), student development ($\overline{X}$=4.52), quality assurance ($\overline{X}$= 4.51), and the lowest level being the utilization of educational resources ($\overline{X}$= 4.38). The result of the assessment was that the five main indicator factors of the model were passed consistently and the levels of the assessment values were all greater than 4.00, which indicates that the main evaluation indicators of the digital technology support model in the teaching of drawing and design have a high level of reliability.

In the assessment of the 19 sub-indicators of the model, the discussion of the 19 items mentioned above was also unanimously approved by 9 experts. Three of them suggested that a distinction should be made within the specialisation of the

19th item "Construction of the evaluation indicator system", noting that the construction of the evaluation indicator system is carried out within the scope of the expression of the teaching competence in drawing and design. Item 19, "Construction of an evaluation indicator system", should be amended to read "Construction of an evaluation indicator system for the expression of teaching competence in drawing and design".

Compared to the third round of impact indicators, there are five key indicators that remain unchanged: utilization of educational resources, teaching reform, classroom teaching, student development, and quality assurance.

There are 19 secondary indicators. The utilization of educational resources includes: the impact of digital technology on teaching, the digital literacy of students, the quantity, structure and development of course resources, and the utilization of digital technology in classroom resources. The Teaching Reform includes: reform for cultivating excellent innovative talents, reforming the professional talent cultivation model, reforming practical innovation ability and teachers' comprehensive ability, developing and implementing teaching outlines for humanities subjects, and recognizing practical teaching. Classroom teaching includes: the extent of extracurricular learning expansion, the degree of learning diversity, and the extent of online network learning usage. Student development includes: interactive learning , student guidance and service, study style and learning effect. Quality assurance includes: a teaching quality assurance system; utilizing quality information to develop teaching; constructing an evaluation index system for painting design teaching abilities.

The guidelines of develop an effective digital technology supported model on painting design teaching:1)Integrate digital technology into the teaching design and teaching process to improve the teaching efficiency and quality.2)Digital technology is used to realize personalized teaching, and differentiated teaching is conducted according to students' characteristics and needs.3)Digital literacy will be incorporated into the school education and teaching system to promote students' all-round development.4)Through practical operation and application, to help students to master the basic operation and application skills of digital technology.5)Establish a special training mechanism to provide personalized training plans and support services for outstanding and innovative talents.6)Pay attention to cultivating students'

innovative thinking and practical ability 7)stimulate their innovative potential, and promote the growth and development of innovative talents. Provide a diversified learning environment and resources.8) encourage students to study and practice interdisciplinary, and cultivate their comprehensive ability and innovative consciousness.9)Focus on cultivating students' professional knowledge and skills.10) improve their professional quality and practical ability, so that they have the ability to adapt to social needs. Strengthen practical education, and provide opportunities such as internship and practical training, so that students can improve their professional skills and problem-solving ability in practice.

Encourage students to participate in practical projects and innovative activities, cultivate their practical ability and creativity, and promote the improvement of practical innovation ability. To improve teachers' teaching ability and professional quality, strengthen their practical experience and scientific research ability, and improve their comprehensive teaching level and ability. Actively promote the teaching reform, explore innovative teaching methods and modes, improve the teaching effect and students 'learning experience, and promote the improvement of practical innovation ability and teachers' comprehensive ability. Practical teaching is regarded as an important part of school teaching, and the importance of the practical ability cultivation and practical operation is emphasized.

Promote cooperation between different disciplines, diversify practical projects, integrate interdisciplinary fields, and enhance students' comprehensive abilities and innovative thinking. Provide students with professional mentor guidance to help them acquire practical skills and knowledge, as well as guide them towards independent thinking and innovative practices. Encourage students to participate in diverse extracurricular learning activities such as social practice, volunteer service, and subject competitions to broaden their horizons and enhance their abilities. Foster cooperative learning and interactive communication among students to cultivate teamwork skills, improve learning outcomes. Encourage inquiry-based learning and discussions to stimulate students' interest and initiative in learning while developing critical thinking and problem-solving abilities. Understand the learning styles and preferences of individual students in order to create personalized learning plans based on their unique characteristics. Advocate for diversified learning methods

including reading, listening, practice, etc., catering to the various needs and habits of different students.

Teach students effective learning strategies and methods to help them improve their learning efficiency and quality, as well as develop their self-directed learning and problem-solving skills. Collect and provide timely feedback on teaching quality information, analyze and address challenges that arise during the teaching process, and make necessary adjustments to teaching strategies and methods. Establish clear evaluation indicators for assessing the teaching design ability of painting art teachers, including but not limited to goal setting, content design, method selection, and resource utilization. Develop scientific and reasonable evaluation standards to ensure objective, accurate, and actionable assessment indicators that facilitate the evaluation and improvement of teachers' teaching design ability. Utilize digital technology to innovate teaching methods while guiding students in conducting innovative practices in the field of digital technology.

Teachers are encouraged to fully utilize digital technology resources, such as multimedia teaching and online teaching platforms. Based on students' learning situations, digital technology classroom resources are designed to meet the diverse learning needs of students, cultivating their independent learning abilities and stimulating their interest and motivation in learning. Teachers are encouraged to use a variety of curriculum resources, including textbooks, multimedia materials, and practice cases. They should integrate these various curriculum resources to create a comprehensive teaching content.

Curriculum resources should focus on practice and application, helping students to translate theoretical knowledge into practical skills. Depending on students' learning needs and educational objectives, the course structure should be optimized, with the course content and credit hours allocation arranged reasonably. High-quality course resources should be actively developed and introduced. When formulating humanities syllabi, we should base them on humanistic care and pay attention to students' humanistic qualities. The integration of disciplines should be strengthened by incorporating connections and interactions between different subjects into the syllabus. Emphasis should be placed on the practical and applied aspects of humanities syllabi so that students can apply their knowledge in real-life situations during the learning process. Support for self-learning and self-improvement

among students is important; they should be encouraged to participate in personalized learning programs and extracurricular extension courses. Attention must also be given to cultivating comprehensive qualities through extracurricular activities, including enhancing cultural literacy as well as physical fitness.

Students are encouraged to choose suitable learning methods and subjects, promoting cross-learning and interdisciplinary inquiry between disciplines. Through practical activities and project-based learning, students can improve the effectiveness and practicality of their learning. They are also encouraged to utilize online learning platforms in order to establish an interactive online learning environment that promotes communication. Furthermore, students' information literacy abilities will be cultivated through teaching network search skills and information screening. In interactive learning, students are encouraged to propose novel ideas and engage in thought-provoking discussions. Personalized guidance and services will be provided based on individual needs and characteristics, including comprehensive student support such as academic counseling, career planning, mental health assistance.

Establish a robust tutorial system to provide students with professional tutor guidance. Establish a sound evaluation mechanism and feedback system to assess the teaching process and outcomes. Emphasize curriculum construction and regular updates of teaching content. Implement a comprehensive quality assurance system to ensure the stability and continuous improvement of teaching quality. Provide support and guidance for developmental teaching initiatives. Utilize data analysis and evaluation tools to quantitatively analyze and evaluate the teaching process and its effectiveness. Evaluate teachers' ability in designing comprehensive and multi-faceted instructional approaches.

Discussion

In the model, it is evident that the main indicator factors in Design Teaching Mode Supported by Digital Technology rank from highest to lowest level as follows: Teaching reform, Classroom teaching, Student development, Quality assurance, Utilization of educational resources.

In relevant factors in the utilization of educational resources rank from highest to lowest level as follows: the impact of digital technology on teaching,

students' digital literacy, the utilization of digital technology in classroom resources, curriculum resources, quantity and structure development of courses.

In teaching reform, the relevant factors rank from highest to lowest level as follows: Reform for cultivating excellent innovative talents, reform to enhance teachers' comprehensive abilities, reform of the professional talent cultivation model, development and implementation of teaching outlines for humanities subjects, and recognition of practical teaching.

In classroom teaching, the relevant factors rank from highest to lowest level as follows: extent of extracurricular learning expansion, extent of online network learning usage, and degree of learning diversity.

In student development, the relevant factors rank from highest to lowest level as follows: interactive learning, guidance and services for students, study style, and learning effect.

In Quality assurance, the relevant factors rank as follows from highest to lowest level: Quality assurance system for teaching, Utilization of quality information in teaching, and Construction of evaluation index systems.

Round Two Evaluation of elements form research objective.

Results of data analysis of study the elements of Digital Technology Supported Model In Painting Design Teaching, Dimension of Utilization of educational resources .

The results of data analysis were used to define the elements of digital painting design and teaching technical support models, dimension of Utilization of educational resources, found that, for the impact of digital technology on teaching, Provide teachers with training and guidance on relevant digital technology, Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect frequency are the highest. It needs important equipment and infrastructure to Provide teachers with training and guidance on relevant digital technology, Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect, Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to

enrich the teaching content and stimulate students' interest in learning is the lowest. This is consistent with Rodrigues, Oliveira & Rodrigues (2023).'s theory.

For Digital Literacy for Students technology painting class, Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation. It needs important equipment and infrastructure to Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, etc. to show their creative achievements, Then, Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software. Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects. This is consistent with Rubmann (2015)'s theory.

For The utilization degree of digital technology classroom resources, Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning frequency are the highest. It needs important equipment and infrastructure to Teachers can fully consider the application of digital technology resources in the classroom design, such as Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching is intermediate communication level. Students are encouraged to actively participate in the use of digital technology resources, such as allowing them to use electronic devices in the classroom to improve the learning effect is the low. This is consistent with Samyaranjan (2023).theory.

For Curriculum resources, Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time frequency are the highest. It needs important equipment and infrastructure to Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time. Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students. is the lowest. This is consistent with Schiffer & Gereff (2019)'s theory.

For Course quantity, structure and the construction of high-quality course resources, actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students frequency are the highest. It needs important equipment and infrastructure to actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students, such as design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical. According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points is intermediate communication level.

Results of data analysis of study the elements of digital technology supported model in painting design teaching, dimension of teaching reform.

There are data analysis of the impact of Reform of the training of outstanding and innovative talents, Reform of the training mode of professional talents, Reform of practical innovation ability and teachers' comprehensive ability, The formulation and implementation degree of the humanities syllabus. Recognition of practical teaching.

Data analysis of the impact of Reform of the training of outstanding and innovative talents, Reform of the training mode of professional talents, Reform of practical innovation ability and teachers' comprehensive ability, The formulation and implementation degree of the humanities syllabus. Recognition of practical teaching, found that, for Reform of the training of outstanding and innovative talents, According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path, carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness frequency are the highest. It needs important equipment and infrastructure to carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness. Strengthen practical education links,

provide more practical cases and project practices, and cultivate students' innovation ability and practical skills is the lowest. This is consistent with Schumacher, Erol & Sihn (2016) 's theory.

For reform of the training mode of professional talents, Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability frequency are the highest. It needs important equipment and infrastructure to Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability. Then, Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability, Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment is intermediate communication level.

