

DEVELOPMENT OF INTERDISCIPLINARY TALENT TRAINING MODEL OF NEW MEDIA ART MAJOR

SULTAN IDRIS EDUCATION UNIVERSITY

2025



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DEVELOPMENT OF INTERDISCIPLINARY TALENT TRAINING MODEL OF NEW MEDIA ART MAJOR

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ABSTRACT

This research aims to develop the interdisciplinary talent training model suitable for new media art major, which is essential for cultivating innovative talents who can adapt to the needs of future society and economy. The study adopted the Design and Development Research approach. Based on this, the study was conducted in three phases. The first phase is needs analysis, aims to determine the needs, and the survey is based on the views of 10 teachers and 15 graduates. The instruments used are semi-structured interview and focus group discussion. The second phase is design and development, which adopted Nominal Group Technique(NGT) and Fuzzy Delphi Method(FDM), The purpose is to design and develop the talent training model suitable, and this research is based on the opinions of 5 NGT and 15 FDM experts. The last phase is to evaluate the interdisciplinary talent training model, and this phase is to determine the feasibility of this model. In this phase, the questionnaire survey was used to determine the consensus opinion through the 180 teachers. According to the research questions, the research results of the first phase determine the talent training needs. The second phase is to determine the list of initial talent training model through NGT, and then conduct FDM. In FDM, the percentage of experts' consensus on questionnaire items was 88%, and all experts jointly confirmed the interdisciplinary talent training model suitable. In the third phase, the results of the questionnaire survey calculated by SPSS showed that the teachers unanimously agreed on the feasibility of the interdisciplinary talent training model. So the result of this study may be can provide guidelines and considerations for the training model, so as to cultivate new talents with innovative thinking and highly adaptability. Through continuous exploration and practice, students can be provided with richer, more flexible and practical educational experience.



PEMBANGUNAN MODEL LATIHAN BAKAT ANTARA DISIPLIN BAGI PROGRAM SENI MEDIA BARU

ABSTRAK

Kajian ini bertujuan untuk membangunkan model latihan bakat antara disiplin yang sesuai untuk jurusan seni media baharu. Kajian ini penting bagi melahirkan bakat inovatif yang dapat menyesuaikan diri dengan keperluan masyarakat dan ekonomi masa depan. Kajian ini menggunakan pendekatan Penyelidikan Reka Bentuk dan Pembangunan (Design and Development Research). Berdasarkan pendekatan ini, kajian dijalankan dalam tiga fasa. Fasa pertama adalah analisis keperluan, yang bertujuan untuk menentukan keperluan melalui pandangan 10 pensyarah dan 15 graduan. Instrumen yang digunakan ialah temu bual separa berstruktur dan perbincangan kumpulan fokus. Fasa kedua ialah reka bentuk dan pembangunan, yang menggunakan Teknik Kumpulan Nominal (Nominal Group Technique, NGT) dan Kaedah Fuzzy Delphi (Fuzzy Delphi Method, FDM). Tujuannya adalah untuk mereka bentuk dan membangunkan model latihan bakat yang sesuai, berdasarkan pendapat 5 pakar NGT dan 15 pakar FDM. Fasa terakhir adalah untuk menilai model latihan bakat interdisipliner ini, bertujuan menentukan kebolehlaksanaan model tersebut. Dalam fasa ini, soal selidik digunakan untuk menentukan konsensus pendapat melalui 180 pensyarah. Berdasarkan soalan penyelidikan, hasil penyelidikan fasa pertama menentukan keperluan latihan bakat. Fasa kedua menghasilkan senarai awal model latihan bakat melalui NGT, kemudian dilaksanakan FDM. Dalam FDM, peratusan konsensus pakar terhadap item soal selidik adalah 88%, dan semua pakar secara bersama mengesahkan model latihan bakat interdisipliner yang sesuai. Dalam fasa ketiga, hasil soal selidik yang dikira menggunakan SPSS menunjukkan bahawa para pensyarah sebulat suara bersetuju dengan kebolehlaksanaan model latihan bakat interdisipliner tersebut. Oleh itu, hasil kajian ini boleh memberikan panduan dan pertimbangan untuk model latihan, agar dapat melahirkan bakat baharu dengan pemikiran inovatif dan kebolehsuaian yang tinggi. Melalui eksplorasi dan praktik yang berterusan, pelajar boleh diberikan pengalaman pendidikan yang lebih kaya, fleksibel, dan praktikal.