Focusing on the pivotal issue of nurturing talents in digital media application and sustaining the momentum of development in China's digital media industry has become a focal point. Combining practical content, suggestions for reforming the talent cultivation model of digital media application technology majors in higher vocational colleges can be proposed from two aspects: the construction of core curriculum systems and the development of majors. This aids in fostering more digital media application talents in higher vocational colleges (Wang & Chen 2020).

Practical teaching, as an integral component of higher vocational education, plays a crucial role in achieving the goals of talent cultivation. By constructing a more robust quality assessment system for practical teaching in higher vocational colleges and investigating the quality of practical teaching in these institutions, it is significantly important to scientifically construct evaluation systems and enhance the quality of practical teaching (Chen 2021).

For the reform of practical innovation ability and teachers' comprehensive ability, providing teachers with innovative teaching methods and resources support, encouraging them to carry out teaching research and innovative practice, and improving the frequency of teaching effect and quality are crucial. It is important to

have necessary equipment and infrastructure for conducting teaching research and innovative practice in order to enhance the teaching effect and quality. Additionally, providing students with more practical opportunities such as internships, practical training, scientific research projects, etc., can help cultivate their practical ability and foster an innovative mindset at an intermediate communication level. To improve teachers' comprehensive abilities including teaching ability, management ability, innovation ability, among others aspects through comprehensive training is essential for enhancing their overall quality and professional level. This aligns with Seebode, Ziefle & Him (2017)'s theory.

For The formulation and implementation degree of the humanities syllabus, Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline, regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect frequency are the highest. It needs important equipment and infrastructure to Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect. Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect is the lowest.

To recognize the importance of practical teaching, practice teaching will be integrated into the credit system. This integration will provide students with corresponding credit recognition and encourage their participation in practical activities to obtain academic recognition, which has the highest frequency. It is crucial to have important equipment and infrastructure for practice teaching. Additionally, providing practical experience certificates to students involved in practical teaching, recording their achievements and experiences in practical activities, and offering strong support for their future employment or further studies are essential. These modifications align with Shen, Chen, Zhang & Zhang's theory (2018).

Results of data analysis of study the elements ofdigital technology supported model in painting design teaching, dimension of teaching reform, dimension of classroom teaching.

The results of data analysis on studying the elements of a digital technology-supported model in painting design teaching, the dimension of teaching reform, and the dimension of classroom teaching found that extending the school's opening hours to provide more time and space for extracurricular study offers students the highest frequency of opportunities for independent study. However, it is important to note that extending the school's opening hours requires significant equipment and infrastructure. On the other hand, organizing students to participate in social volunteer activities can help them learn through practice and develop practical skills as well as a sense of social responsibility.

To promote diversity in learning, students should be supported in choosing learning content and methods based on their personal interests and specialties, enabling personalized learning and enhancing interest and potential for learning. It is essential to provide necessary equipment and infrastructure for supporting students' choices. Additionally, students are encouraged to engage in interdisciplinary studies, participate in courses and projects from various disciplines, broaden their horizons, and develop comprehensive abilities at an intermediate communication level.

Diverse learning experiences are a common characteristic of undergraduate education in world-class universities, supporting the cultivation of creativity among college students. Diversity in learning is primarily manifested in the cutting-edge and integrative nature of course content, the participatory and challenging nature of academic experiences, the diversity and exploratory nature of teaching methods, and the process-oriented and comprehensive nature of learning assessment. This holds significant implications for China's efforts in building first-class undergraduate education and nurturing creative talents (Mo 2019).

For use of online network learning, teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students frequency are the highest. It needs important equipment and infrastructure to Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students. Then, Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere is

intermediate communication level. Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review is the lowest. This is consistent with Sierzchula, Bakke, Maat & Wee (2014).'s theory.

Results of data analysis of study the elements of Digital Technology Supported Model In Painting Design Teaching, Dimension of Using of Student development.

Results of data analysis of study the elements of digital Technology Supported Model In Painting Design Teaching, Dimension of Using of Student development, found that, for Interactive learning, The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning frequency are the highest. It needs important equipment and infrastructure to The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning. Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students is the lowest. This is consistent with Smith & Johnson (2019).'s theory.

For Student guidance and service, Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice frequency are the highest. It needs important equipment and infrastructure to Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice, A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life. Then, Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance is intermediate communication level. Learning styles primarily manifest as learners' strategies and methods, exhibiting a certain level of stability and individual differences. Through research on students with different learning styles, personalized teaching can be better promoted (Yan, 2022).

To cater to different learning styles and enhance the effectiveness of studying, it is crucial to provide diverse learning resources and teaching methods, such as video lectures, group discussions, and practical activities. This requires essential equipment and infrastructure. Additionally, conducting a learning style questionnaire survey or employing other methods can help understand students' learning styles and habits in order to offer personalized support and guidance. Intermediate communication level was mentioned by 86% of experts. Furthermore, cultivating students' independent learning abilities, encouraging active exploration and learning, can improve both their interest in studying and overall academic performance. This aligns with Song, Hu & Zhang (2016)'s theory.

Results of data analysis of study the elements of Digital Technology Supported Model In Painting Design Teaching, Dimension of Using of Quality assurance.

The results of data analysis on studying the elements of Digital Technology Supported Model in Painting Design Teaching, specifically focusing on the dimension of using quality assurance, indicate that providing continuous professional development training and support for teachers can enhance their teaching level and ability, ensuring an improvement in teaching quality. Monitoring and evaluating curriculum settings, teaching content, and teaching methods are crucial for timely adjustments and improvements to enhance teaching quality and effectiveness. It is essential to have necessary equipment and infrastructure for monitoring and evaluating curriculum settings, teaching content, and teaching methods. Establishing a comprehensive teaching evaluation system that includes student evaluation, peer evaluation, as well as teaching supervision is vital for objective assessment and supervision of teaching quality. This finding aligns with Taiwo & Bwalya (2024)'s theory.

For the quality information utilization of development teaching, combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc frequency are the highest. It needs important equipment and infrastructure to Establishing a Technology Management Process, Then, According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and

continuously improve the teaching quality is intermediate communication level. This is consistent with Talati, Anand & Srinivasan (2016).'s theory.

For construction of expressive evaluation index system of painting art teachers' teaching design ability, design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation frequency are the highest. It needs important equipment and infrastructure to Keep abreast of industry trends and tracking competitor. Then, through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on is intermediate communication level.

Results of round three evaluation of guidelines form.

Utilization of educational resources

Integrate digital technology into the teaching design and teaching process to improve the teaching efficiency and quality. Digital technology is used to realize personalized teaching, and differentiated teaching is conducted according to students' characteristics and needs. Digital literacy will be incorporated into the school education and teaching system to promote students' all-round development. Through practical operation and application, to help students to master the basic operation and application skills of digital technology. these projects have been unanimously recognized by experts. Use digital technology to innovate teaching methods and methods to stimulate students' interest and motivation in learning. Guide students to conduct innovative practice in the field of digital technology, This is consistent with Tan, Zhang, Lu & Han (2016)'s theory. cultivate their innovative spirit and problem-solving ability. Teachers are encouraged to make full use of digital technology resources, such as multimedia teaching, online teaching platform, to enrich the classroom teaching content.

According to the learning situation and interest characteristics of the students, personalized digital technology classroom resources are designed to meet the diverse learning needs of different students. Through the utilization of digital technology resources, independent learning abilities can be cultivated among

students while stimulating their interest and motivation for learning. Teachers are encouraged to utilize a variety of curriculum resources, including textbooks, multimedia materials, and practical cases, in order to enrich the content delivered in classrooms. It is important for teachers to integrate these various curriculum resources into a systematic teaching approach that enhances coherence and integrity within the curriculum. Curriculum resources should also emphasize practical application in order to assist students in transforming theoretical knowledge into practical skills while enhancing overall effectiveness of the curriculum. The number of courses should be reasonable based on individual student's learning needs and educational objectives; however, it is better to have more rather than fewer courses available. Course structure should be optimized by appropriately arranging course content and credit hour allocation so as to ensure cohesion and coherence across all courses offered. Active efforts should be made towards developing and introducing high-quality course resources with an aim to improve overall course quality level while promoting comprehensive development among students.

Teaching reform

Establish a special training mechanism to provide personalized training plans and support services for outstanding and innovative talents. Pay attention to cultivating students' innovative thinking and practical ability, stimulate their innovative potential, and promote the growth and development of innovative talents. Provide a diversified learning environment and resources, encourage students to study and practice interdisciplinary, and cultivate their comprehensive ability and innovative consciousness. Focus on cultivating students' professional knowledge and skills, improve their professional quality and practical ability, so that they have the ability to adapt to social needs. Strengthen practical education, and provide opportunities such as internship and practical training, so that students can improve their professional skills and problem-solving ability in practice. Encourage students to study interdisciplinary, broaden their professional horizons, cultivate comprehensive ability and innovative consciousness, and meet the development needs of a diversified society. Encourage students to participate in practical projects and innovative activities, cultivate their practical ability and creativity, and promote the improvement of practical innovation ability. To improve teachers' teaching ability and

professional quality, strengthen their practical experience and scientific research ability, and improve their comprehensive teaching level and ability.

Actively promote the teaching reform, explore innovative teaching methods and modes, improve the teaching effect and students 'learning experience, and promote the improvement of practical innovation ability and teachers' comprehensive ability. data analysis Mdn is the highest. this means that these projects have been unanimously recognized by experts. In the formulation of the humanities syllabus, we should base on humanistic care, pay attention to students 'humanistic quality and emotional education, and cultivate students' humanistic feelings and social responsibility. Strengthen the integration of disciplines, incorporate the connection and interaction between different disciplines into the syllabus, and promote the interdisciplinary learning and the cultivation of comprehensive ability. Emphasize the practical and applied content of the humanities syllabus, so that students can apply knowledge to real life in the process of learning, and improve the effectiveness and practicability of learning. Mdn is the lowest .This is consistent with Turrentine & Kuran (2017).'s theory.

Classroom teaching

Practical teaching is considered an integral part of school education, with emphasis on the cultivation of practical abilities and hands-on experience. It aims to promote interdisciplinary cooperation, diversify practical projects, integrate various disciplines, and enhance students' comprehensive skills and innovative thinking. Professional mentors provide guidance to help students acquire practical knowledge and skills while encouraging independent thinking and innovative practices. Students are encouraged to engage in diverse extracurricular activities such as social practice, volunteer service, and subject competitions to broaden their horizons and enhance their abilities.

Support students in self-learning and self-improvement, encourage their participation in personalized learning programs and extracurricular extension courses, and cultivate their ability and interest in independent learning. Pay attention to the cultivation of students' comprehensive qualities in extracurricular learning, including improving cultural literacy, sports literacy, artistic accomplishment, and other aspects to promote their all-round development. Encourage students to choose suitable learning methods and subjects according to their own interests and abilities to

achieve personalized learning goals. Promote cross-learning and interdisciplinary inquiry between disciplines, expand students' knowledge field and thinking mode, and cultivate comprehensive abilities and innovative thinking.

Focus on the practicality and application of the learning content so that students can improve the effectiveness and practicality of their learning through practical activities and project-based learning. This is consistent with Uddin, Khadke, Bawankar & Das (2020)'s theory. Diverse learning experiences are a common characteristic of undergraduate education in world-class universities, supporting the cultivation of creativity among college students. Diversity in learning is primarily manifested in the cutting-edge and integrative nature of course content, the participatory and challenging nature of academic experiences, the diversity and exploratory nature of teaching methods, as well as the process-oriented and comprehensive nature of learning assessment. This holds significant implications for China's efforts to build first-class undergraduate education and nurture creative talents (Mo 2019).

Student development

Promote cooperative learning and interactive communication among students, cultivate teamwork ability and communication skills, and improve the learning effect and results. Students are encouraged to learn through inquiry and discussion, stimulate their interest and initiative in learning, and cultivate their critical thinking and problem-solving ability. data analysis Mdn is the highest, this means that these projects have been unanimously recognized by experts. Students are encouraged to use online learning platform to learn, realize flexible arrangement of time and place, and meet personalized learning needs. Establish an interactive online learning environment, promote the communication and cooperation between students, and improve the learning effect and experience. Cultivate students 'information literacy ability, teach network search, information screening, data analysis and other skills, and improve students' independent learning ability in network learning.

Enhancing the interactive learning between young children and their environment promotes their healthy growth and comprehensive development. Kindergartens should shift their educational philosophy to prioritize beautification in the process of environmental creation, emphasizing the exploration of the

educational functions inherent in the environment. This allows for a positive interaction between young children and their surroundings, facilitating the transition from passive knowledge acceptance to active exploration. By continuously exploring through children's discoveries and showcasing their developments during this process, growth is achieved (Zhang, 2024).

Students are encouraged to propose novel ideas and engage in interactive learning, fostering the collision of thoughts and the cultivation of innovative thinking, thereby stimulating students' creativity and innovative abilities. Personalized guidance and services are provided based on their needs and characteristics, assisting them in resolving academic and personal challenges while achieving their individual development goals. A comprehensive range of student services is offered, including educational counseling, career planning, mental health support, among others, ensuring students' holistic development and healthy growth. An effective tutorial system is established to provide professional tutor guidance for students' academic and professional advancement. value aligns with Van & Van's (2024) theory.

Quality assurance

Understand students' learning style and preferences, and make personalized learning plans and guidance programs according to the characteristics of different students. Advocate diversified learning methods, including reading, listening, practice and other learning methods, to meet the learning needs and habits of different students. Teach students effective learning strategies and methods, help them improve their learning efficiency and quality, and develop their self-directed learning and problem-solving skills. Collect and feedback the teaching quality information in time, analyze and solve the problems and challenges arising in the teaching process, and adjust the teaching strategies and methods in time. Clear evaluation and evaluation indicators of teaching design ability of painting art teachers, including but not limited to teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on. Establish scientific and reasonable evaluation standards to ensure that the evaluation indicators are objective, accurate, and feasible, facilitating the assessment and enhancement of teachers' instructional design abilities. The highest median data analysis indicates unanimous recognition of these projects by experts.

Establish a sound evaluation mechanism and feedback system, evaluate the teaching process and results, timely understand the teaching quality and problems, and continuously improve the teaching quality. Attach importance to curriculum construction and teaching content update, constantly improve the curriculum quality and teaching level, to meet the needs of students and social development requirements. Strengthen teaching quality management and supervision, establish a sound quality assurance system, to ensure the stability and continuous improvement of teaching quality. Actively integrate and utilize a variety of information resources, including student feedback, teaching evaluations, and teaching data to provide support and guidance for developmental teaching. By employing data analysis and evaluation tools, the teaching process and its effectiveness can be quantitatively analyzed and evaluated, providing a scientific basis for instructional improvement and decision-making. Effective evaluation tools and methods can be designed in the form of questionnaire surveys, observation records, classroom observations to comprehensively assess teachers' instructional design abilities from multiple angles. The lowest value is Mdn which is consistent with Vertesy's theory (2017). With the widespread application of online teaching in major universities, emerging issues are becoming increasingly prominent. These mainly include the transformation of teachers' roles, the reinitiation of teaching methods, optimization of quality supervision systems for instruction, as well as enhancement of efficiency evaluation systems for online teaching. This article reflects on these issues while exploring the establishment of a quality assurance system for online instruction in universities with an aim to promote innovation in educational reform at higher education institutions (Zhang 2022).

The second stage:

The focus groups evaluation of guidelines form.

The guidelines of develop an effective digital technology supported model on painting design teaching:1)Integrate digital technology into the teaching design and teaching process to improve the teaching efficiency and quality.2)Digital technology is used to realize personalized teaching, and differentiated teaching is conducted according to students' characteristics and needs.3)Digital literacy will be incorporated into the school education and teaching system to promote students' all-round development.4)Through practical operation and application, to help students to

master the basic operation and application skills of digital technology.5)Establish a special training mechanism to provide personalized training plans and support services for outstanding and innovative talents.6)Pay attention to cultivating students' innovative thinking and practical ability 7)stimulate their innovative potential, and promote the growth and development of innovative talents. This is consistent with Wang, Zhang & Feng (2020)'s theory. Provide a diversified learning environment and resources.8) encourage students to study and practice interdisciplinary, and cultivate their comprehensive ability and innovative consciousness.9.Focus on cultivating students' professional knowledge and skills.10) improve their professional quality and practical ability, so that they have the ability to adapt to social needs. Strengthen practical education, and provide opportunities such as internship and practical training, so that students can improve their professional skills and problem-solving ability in practice. Encourage students to study interdisciplinary, broaden their professional horizons, cultivate comprehensive ability and innovative consciousness, and meet the development needs of a diversified society. Encourage students to participate in practical projects and innovative activities, cultivate their practical ability and creativity, and promote the improvement of practical innovation ability.

Actively integrate and utilize a variety of information resources, including student feedback, teaching evaluations, and teaching data to provide support and guidance for developmental teaching. By employing data analysis and evaluation tools, the teaching process and its effectiveness can be quantitatively analyzed and evaluated, providing a scientific basis for instructional improvement and decision-making. Effective evaluation tools and methods can be designed in the form of questionnaire surveys, observation records, classroom observations to comprehensively assess teachers' instructional design abilities from multiple angles. The lowest value is Mdn which is consistent with Vertesy's theory (2017). With the widespread application of online teaching in major universities, emerging issues are becoming increasingly prominent. These mainly include the transformation of teachers' roles, the reinitiation of teaching methods, optimization of quality supervision systems for instruction, as well as enhancement of efficiency evaluation systems for online teaching. This article reflects on these issues while exploring the establishment of a quality assurance system for online instruction in universities with

an aim to promote innovation in educational reform at higher education institutions (Zhang, 2022).

Provide students with professional mentorship guidance, helping them master practical skills and knowledge, and guiding them towards independent thinking and innovative practice. Students are encouraged to participate in diverse extracurricular learning activities, including social practices, volunteer services, and subject competitions. This is consistent with the theory proposed by Wang, Kang, Wang, Huang & Xia (2018), aiming to broaden students' perspectives and enhance their abilities. Promote cooperative learning and interactive communication among students to cultivate teamwork abilities and communication skills for improved learning outcomes. Students are also encouraged to learn through inquiry and discussion in order to stimulate their interest and initiative in learning while fostering critical thinking and problem-solving abilities.

Understand students' learning styles and preferences, and create personalized learning plans and guidance programs based on the characteristics of individual students. Promote diverse learning methods, including reading, listening, practice, and other approaches to meet the different needs and habits of students. Teach effective learning strategies and techniques to enhance their efficiency and quality of learning while developing their self-directed learning skills and problem-solving abilities. Timely collect feedback on teaching quality information, analyze challenges that arise during the teaching process, make necessary adjustments to teaching strategies and methods accordingly. Establish clear evaluation criteria for assessing painting art teachers' instructional design abilities which include but are not limited to setting teaching goals, designing instructional content, selecting appropriate teaching methods, utilizing teaching resources effectively etc. Develop scientific and reasonable evaluation standards ensuring objectivity, accuracy,and practicality in order to facilitate assessment as well as improvement of teachers' instructional design abilities.

Use digital technology to innovate teaching methods and guide students in innovative practices related to digital technology. Teachers are encouraged to fully utilize digital technology resources, such as multimedia and online teaching platforms, while designing classroom resources tailored to meet the diverse learning needs of their students. This approach aligns with Wang, Chen & Zhang's (2018)

theory and aims to cultivate independent learning abilities among students while stimulating their interest and motivation.

Teachers are encouraged to use diversified curriculum resources, such as textbooks, multimedia materials, practice cases, etc. Teachers should integrate various curriculum resources to form a systematic teaching content. Curriculum resources should pay attention to practice and application, help students to transform theoretical knowledge into practical ability. Depending on students' learning needs and educational objectives. Optimize the course structure, reasonably arrange the course content and credit hours allocation. Actively develop and introduce high-quality course resources. In the formulation of the humanities syllabus, we should base on humanistic care, pay attention to students 'humanistic quality. Strengthen the integration of disciplines, incorporate the connection and interaction between different disciplines into the syllabus. This is consistent with Wang, Zheng, L & Huang (2018)'s theory.

Emphasize the practical and applied content of the humanities syllabus so that students can apply knowledge to real life in the learning process. Support students in self-learning and self-improvement, encouraging them to participate in personalized learning programs and extracurricular extension courses. Pay attention to cultivating students' comprehensive qualities through extracurricular activities, including improving cultural literacy and sports literacy. Encourage students to choose suitable learning methods and subjects, promote cross-learning and interdisciplinary inquiry between disciplines, enabling students to enhance the effectiveness and practicality of their learning through practical activities and project-based learning. Students are also encouraged to utilize online learning platforms.

Establish an interactive online learning environment to promote communication and cultivate students' information literacy abilities, teaching them network search and information screening. Encourage students to contribute novel ideas and engage in interactive learning to stimulate critical thinking. Provide personalized guidance and services based on their needs and characteristics, including comprehensive student support such as learning counseling, career planning, and mental health assistance. Implement a robust tutorial system with professional tutor guidance. Establish a sound evaluation mechanism and feedback system to assess the teaching process and outcomes.

Attach importance to curriculum construction and updating teaching content. Establish a sound quality assurance system to ensure the stability and continuous improvement of teaching quality, providing support and guidance for developmental teaching. Use data analysis and evaluation tools to quantitatively analyze and evaluate the teaching process and its effectiveness, comprehensively evaluating teachers' ability in designing lessons from multiple angles. This is consistent with Wang & Chiang's (2015) theory.

Recommendations

Digital technology is more and more widely used in drawing design teaching. In order to better support the development of drawing design teaching, it is essential to establish a perfect digital technology support model. This paper will discuss the application of digital technology in drawing design teaching, and put forward a digital technology support model including hardware, software, network and human resources, in order to help teachers make better use of digital technology in teaching and improve students' drawing design ability.

1. Application of Digital Technology in Painting Design Teaching

Digital Painting Software

Digital painting software is an indispensable tool in the teaching of painting design. Through the digital painting software, students can create lines, colors, materials and other aspects of the creation, to achieve a comprehensive grasp of painting design. Common digital painting software include Photoshop, Painter, Sketchbook, etc. They provide a wealth of painting tools and functions to meet the various needs of students in the process of painting design.

Virtual reality technology

Virtual reality technology can provide students with a more immersive painting experience. Through virtual reality equipment, students can create paintings in the virtual world, feel more real painting process and effect, and improve the artistic sensibility and expression of painting design. Virtual reality technology can also simulate a variety of painting scenes and materials to help students expand the imagination and creativity of painting design.

3D Modeling Software

With the application of 3D design in the field of painting design more and more widely, 3D modeling software has become an important tool in painting design teaching. Through 3D modeling software, students can create three-dimensional paintings, and realize the organic combination of flat design and three-dimensional design. 3D modeling software can also help students design and display virtual scenes, improve the visual effects and expressiveness of painting design.

Cloud storage and sharing platform

Cloud storage and sharing platform can help students easily store and share their paintings. Through cloud storage, students can access their paintings anytime, anywhere, to modify and improve. Through the sharing platform, students can share their works with others, get feedback and suggestions from others, and promote the exchange and cooperation of painting and design.

2. Construction of digital technology support model

In order to better support the development of graphic design teaching, we propose to build a digital technology support model including hardware, software, network and human resources. The model aims to provide teachers with a full range of digital technology support to help them better use digital technology in teaching and improve students' drawing and design ability.

Hardware support

Hardware support is the foundation of digital technology support model. It is suggested that the teaching of drawing design should be equipped with high performance computers, flat computers, drawing boards and other equipment to meet the needs of students in digital painting, virtual reality, 3D modeling and so on. In addition, the introduction of virtual reality equipment, 3D printing machines and other advanced equipment can also be considered to provide more comprehensive digital technical support.

Software Support

Software support is the core of digital technology support model. It is suggested to provide various tools such as digital painting software, virtual reality software, 3D modeling software for painting design teaching to meet the needs of students in different fields of painting design. In addition, customized painting design

software can be developed to provide personalized painting experience and creative platform.

Network support

Network support is an important part of digital technology support model. It is suggested to provide a high-speed and stable network environment for the teaching of painting design to ensure the needs of students in cloud storage, online communication, remote cooperation and so on. In addition, network platforms such as online teaching platforms and digital resource libraries can be established to provide more convenient teaching resources and services.

Human resources support

Human resource support is the key link of digital technology support model. It is suggested to train teachers with digital technology background and drawing design experience, and provide them with professional training and support to improve their digital technology application ability in drawing design teaching. In addition, professional digital technicians can be recruited to provide technical support and guidance to teachers and students.

Drawing design teaching is an important way to cultivate students' creative thinking and aesthetic ability. The application of digital technology provides more abundant and diversified possibilities for drawing design teaching. The establishment of a perfect digital technology support model will help teachers make better use of digital technology in teaching and improve students' drawing design ability. It is hoped that the digital technology support model proposed in this paper can provide a useful reference for the development of painting design teaching.

3. The application scope of digital technology in painting and design education.

Using models helps teachers better utilize digital technology, following standardized and rational execution of teaching tasks according to educational objectives. It enables teachers to prepare course content, create teaching resources, and manage student data and grades more efficiently. Through digital teaching tools and platforms, teachers can save a significant amount of time and energy, focusing on improving teaching quality and student learning outcomes. Teachers can adjust teaching content and methods based on students' learning needs and level differences, tailoring learning paths and teaching resources to each student to

enhance learning effectiveness and satisfaction. It supports online interaction and collaboration between teachers and students, fostering effective communication and cooperation through online discussions, collaborative editing, remote collaboration, and other means, creating a more open and interactive learning environment.

The use of models by government educational institutions helps to reduce operational costs. For instance, electronic textbooks can replace traditional printed materials, thereby reducing printing and distribution expenses. Online courses can substitute traditional classroom teaching, decreasing the need for teaching venues and equipment, thus saving educational funds.

It also aids government educational institutions in enhancing teaching quality and efficiency. Through digital teaching resources and tools, governments can provide students with richer, more vivid, and more intuitive learning experiences, facilitating better understanding and mastery of knowledge.

It benefits government educational institutions in achieving fair distribution and accessibility of educational resources. Through online education platforms and remote teaching technologies, governments can provide high-quality educational resources and services to remote and underprivileged areas, narrowing the urban-rural education gap and promoting educational equity and inclusivity.

It also aids government educational institutions in enhancing education governance and regulatory capabilities. Governments can utilize digital education data and information platforms to effectively allocate and manage educational resources, strengthen supervision and evaluation of the education process and outcomes, and enhance the scientificity and efficiency of education management.

Furthermore, it supports government educational institutions in carrying out educational innovation and reform. Governments can utilize digital technologies such as big data analysis and artificial intelligence to gain deeper insights into issues and challenges in the education sector, formulate more scientific and effective education policies and reform plans, and promote innovation and improvement in education systems and teaching models.

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Appendices

Appendix A

List of Specialists and Letters of Specialists Inviting for IOC Verification

Lists of experts in Delphi

NO.	Experts	Working years	Professional Title/Degree	Work unit
1	Interviewe 1	12	Associat Professor	Fuyang Normal University
2	Interviewe 2	22	Professor	Fuyang Normal University
3	Interviewe 3	11	Associat Professor	Fuyang Normal University
4	Interviewe 4	13	Associat Professor	Fuyang Normal University
5	Interviewe 5	16	Professor	Anhui University
6	Interviewe 6	12	Associat Professor	Anhui University
7	Interviewe 7	12	Associat Professor	Anhui University
8	Interviewe 8	11	Associat Professor	Anhui University
9	Interviewe 9	16	Professor	Anhui University
10	Interviewe 10	13	Professor	Yunnan Arts University
11	Interviewe 11	20	Professor	Yunnan Arts University
12	Interviewe 12	12	Associat Professor	Yunnan Arts University
13	Interviewe 13	11	Associat Professor	Yunnan Arts University
14	Interviewe 14	15	Professor	Yunnan Arts University
15	Interviewe 15	11	Associat Professor	Huaibei Normal University
16	Interviewe 16	19	Professor	Huaibei Normal University
17	Interviewe 17	13	Associat Professor	University Huaibei Normal
18	Interviewe 18	12	Associat Professor	JiMei University
19	Interviewe 19	20	Professor	JiMei University
20	Interviewe 20	13	Associat Professor	JiMei University
21	Interviewe 21	14	Associat Professor	JiMei University

Lists of experts in Focus group

NO.	Experts	Working years	Professional Title/Degree	Work unit
1	Interviewe 1	11	Associat Professor	Fuyang Normal University
2	Interviewe 2	20	Professor	Fuyang Normal University
3	Interviewe 3	15	Professor	Fuyang Normal University
4	Interviewe 4	13	Associat Professor	Fuyang Normal University
5	Interviewe 5	14	Professor	Fuyang Normal University
6	Interviewe 6	14	Professor	Fuyang Normal University
7	Interviewe 7	12	Associat Professor	Anhui University
8	Interviewe 8	13	Associat Professor	Anhui University
9	Interviewe 9	15	Professor	Anhui University

Appendix B

Official Letter

Ref.No. MHESI 0643.14/ 593

Bansomdejchaopraya Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

15 March 2024

Subject: Invitation to validate research instrument

Dear Associate Professor Dr. Zheng Ma, Fuyang Normal University

Mr. Li Xiaofei is a graduate student in Doctor of Philosophy Program in Digital Technology Management for Education of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Digital Technology Supported Model in Painting Design Teaching"

The thesis advisory committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. In this regard, we would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Yours faithfully,

Assistant Professor Akaranun Asvarutpokin
(Vice Dean of Graduate School for Dean of Graduate School)

Bansomdejchaopraya Rajabhat University
Tel.+662-473-7000
www.bsru.ac.th
E-mail: grad@bsru.ac.th

Appendix C

Research Instrument

Participant Recruitment E-mail

Dear _____,

Greetings.I am a student at Bansomdejchaopraya Rajabhat University working on a dissertation regarding digital technology supported model in painting design teaching. You have been identified as a person with experience and expertise in digital technology supported model in painting design teaching. I am conducting a research study to find out your views regarding digital technology supported model in painting design teaching. Please note, this study explores direct-assessment from a curriculum design standpoint, not from a regulatory standpoint. It is important that your views are included in this research so that the results are representative of experts in the field.

For this research study, I am using a qualitative Delphi method,which includes a minimum of three rounds of interview questions. Your participation in the study will require at least two interviews, and I estimate the study will require up to 3 hours of your time. Confidentiality will be maintained, and I will use pseudonyms or discuss the findings from the group. There are no known risks associated with this study. The main inconvenience will be the time it takes to complete the study.

If you are willing to participate in this study, please respond to this e-mail. I will send an official consent form and then we can proceed with the study. I am happy to answer any questions you might have before you agree to participate. You may also contact my chairperson with any questions you might have.

Sincerely,

Mr. Li Xiaofei
Candidate for PhD in digital technology management for education
Bansomdejchaopraya Rajabhat University

Round One Interview Questions

Subject

Digital Technology Supported Model In Painting Design Teaching

.....

Research objective

To study the impact of problem and resolution in effective painting design teaching.

Explanation

This round one interview questions form is part of research for a dissertation. The objective is To study the impact of problem and resolution in effective painting design teaching.The information obtained will be of great benefit to the researcher and can be a body of knowledge in short course for undergraduate students. Another thing is that the information obtained will be kept secret. The analysis and presentation will be an overall picture only and will not cause any damage to your business. Please give your interview answers as truthfully and as possible as possible. The interview is divided into 5 parts:

Part 1: General information of the interviewer

Part 2: Utilization of educational resources.

Part 3: Teaching reform.

Part 4: Classroom teaching.

Part 5: Student development

Part 6: Quality assurance.

Note : Definitions of terms are at the end of the interview form.

Part 1: General information of the interviewee.

1.Name.....

2.Age.....years

3.Highest educational qualification.....

4.Work experience.....years

5.Current job position.....

6.Professional technical title.....

Part 2:Utilization of educational resources

1.The impact of digital technology on teaching

In the impact of digital technology on teaching, how important does the university think? What are the main aspects that reflect it? How do you think impact of digital technology on teaching can be developed and improved?

Write down the answers.

……
……

2. Digital literacy for students technology painting class.

In digital literacy for students technology painting class, how important does.the university think? What are the main aspects that reflect it? How do you think digital literacy for students technology painting class can be developed and improved?

Write down the answers.

……
……

3. The utilization degree of digital technology classroom resources.

In the utilization degree of digital technology classroom resources, how important does the university think? What are the main aspects that reflect it? How do you think The utilization degree of digital technology classroom resources can be developed and improved?

Write down the answers.

……
……

4. Curriculum resources.

In curriculum resources, how important does the university think? What are the main aspects that reflect it? How do you think curriculum resources can be developed and improved?

Write down the answers.

……
……

5. Course quantity ,structure and the construction of high-quality course resources.

In Course quantity,structure and the construction of high-quality course resources, how important does the university think? What are the main aspects that reflect it?How do you think Course quantity ,structure and the construction of high-quality course resources can be developed and improved?

Write down the answers.

.....

.....

Part 3: Teaching reform

1. Reform of the training of outstanding and innovative talents.

In reform of the training of outstanding and innovative talents., how important does the university think? What are the main aspects that reflect it? How do you think reform of the training of outstanding and innovative talents.?

Write down the answers

.....

.....

2. Reform of the training mode of professional talents.

In Reform of the training mode of professional talents, how important does the university think? What are the main aspects that reflect it? How do you think reform of the training mode of professional talents. can be developed and improved?

Write down the answers

.....

.....

3. Reform of practical innovation ability and teachers' comprehensive ability.

In reform of practical innovation ability and teachers' comprehensive ability, how important does the university think? What are the main aspects that reflect it? How do you think reform of practical innovation ability and teachers' comprehensive ability. can be developed and improved?

Write down the answers

.....

.....

4. The formulation and implementation degree of the humanities syllabus.

In the formulation and implementation degree of the humanities syllabus, how important does the university think? What are the main aspects that reflect it? How do you think the formulation and implementation degree of the humanities syllabus can be developed and improved?

Write down the answers

.....

.....

5. Recognition of practical teaching..

In the recognition of practical teaching, how important does the university think? What are the main aspects that reflect it? How do you think the recognition of practical teaching can be developed and improved?

Write down the answers

.....

.....

Part 4: Classroom teaching

1. Extracurricular learning expansion.

In Extracurricular learning expansion, how important does the university think? What are the main aspects that reflect it? How do you think extracurricular learning expansion can be developed and improved?

Write down the answers

.....

.....

2. The degree of diversity in learning.

In the degree of diversity in learning., how important does the university think? What are the main aspects that reflect it? How do you think the degree of diversity in learning. can be developed and improved?

Write down the answers

.....

.....

3. Use of online network learning.

In use of online network learning, how important does the university think? What are the main aspects that reflect it? How do you think use of online network learning can be developed and improved?

Write down the answers

.....

.....

Part 5: Student development

1. Interactive learning .

In Interactive learning , how important does the university think? What are the main aspects that reflect it? How do you think interactive learning can be developed and improved?

Write down the answers

.....

.....

2.Student guidance and service.

In student guidance and service, how important does the university think? What are the main aspects that reflect it? How do you think student guidance and service can be developed and improved?

Write down the answers

.....

.....

3.Study style and learning effect.

In study style and learning effect, how important does the university think? What are the main aspects that reflect it? How do you study style and learning effect can be developed and improved?

Write down the answers

.....

.....

Part 6: Quality assurance

1.Teaching quality assurance system.

In teaching quality assurance system, how important does the university think? What are the main aspects that reflect it? How do you think teaching quality assurance system can be developed and improved?

Write down the answers

.....

.....

2. The quality information utilization of development teaching.

In the quality information utilization of development teaching, how important does the university think? What are the main aspects that reflect it? How do you think the quality information utilization of development teaching can be developed and improved?

Write down the answers

.....

.....

3.Construction of expressive evaluation index system of painting art teachers' teaching design ability.

In construction of expressive evaluation index system of painting art teachers' teaching design ability, how important does the university think? What are the main aspects that reflect it? How do you think construction of expressive evaluation index system of painting art teachers' teaching design ability. can be developed and improved?

Write down the answers

.....

.....

Evaluation of guidelines form

hnology Supported Model In Painting Design TeachingDigital Tec

Research objective

To study the impact of problem and resolution in effective painting design teaching.

Explanation

Please check the .The researcher therefore asked for assistance from experts .in the Interview regarding suitability and consistency with the content questions Please mark“√”.

Mark	Channel	Opinion
√	1+	Consistent
	0	Unsure
	1-	Not consistent

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
The strategy for effective Utilization of educational resources										
Impact of Digital technology on teaching.										
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.									
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.									
Digital literacy of students.										
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.									
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.									
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.									
Utilization of digital technology in classroom resources.										
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.									
9.	Encourage students to actively participate in the use of digital technology resources.									
.Curriculum resources										
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.									
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.									
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
Quantity, Structure, and development of courses.										
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.									
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.									
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students									
Teachers' Digital Literacy Teachers' Digital Literacy										
16.	Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
17.	Establish digital technology communities or networks where teachers can share experiences, resources, and teaching strategies. Through collaborative learning, teachers can inspire each other, solve problems together, and learn from each other's best practices.									
18.	Provide specialized training courses and workshops focusing on digital technology to help teachers acquire skills in using digital tools and resources, understand the latest educational technology trends and best practices. Training should be ongoing to ensure that teachers can keep pace with technological developments and continually enhance their digital literacy levels.									
The strategy for effective Teaching reform										
Reform for cultivating excellent innovative talents.										
19.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.									
20.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
21.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.									
Reform of Professional talent cultivation model.										
22.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.									
23.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.									
24.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
Reform to enhance teachers' comprehensive abilities.										
25.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.									
26.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.									
27.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.									
Development and implementation of teaching outlines for humanities subjects.										
28.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
29.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.									
30.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.									
Recognition of practical teaching.										
31.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.									
32.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.									
33.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
School management reform.										
.34	Establish and improve school ,information management systems including student information teacher information ,management ,management course ,management to ,exam result management achieve digitization and networking .of educational management									
.35	Introduce intelligent management tools and platforms such as smart ,campus management systems ,online examination systems to ,management systems learning enhance management efficiency .and service quality									
.36	Build an online teaching platform ,that supports remote teaching online teaching resource and learning ,management providing teachers ,management convenient and students with a .online learning environment									
The strategy for effective Classroom teaching										
Extent of extracurricular learning expansion.										
37.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
38.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.									
39.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.									
The extent of the teaching strategies.										
40.	Utilize digital technology to facilitate interdisciplinary integration, breaking down barriers between subjects, and engaging in interdisciplinary projects and collaborations to provide richer learning experiences and broaden knowledge perspectives.									
41.	Explore innovative teaching models and instructional environment designs, such as flipped classrooms, blended learning, smart classrooms, to enhance teaching effectiveness and student engagement.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
42.	Utilize digital technology to promote collaborative teaching among teachers and interdisciplinary integration, breaking down the boundaries between subjects, creating interdisciplinary learning environments, and enhancing students' comprehensive literacy and innovation capabilities.									
Degree of learning diversity.										
43.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.									
44.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.									
45.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
Extent of use of online network learning.										
46.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.									
47.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.									
48.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.									
Teachers' teaching ability in the classroom										
49.	Offer specialized training courses to help teachers learn how to effectively integrate digital technology into classroom teaching, including the use of interactive whiteboards, teaching software, online learning platforms, and other tools, to enhance teaching effectiveness and student engagement.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
50.	Encourage teachers to experiment with innovative teaching methods and strategies, such as leveraging virtual labs, online collaboration tools, gamification of learning, to enhance students' learning interest and engagement.									
51.	Provide timely technical support and services to ensure that teachers can smoothly resolve technical issues and difficulties when using digital technology for teaching.									
Content of the course design										
52.	Enhance the interactivity of the curriculum using digital technology, such as utilizing online discussion forums, virtual experiments, interactive courseware, to stimulate students' learning interest and engagement.									
53.	Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate.									
54.	Design personalized learning paths and instructional activities based on students' learning levels, interests, and needs, leveraging intelligent technology to provide customized learning experiences.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
The strategy for effective Student development										
Interactive learning										
55.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.									
56.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.									
57.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.									
Guidance and services for students.										
58.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.									
59.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
60.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.									
Students' learning level and attitude										
61.	Utilize digital teaching resources and multimedia technology to design engaging and interactive instructional content, such as animations, videos, games, to stimulate students' learning interests and enhance their motivation to learn.									
62.	Integrate content and activities related to the cultivation of digital literacy into the curriculum, helping students master basic operations and application skills of digital technology, enhancing their information literacy and fostering innovation awareness.									
63.	Through project-based learning, practical tasks, and case studies, students are encouraged to apply their acquired knowledge to solve real-world problems, fostering their problem-solving abilities and innovative thinking.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
Study style and learning effect.										
64.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.									
65.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.									
66.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.									
Learning motivation and self-study ability										
67.	Help students set clear, challenging, and measurable learning goals to stimulate their learning motivation and goal orientation.									
68.	Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
69.	Utilize diverse learning resources and activities, including virtual experiments, gamified learning, multimedia courseware, to stimulate students' curiosity and desire for exploration, thereby enhancing their learning motivation.									
The evaluation mechanism of the learning effect										
70.	Utilize learning analytics and big data technology to assess students based on their learning data and behavior patterns, identifying learning issues and potential needs, and providing targeted support and recommendations.									
71.	Pay attention not only to students' learning outcomes but also to their learning processes and thinking processes. Evaluate their learning depth and understanding ability by observing their learning behaviors and thought processes.									
72.	Utilize digital tools and online learning platforms to design diverse assessment tools, including online quizzes, assignment submissions, project presentations, online discussions, to comprehensively evaluate students' learning performance.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
The strategy for effective Quality assurance										
Quality assurance system for teaching.										
72.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.									
73.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.									
74.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.									
Teaching management and supervision mechanism										
.75	Establish teaching quality standards specifying ,and indicators system evaluation ,teaching objectives ,and performance indicators ,criteria for the purpose of assessing and .supervising teaching effectiveness									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
.76	Regularly invite education experts or external review committees to ,evaluate and review teaching party-providing objective third assessments to promote the .improvement of teaching quality									
.77	'Establish a mechanism for teachers ,reflection and improvement-self encouraging teachers to regularly reflect on and summarize their own continuously ,teaching practices teaching methods and improving .strategies									
Utilization of quality information in teaching.										
78.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.									
79.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.									
80.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	(If any)	1-	0	1
Technology research and development and innovative application										
81.	Create an organizational culture and atmosphere that supports innovation, encouraging employees to propose new ideas, experiment with new technologies, and allowing room for the possibility of failure, thus fostering the continuous emergence of technological research and innovative applications.									
82.	Allocate funds and resources to support technology research and innovative application projects, establish dedicated technology innovation funds or incubators, and encourage entrepreneurs and research teams to engage in technological innovation and commercialization applications.									
83.	Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological research and innovation achievements, and encourage enterprises and individuals to invest in innovation.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	)I(f any	1-	0	1
Construction of evaluation index systems										
84.	Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.									
85.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.									
86.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.									
Learn about culture and teaching ideas.										
87.	Advocate the concept of digital education, enrich teaching resources and provide personalized learning experience with the help of digital technology, and promote the innovation of teaching methods and teaching content.									

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons	Opinion level note		
		1	2	3	4	5	)I(f any	1-	0	1
88.	Advocate sharing and open educational resources, promote open educational resource platform, make learning resources more universal and convenient access, and promote the popularization and development of learning culture.									
89.	Establish learning communities and networks, provide a platform for learning exchange and resource sharing, let students and teachers interact and cooperate, and promote the construction and sharing of learning culture.									

Additional comments or suggestions regarding.

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Round Two Evaluation of elements form Subject

Research objective

To develop the effective digital technology supported model in painting design teaching.

Explanation

evaluation form is intended to collect your opinions as an This element .1 The questions in the assessment are about the details of the component of .expert The assessment is .design teaching problem and resolution on effective painting divided into Sections include: ,eral information of the respondentsGenUtilization of educational resources. .ntStudent developme.Classroom teaching.Teaching reform .Quality assurance

.2 Comments are given to assess the consistency of the component of painting problem and resolution on effective Please consider what .design teaching is How consistent is it in .specified in each item Then check ?practice“√”in the box according to your opinion as follow:

.means most consistent 5 Score level

.means very consistent 4 Score level

means 3 Score levelmodel.rately consistent

.means less consistent 2 Score level

.means least consistent 1 Score level

In .The last section“suggestions and reasons” asks you to express your opinions resolution more order to make the details of the elements of the problem and .complete

Please give .s schedule'ended questions at the end of each episode-Open.3 additional comments or suggestions for the completeness of each aspect of the Format .in particular

.General information of the interviewee

Name.....1

Age.....years.2

Highest educational qualification.....3

Work experience.....years.4

Current job position.....5

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
The strategy for effective Utilization of educational resources							
Impact of digital technology on teaching							
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.						
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.						
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.						
Digital Literacy for Students .technology painting class							
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.						
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.						
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
The utilization degree of digital technology classroom resources.							
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.						
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.						
9.	Encourage students to actively participate in the use of digital technology resources.						
.Curriculum resources							
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.						
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.						
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
structure and the construction of , Course quantity .quality course resources-high							
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.						
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.						
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students						
Teachers' Digital Literacy Teachers' Digital Literacy							
16.	Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction.						
17.	Establish digital technology communities or networks where teachers can share experiences, resources, and teaching strategies. Through collaborative learning, teachers can inspire each other, solve problems together, and learn from each other's best practices.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
18.	Provide specialized training courses and workshops focusing on digital technology to help teachers acquire skills in using digital tools and resources, understand the latest educational technology trends and best practices. Training should be ongoing to ensure that teachers can keep pace with technological developments and continually enhance their digital literacy levels.						
The strategy for effective Teaching reform							
Reform of the training of outstanding and innovative .talents							
19.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.						
20.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.						
21.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.						
.Reform of the training mode of professional talents							
22.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
23.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.						
24.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.						
'Reform of practical innovation ability and teachers .comprehensive ability							
25.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.						
26.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.						
27.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
The formulation and implementation degree of the .humanities syllabus							
28.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.						
29.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.						
30.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.						
.Recognition of practical teaching							
31.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.						
32.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.						
33.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
School management reform							
.34	Establish and improve school information including student ,management systems teacher information ,information management exam result ,course management ,management and to achieve digitization ,management .networking of educational management						
.35	Introduce intelligent management tools and platforms such as smart campus management learning ,online examination systems ,systems to enhance management ,management systems .quality efficiency and service						
.36	Build an online teaching platform that supports online teaching resource ,remote teaching ,and learning management ,management providing teachers and students with a .convenient online learning environment						
The strategy for effective Classroom teaching							
.Extracurricular learning expansion							
37.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.						
38.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.						
39.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
The extent of the teaching strategies							
40.	Utilize digital technology to facilitate interdisciplinary integration, breaking down barriers between subjects, and engaging in interdisciplinary projects and collaborations to provide richer learning experiences and broaden knowledge perspectives.						
41.	Explore innovative teaching models and instructional environment designs, such as flipped classrooms, blended learning, smart classrooms, to enhance teaching effectiveness and student engagement.						
42.	Utilize digital technology to promote collaborative teaching among teachers and interdisciplinary integration, breaking down the boundaries between subjects, creating interdisciplinary learning environments, and enhancing students' comprehensive literacy and innovation capabilities.						
.degree of diversity in learning The							
43.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.						
44.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.						
45.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
.learning Use of online network							
46.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.						
47.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.						
48.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.						
Teachers' teaching ability in the classroom							
49.	Offer specialized training courses to help teachers learn how to effectively integrate digital technology into classroom teaching, including the use of interactive whiteboards, teaching software, online learning platforms, and other tools, to enhance teaching effectiveness and student engagement.						
50.	Encourage teachers to experiment with innovative teaching methods and strategies, such as leveraging virtual labs, online collaboration tools, gamification of learning, to enhance students' learning interest and engagement.						
51.	Provide timely technical support and services to ensure that teachers can smoothly resolve technical issues and difficulties when using digital technology for teaching.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
Content of the course design							
52.	Enhance the interactivity of the curriculum using digital technology, such as utilizing online discussion forums, virtual experiments, interactive courseware, to stimulate students' learning interest and engagement.						
53.	Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate.						
54.	Design personalized learning paths and instructional activities based on students' learning levels, interests, and needs, leveraging intelligent technology to provide customized learning experiences.						
The strategy for effective Student development							
Interactive learning							
55.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.						
56.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.						
57.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
Student guidance and service.							
58.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.						
59.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.						
60.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.						
Students' learning level and attitude							
61.	Utilize digital teaching resources and multimedia technology to design engaging and interactive instructional content, such as animations, videos, games, to stimulate students' learning interests and enhance their motivation to learn.						
62.	Integrate content and activities related to the cultivation of digital literacy into the curriculum, helping students master basic operations and application skills of digital technology, enhancing their information literacy and fostering innovation awareness.						
63.	Through project-based learning, practical tasks, and case studies, students are encouraged to apply their acquired knowledge to solve real-world problems, fostering their problem-solving abilities and innovative thinking.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
Study style and learning effect.							
64.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.						
65.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.						
66.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.						
Learning motivation and self-study ability							
67.	Help students set clear, challenging, and measurable learning goals to stimulate their learning motivation and goal orientation.						
68.	Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative.						
69.	Utilize diverse learning resources and activities, including virtual experiments, gamified learning, multimedia courseware, to stimulate students' curiosity and desire for exploration, thereby enhancing their learning motivation.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
The evaluation mechanism of the learning effect							
70.	Utilize learning analystics and big data technology to assess students based on their learning data and behavior patterns, identifying learning issues and potential needs, and providing targeted support and recommendations.						
71.	Pay attention not only to students' learning outcomes but also to their learning processes and thinking processes. Evaluate their learning depth and understanding ability by observing their learning behaviors and thought processes.						
72.	Utilize digital tools and online learning platforms to design diverse assessment tools, including online quizzes, assignment submissions, project presentations, online discussions, to comprehensively evaluate students' learning performance.						
The strategy for effective Quality assurance							
.assurance system Teaching quality							
72.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.						
73.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.						
74.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
Teaching management and supervision mechanism							
.75	Establish teaching quality standards and ,specifying teaching objectives ,indicators system ,and performance indicators ,evaluation criteria for the purpose of assessing and supervising .teaching effectiveness						
.76	experts or external Regularly invite education review committees to evaluate and review party -providing objective third ,teaching assessments to promote the improvement of .teaching quality						
.77	'Establish a mechanism for teachers encouraging ,reflection and improvement-self eachers to regularly reflect on and summarize t continuously ,their own teaching practices .improving teaching methods and strategies						
.The quality information utilization of development teaching							
78.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.						
79.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.						
80.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
Technology research and development and innovative application							
81.	Create an organizational culture and atmosphere that supports innovation, encouraging employees to propose new ideas, experiment with new technologies, and allowing room for the possibility of failure, thus fostering the continuous emergence of technological research and innovative applications.						
82.	Allocate funds and resources to support technology research and innovative application projects, establish dedicated technology innovation funds or incubators, and encourage entrepreneurs and research teams to engage in technological innovation and commercialization applications.						
83.	Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological research and innovation achievements, and encourage enterprises and individuals to invest in innovation.						
Construction of evaluation index systems							
84.	Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
85.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.						
86.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.						
Learn about culture and teaching ideas							
87.	Advocate the concept of digital education, enrich teaching resources and provide personalized learning experience with the help of digital technology, and promote the innovation of teaching methods and teaching content.						
88.	Advocate sharing and open educational resources, promote open educational resource platform, make learning resources more universal and convenient access, and promote the popularization and development of learning culture.						
89.	Establish learning communities and networks, provide a platform for learning exchange and resource sharing, let students and teachers interact and cooperate, and promote the construction and sharing of learning culture.						

Additional comments or suggestions regarding.
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Round Three Evaluation of elements form
Subject

Research objective

To develop the effective digital technology supported model in painting design teaching.

Explanation

This element evaluation form is intended to collect your opinions as an .1 The questions in the assessment are about the details of the component of .expert The assessment is .design teaching resolution on effective painting problem and divided into Sections include: ,General information of the respondentsUtilization of educational resources. .Student development.Classroom teaching.Teaching reform .Quality assurance

.2 ase consider whatPle How consistent is it in .is specified in each item Then check ?practice“√”in the box according to your opinion as follow:

.means most consistent 5 Score level

.means very consistent 4 Score level

means 3 Score levelmodel .perfect match

.means less consistent 2 Score level

.means least consistent 1 Score level

In .The last section“suggestions and reasons” asks you to express your opinions order to make the details of the elements of the problem and resolution more .complete

Please give .s schedule'estions at the end of each episodeended qu-Open.3 additional comments or suggestions for the completeness of each aspect of the Format .in particular

.General information of the interviewee

Name.....1

Age.....years.2

Highest educational qualification.....3

Work experience.....years.4

Current job position.....5

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons
		1	2	3	4	5	)I(f any
The strategy for effective Utilization of educational resources							
Impact of Digital technology on teaching.							
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.						
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.						
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.						
Digital literacy of students.							
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.						
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.						
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
Utilization of digital technology in classroom resources.							
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.						
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.						
9.	Encourage students to actively participate in the use of digital technology resources.						
.Curriculum resources							
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.						
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.						
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
Quantity, Structure, and development of courses.							
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.						
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.						
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students						
The strategy for effective Teaching reform							
Reform for cultivating excellent innovative talents.							
16.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.						
17.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.						
18.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
Reform of Professional talent cultivation model.							
19.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.						
20.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.						
21.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.						
Reform to enhance teachers' comprehensive abilities.							
22.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.						
23.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
24.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.						
Development and implementation of teaching outlines for humanities subjects.							
25.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.						
26.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.						
27.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.						
Recognition of practical teaching.							
28.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
29.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.						
30..	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.						
The strategy for effective Classroom teaching							
Extent of extracurricular learning expansion.							
31.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.						
32.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.						
33.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.						
Degree of learning diversity.							
34.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
35.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.						
36.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.						
Extent of use of online network learning.							
37.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.						
38.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.						
39.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.						
The strategy for effective Student development							
Interactive learning.							
40.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
41.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.						
42.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.						
Guidance and services for students.							
43.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.						
44.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.						
45.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.						
Study style and learning effect.							
46.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
47.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.						
48.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.						
The strategy for effective Quality assurance							
Quality assurance system for teaching.							
49.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.						
50.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.						
51.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.						
Utilization of quality information in teaching.							
52.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.						

NO.	Issue conformity evaluate Items that	level of compliance					Suggestions and reasons)I(f any
		1	2	3	4	5	
53.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.						
54.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.						
Construction of evaluation index systems.							
55.	Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.						
56.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.						
57.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.						

Additional comments or suggestions regarding.

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Focus Group Form

Digital Technology Supported Model In Painting Design Teaching :Title

Explanation:

The purpose of this form is to focus on the strategies of effective online teaching and learning in vocational computer programming education through the Focus Group method.9 experts who meetthe qualification requirements have been carefully selected to ensure the professionalism and depth of the discussion. Together, the experts will delve into each specific strategy proposed for online teaching and learning. The team of experts will review each proposed strategy individually, and based on the discussior , a final conclusion will be made for each strategy:"Pass","Modify","Add","Delete".

Regarding the strategies of effective online teaching and learning in vocational computer programming education, please tick “√” the corresponding option column.

Thank You

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Items	Digital Technology Supported Model In Painting Design Teaching	Result			
		Pass	Modify	Add	Delete
Utilization of educational resources					
1.	Impact of digital technology on teaching				
2.	Digital literacy of students				
3.	Course resources				
4.	Quantity, structure, and development of courses				
5.	Utilization of digital technology in the classroom				
Teaching reform					
6.	Reform for cultivating outstanding innovative talents				
7.	Reform of professional talent training model				
8.	Reform to enhance teachers' comprehensive abilities				
9.	Development and implementation of teaching outlines for humanities subjects				
10.	Recognition of practical teaching				
Classroom teaching					
11.	Degree of learning diversity				
12.	Extent of extracurricular learning expansion				
13.	Extent of use of online network learning				
Student development					
14.	Factors of interactive learning				
15.	Guidance and services for students				

Items	Digital Technology Supported Model In Painting Design Teaching	Result			
		Pass	Modify	Add	Delete
Quality assurance					
16.	Study style and learning effect				
17.	Quality assurance system for teaching				
18.	Utilization of quality information in teaching				
19.	Construction of evaluation index systems				

Suggestion:

Appendix D

The Results of the Quality Analysis of Research Instruments

The index of objective congruence(IOC)

Strategles of Digital Technology Supported Model In Painting Design Teaching

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
The strategy for effective Utilization of educational resources								
Impact of Digital technology on teaching.		1	1	1	1	1	1	valid
1.	Provide teachers with training and guidance on relevant digital technology, so that they can master the application methods and skills of digital technology, and improve the teaching level.	1	1	1	0	1	0.8	valid
2.	Develop rich and diverse digital teaching resources, such as teaching videos, interactive courseware, online exercises, to enrich the teaching content and stimulate students' interest in learning.	1	1	1	1	1	1	valid
3.	Digital technology is used to realize personalized teaching, and the teaching contents and methods are customized according to students' learning needs and interests to improve the learning effect.	1	1	1	0	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Digital literacy of students.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
4.	Teachers can guide students on how to use digital technology tools to create paintings, including the basic operation and functions of drawing software.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
5.	Organize students to carry out practical operation, let them use digital technology to create in the actual painting projects, and improve their operational skills and creative ability.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
6.	Students are encouraged to combine digital technology with traditional painting skills to produce multimedia works, such as digital painting works, animation, to show their creative achievements.	**1**	**1**	**1**	**0**	**1**	**0.8**	**valid**
Utilization of digital technology in classroom resources.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
7.	Provide training and guidance on digital technology classroom resources, so that they can master how to effectively use digital technology resources for teaching.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
8.	Teachers can fully consider the application of digital technology resources in the classroom design, such as the use of teaching videos, interactive courseware and other rich teaching content, to stimulate students' interest in learning.	1	1	1	1	1	1	valid
9.	Students are encouraged to actively participate in the use of digital technology resources, such as allowing them to use electronic devices in the classroom to improve the learning effect.	1	1	1	1	1	1	valid
.resources Curriculum		1	1	1	0	1	0.8	valid
10.	Enrich the course resources, including teaching videos, online textbooks, practical cases, to meet the learning needs and interests of different students.	1	1	1	0	1	0.8	valid
11.	Teachers can guide students on how to use curriculum resources effectively, provide guidance and advice on use to help them better learn and apply knowledge.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
12.	Students are encouraged to participate in the evaluation and feedback of course resources, understand their needs and opinions, and adjust and improve the resource content and use mode in time.	1	1	1	1	1	1	valid
Quantity, Structure, and development of courses.		1	1	1	1	1	1	valid
13.	According to the needs of students and teaching requirements, the number and structure of courses should be reasonably planned to ensure the coverage of all subjects and knowledge points.	1	1	1	1	1	1	valid
14.	Design a forward-looking and targeted course content, combined with the actual needs and development trends, to ensure that the course is attractive and practical.	1	1	1	1	1	1	valid
15.	Actively introduce high-quality teaching resources at home and abroad, build a digital and personalized high-quality curriculum resource database, and provide rich learning resources for teachers and students.	1	1	1	0	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Teachers' Digital Literacy Teachers' Digital Literacy		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
16.	Provide opportunities for innovation and practice, encourage teachers to try new teaching methods and tools, and explore how to integrate digital technology into classroom instruction.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
17.	Establish digital technology communities or networks where teachers can share experiences, resources, and teaching strategies. Through collaborative learning, teachers can inspire each other, solve problems together, and learn from each other's best practices.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
18.	Provide specialized training courses and workshops focusing on digital technology to help teachers acquire skills in using digital tools and resources, understand the latest educational technology trends and best practices. Training should be ongoing to ensure that teachers can keep pace with technological developments and continually enhance their digital literacy levels.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
The strategy for effective Teaching reform								
Reform for cultivating excellent innovative talents.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
19.	According to the market demand and the industry development trend, formulate the innovative talent training plan, and clarify the training target and path.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
20.	Strengthen practical education links, provide more practical cases and project practices, and cultivate students' innovation ability and practical skills.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
21.	carry out international exchange and cooperation projects, introduce outstanding foreign talents and educational resources, and expand students' international vision and global competitiveness.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
Reform of Professional talent cultivation model.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
22.	Introduce project-driven teaching mode, so students can learn and apply knowledge through practical project practice, cultivate their practical ability and problem solving ability.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
23.	Strengthen the cooperation with enterprises and scientific research institutions, carry out the teaching practice activities combining industry, university and research, so that students can better understand the needs and development trend of the industry, and improve the competitiveness of employment.	1	1	1	0	1	0.8	valid
24.	Promote interdisciplinary education among different majors, cultivate students' comprehensive quality and cross-field ability, and improve their adaptability and innovation ability.	1	1	1	1	1	1	valid
Reform to enhance teachers' comprehensive abilities.		1	1	1	1	1	1	valid
25.	Provide students with more practical opportunities, such as internship, practical training, scientific research projects, to cultivate their practical ability and innovative consciousness.	1	0	1	1	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
26.	Provide teachers with innovative teaching methods and resources support, encourage them to carry out teaching research and innovative practice, and improve the teaching effect and quality.	1	1	1	1	1	1	valid
27.	To provide teachers with comprehensive ability training, including teaching ability, management ability, innovation ability and other aspects, to improve their comprehensive quality and professional level.	1	1	1	1	1	1	valid
Development and implementation of teaching outlines for humanities subjects.		1	1	1	1	1	1	valid
28.	Experts and scholars in relevant fields are invited to participate in the formulation of the humanities syllabus to ensure that the content is consistent with the development of The Times and the frontier of the discipline.	1	1	1	0	1	0.8	valid
29.	Regularly collect students' feedback and suggestions on the humanities syllabus, adjust and optimize the content in time, and improve the teaching quality and learning effect.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
30.	Provide teachers with relevant training and guidance for teachers to help them better understand and implement the humanities syllabus, improve the teaching level and teaching effect.	1	0	1	1	1	0.8	valid
Recognition of practical teaching.		1	1	1	1	1	1	valid
31.	Practice teaching will be incorporated into the credit system, giving students corresponding credit recognition, and they will be encouraged to participate in practical activities and obtain academic recognition.	1	1	1	1	1	1	valid
32.	Practical teaching reward system should be set up to reward and honor students who participate in practical teaching and perform excellent performance, and encourage them to participate more actively in practical activities.	1	1	1	1	1	1	valid
33.	Provide practical experience certificates to students involved in practical teaching, record their achievements and experience in practical activities, and provide strong support for their future employment or continued study.	1	1	1	0	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
School management reform		1	1	1	1	1	1	valid
.34	improve school Establish and information management including student ,systems ,information management teacher information course ,management exam result ,management to achieve ,management digitization and networking of .educational management	1	1	1	1	1	1	valid
.35	Introduce intelligent management tools and platforms such as smart ,campus management systems ,online examination systems ,learning management systems to enhance management .efficiency and service quality	1	1	1	1	1	1	valid
.36	Build an online teaching platform that supports remote online teaching ,teaching and ,resource management ,learning management providing teachers and students with a convenient .online learning environment	1	0	1	1	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
The strategy for effective Classroom teaching								
Extent of extracurricular learning expansion.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
37.	Schools can open a variety of interest classes, club activities, lectures, practical projects, so that students have more choices and opportunities for extracurricular learning.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
38.	Organize students to participate in social volunteer activities, practice, so that they can learn in practice, cultivate practical ability and social responsibility.	**1**	**1**	**1**	**0**	**1**	**0.8**	**valid**
39.	Extend the opening hours of the school, provide more time and space for extracurricular study, so that students have more opportunities to study independently.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
The extent of the teaching strategies		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
40.	Utilize digital technology to facilitate interdisciplinary integration, breaking down barriers between subjects, and engaging in interdisciplinary projects and collaborations to provide richer learning experiences and broaden knowledge perspectives.	**1**	**0**	**1**	**1**	**1**	**0.8**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
41.	Explore innovative teaching models and instructional environment designs, such as flipped classrooms, blended learning, smart classrooms, to enhance teaching effectiveness and student engagement.	1	1	1	0	1	0.8	valid
42.	Utilize digital technology to promote collaborative teaching among teachers and interdisciplinary integration, breaking down the boundaries between subjects, creating interdisciplinary learning environments, and enhancing students' comprehensive literacy and innovation capabilities.	1	0	1	1	1	0.8	valid
Degree of learning diversity.		1	1	1	1	1	1	valid
43.	Schools can offer a variety of different types of courses, including theoretical courses, practical courses, internship programs, to meet students' different learning needs and interests.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
44.	Students are encouraged to study interdisciplinary, participate in courses and projects in different disciplines, broaden their horizons and develop comprehensive abilities.	1	1	1	1	1	1	valid
45.	Support students to choose learning contents and methods according to their personal interests and specialties, so as to realize personalized learning and stimulate learning interest and potential.	1	1	1	0	1	0.8	valid
Extent of use of online network learning.		1	1	1	1	1	1	valid
46.	Schools can set up an online learning platform to provide students with online learning resources and courses for students to study at any time and anywhere.	1	0	1	1	1	0.8	valid
47.	Teachers can interact with students through the online teaching platform, and provide online q & A, real-time discussion and other services to promote the communication and interaction between teachers and students.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
48.	Schools can provide online learning tools, such as video teaching, online quizzes, to help students better conduct online learning and review.	1	1	1	1	1	1	valid
Teachers' teaching ability in the classroom		1	1	1	1	1	1	valid
49.	Offer specialized training courses to help teachers learn how to effectively integrate digital technology into classroom teaching, including the use of interactive whiteboards, teaching software, online learning platforms, and other tools, to enhance teaching effectiveness and student engagement.	1	1	1	1	1	1	valid
50.	Encourage teachers to experiment with innovative teaching methods and strategies, such as leveraging virtual labs, online collaboration tools, gamification of learning, to enhance students' learning interest and engagement.	1	1	1	0	1	0.8	valid
51.	Provide timely technical support and services to ensure that teachers can smoothly resolve technical issues and difficulties when using digital technology for teaching.	1	0	1	1	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Content of the course design		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
52.	Enhance the interactivity of the curriculum using digital technology, such as utilizing online discussion forums, virtual experiments, interactive courseware, to stimulate students' learning interest and engagement.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
53.	Incorporate content and activities related to the cultivation of digital literacy into curriculum design, teaching students how to effectively utilize digital technology to acquire information, solve problems, and innovate.	**1**	**0**	**1**	**1**	**1**	**0.8**	**valid**
54.	Design personalized learning paths and instructional activities based on students' learning levels, interests, and needs, leveraging intelligent technology to provide customized learning experiences.	**1**	**1**	**1**	**0**	**1**	**0.8**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
The strategy for effective Student development								
Interactive learning		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
55.	Provide interactive learning places and equipment, such as interactive whiteboard, online discussion platform, to promote the communication and interaction between students.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
56.	The interesting and challenging interactive learning activities are designed to guide the students to actively participate in them and enhance the fun and effect of learning.	**1**	**0**	**1**	**1**	**1**	**0.8**	**valid**
57.	Organize students to study in group cooperation, let them discuss and cooperate to solve problems together, and cultivate team spirit and communication skills.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
Guidance and services for students.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
58.	Each student is equipped with a special mentor to guide their study and life and provide personalized academic and career development advice.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
59.	A psychological counseling service mechanism is established to provide mental health support and guidance for students, and help them solve the confusion and stress in their study and life.	1	1	1	1	1	1	valid
60.	Provide career planning courses and activities to help students understand their interests and abilities, develop personalized career development plans, and provide employment guidance and assistance.	1	1	1	1	1	1	valid
Students' learning level and attitude		1	1	1	1	1	1	valid
61.	Utilize digital teaching resources and multimedia technology to design engaging and interactive instructional content, such as animations, videos, games, to stimulate students' learning interests and enhance their motivation to learn.	1	0	1	1	1	0.8	valid
62.	Integrate content and activities related to the cultivation of digital literacy into the curriculum, helping students master basic operations and application skills of digital technology, enhancing their information literacy.	1	1	1	0	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
63.	Through project-based learning, practical tasks, and case studies, students are encouraged to apply their acquired knowledge to solve real-world problems, fostering their problem-solving abilities and innovative thinking.	1	1	1	0	1	0.8	valid
Study style and learning effect.		1	1	1	1	1	1	valid
64.	Through the learning style questionnaire survey and other methods, we can understand the students' learning style and habits, and provide them with personalized learning support and guidance.	1	0	1	1	1	0.8	valid
65.	Provide diversified learning resources and teaching methods for students with different learning styles, such as video teaching, group discussion, practical activities, to meet the learning needs of different students.	1	1	1	1	1	1	valid
66.	Cultivate students' independent learning ability, encourage them to explore and learn actively, and improve the learning effect and learning interest.	1	1	1	0	1	0.8	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Learning motivation and self-study ability		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
67.	Help students set clear, challenging, and measurable learning goals to stimulate their learning motivation and goal orientation.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
68.	Utilize digital technology to provide personalized learning paths and resources, customizing instructional content and activities based on students' learning needs and interests, thereby stimulating their learning interest and initiative.	**1**	**0**	**1**	**1**	**1**	**0.8**	**valid**
69.	Utilize diverse learning resources and activities, including virtual experiments, gamified learning, multimedia courseware, to stimulate students' curiosity and desire for exploration, thereby enhancing their learning motivation.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
The evaluation mechanism of the learning effect		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
70.	Utilize learning analytics and big data technology to assess students based on their learning data and behavior patterns, identifying learning issues and potential needs, and providing targeted support.	**1**	**1**	**1**	**0**	**1**	**0.8**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
71.	Pay attention not only to students' learning outcomes but also to their learning processes and thinking processes. Evaluate their learning depth and understanding ability by observing their learning behaviors and thought processes.	1	1	1	1	1	1	valid
72.	Utilize digital tools and online learning platforms to design diverse assessment tools, including online quizzes, assignment submissions, project presentations, online discussions, to comprehensively evaluate students' learning performance.	1	0	1	1	1	0.8	valid
The strategy for effective Quality assurance								
Quality assurance system for teaching.		1	1	1	1	1	1	valid
72.	Establish a perfect teaching evaluation system, including student evaluation, peer evaluation, teaching supervision and other ways, to objectively evaluate and supervise the teaching quality.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
73.	Provide continuous professional development training and support for teachers, improve their teaching level and teaching ability, and ensure the improvement of teaching quality.	1	1	1	1	1	1	valid
74.	Monitor and evaluate the curriculum setting, teaching content and teaching methods, adjust and improve the curriculum in time, and improve the teaching quality and effect.	1	1	1	1	1	1	valid
Teaching management and supervision mechanism		1	1	1	1	1	1	valid
.75	Establish teaching quality standards and indicators specifying teaching ,system ,evaluation criteria ,objectives for ,performance indicators and the purpose of assessing and supervising teaching .effectiveness	1	0	1	1	1	0.8	valid
.76	Regularly invite education experts or external review committees to evaluate and providing ,review teaching party-objective third assessments to promote the improvement of teaching .quality	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
.77	for Establish a mechanism reflection and -self 'teachers encouraging ,improvement teachers to regularly reflect on and summarize their own continuously ,teaching practices improving teaching methods and .strategies	1	0	1	1	1	0.8	valid
Utilization of quality information in teaching.		1	1	1	1	1	1	valid
78.	By collecting students 'learning data, teachers' teaching data and other information, in-depth analysis is conducted to understand the problems existing in the teaching process and the space for improvement.	1	1	1	1	1	1	valid
79.	According to the analysis results, make specific teaching improvement plans, make clear the improvement goals and measures, regularly evaluate and adjust the plan, and continuously improve the teaching quality.	1	0	0	1	1	0.6	valid
80.	Combine educational technology and information tools, optimize the teaching process, improve the teaching efficiency and quality, such as online teaching platform, virtual laboratory, etc.	1	1	1	1	1	1	valid

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Technology research and development and innovative application		**1**	**0**	**0**	**1**	**1**	**0.6**	**valid**
81.	Create an organizational culture and atmosphere that supports innovation, encouraging employees to propose new ideas, experiment with new technologies, and allowing room for the possibility of failure, thus fostering the continuous emergence of technological research and innovative applications.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
82.	Allocate funds and resources to support technology research and innovative application projects, establish dedicated technology innovation funds or incubators, and encourage entrepreneurs and research teams to engage in technological innovation and commercialization applications.	**1**	**0**	**0**	**1**	**1**	**0.6**	**valid**
83.	Strengthen intellectual property protection, establish a sound intellectual property management mechanism, protect the legitimate rights and interests of technological research and innovation achievements.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Construction of evaluation index systems		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
84.	Through expert discussion and literature research, the performance evaluation index of evaluating the teaching design ability of painting art teachers is determined, including teaching goal setting, teaching content design, teaching method selection, teaching resource utilization and so on.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
85.	Design the evaluation tools suitable for the evaluation indicators, such as questionnaire survey, observation records, analysis of teaching design works, to ensure the objectivity and comprehensiveness of the evaluation.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
86.	In the actual teaching practice, the teaching design ability of the painting art teachers is evaluated, and the data and information are collected, evaluated and analyzed.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

NO	The effective strategies for the Digital Technology Supported Model in Painting Design Teaching	Experts					IOC	Validity
		NO 1	NO 2	NO 3	NO 4	NO 5		
Learn about culture and teaching ideas.		**1**	**1**	**1**	**1**	**1**	**1**	**valid**
87.	Advocate the concept of digital education, enrich teaching resources and provide personalized learning experience with the help of digital technology, and promote the innovation of teaching methods and teaching content.	**1**	**0**	**0**	**1**	**1**	**0.6**	**valid**
88.	Advocate sharing and open educational resources, promote open educational resource platform, make learning resources more universal and convenient access, and promote the popularization and development of learning culture.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**
89.	Establish learning communities and networks, provide a platform for learning exchange and resource sharing, let students and teachers interact and cooperate, and promote the construction and sharing of learning culture.	**1**	**1**	**1**	**1**	**1**	**1**	**valid**

Appendix E

Certificate of English

BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Mr. Li Xiaofei

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C1

Given on 22nd August 2021

(Assistant Professor Dr Kulsirin Aphiratvoradej)

Director

Appendix F

The Dociment for Accept Research/Full Paqer

Journal of Roi Kaensarn Academi

Modern Learning Development Centre

Modern Learning Development Co.,Ltd. 141 Village No.6 Banchai Sub-district, Ban Dung District, Udon Thani, Thailand, 41190

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Date : March 28, 2024

Acceptance Letter

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This is to enlighten you that above manuscript reviewed and appraised by the review committee member of Journal of Roi Kaensarn Academi by 3 assessors and it is accepted for the purpose of publication in Journal of Roi Kaensarn Academi at Group 1 of Thai journal citation Index Centre (TCI) with ISSN 2697-5033 (Online) Volume 9 Issue 7 July 2024 that will be available at https://so02.tci-thaijo.org/index.php/JRKSA/index

Sincerely

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