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CHAPTER 1

INTRODUCTION



1.1 Introduction



In the context of the new era marked by rapid economic globalization and the swift advancement of the knowledge society, the forefront issues in science and technology, along with emerging interdisciplinary research, have become pivotal to human development and social progress. The vigorous growth of the Internet and big data has given rise to numerous cross-field emerging industries, creating an unprecedented demand for interdisciplinary professionals capable of addressing complex, multi-level challenges. The evolving landscape of industry and the shifting dynamics of the times render it increasingly difficult for knowledge from a single, isolated discipline to adapt comprehensively and systematically. This underscores the necessity for a multifaceted and integrative approach to education and professional training.





Since 2010, the CPC Central Committee and the State Council of China issued *The national long-term education reform and development planning outline* (2010-2020), universities and colleges, research institutes, enterprises and technology education resources sharing was actively promoted, has cultivated and built a large number of interdisciplinary, cross-field research and teaching combined teams, strengthen the interaction of scientific research and teaching, cultivate the talent innovation ability, enhance the level of scientific research achievements transformation ability. In 2012, issued by the Ministry of Education of *China On further strengthening the basic research work of universities guidance* emphasized the importance of interdisciplinary fusion in solving major scientific problems, highlighted the multidisciplinary advantages of colleges and universities, can establish and construct a number of dominant discipline clusters, enhanced the ability of discipline agglomeration, and the interdisciplinary integration of disciplines has also been deeply promoted. In 2015, The State Council of China issued the *Overall Plan for Promoting the Construction of World-class Universities and First-class Disciplines*, taking the training of strategic scientific and technological talents, first-class scientific and technological leaders and innovation teams in key core fields as the main goal, so that the practice of interdisciplinary and integration has been further promoted and developed in China. Therefore, it can be seen from the above documents that the Chinese government and the Ministry of Education attach great importance to interdisciplinary education. Moreover, interdisciplinary education is not an accidental behavior, but in the process of continuous research and development, and the relevant departments in China have realized the importance of interdisciplinary from the beginning.





In 2016, President Xi Jinping of the People's Republic of China at the National Conference on Science and Technology Innovation, *the 18th Academician Conference of the Chinese Academy of Sciences, the 13th Academician Conference of the Chinese Academy of Engineering, the Ninth National Congress of China Association for Science and Technology*, pointed out that scientific research institutes need according to the world science and technology development situation, optimize their science and technology layout, thick discipline foundation, foster emerging interdisciplinary growing point. In January 2017, the Ministry of Education, Ministry of Finance, the National Development and Reform Commission jointly issued the *Measures for the implementation of the world first-class university and first-class discipline construction (Temporary use)*, emphasizes the optimization of talent training model and discipline setting, facing China's science and technology development strategy layout and construction requirements, actively promote Chinese universities and colleges interdisciplinary integration, dynamic adjustment.

During his 2018 visit to Peking University, General Secretary and Chinese President Xi Jinping emphasized the importance of making significant efforts to establish interdisciplinary groups and robust scientific and technological research teams. He highlighted the need to enhance collaborative innovation across disciplines and bolster support for original, systematic, and pioneering research (Liu, J. Q., & Liu, P., 2020). So the documents of relevant government departments in the above meetings and the speeches of Chinese president all provide fundamental guidance for the discipline construction subjects of universities and research institutes to deepen the integration of disciplines, promote the cultivation and construction of





interdisciplinary disciplines, and provide basic principles and support for the cultivation of interdisciplinary talents.

In August 2018, several key Chinese administrative bodies, including the Ministry of Education, Ministry of Finance, and the National Development and Reform Commission, issued new guidance to accelerate the establishment of top-tier educational structures within higher learning institutions. This directive, known as the Double First-Class initiative, reiterated the importance of fostering interdisciplinary educational programs. It advocated for the exploration of innovative mechanisms for training entrepreneurial talents across various disciplines and professions, emphasizing the integration of diverse academic resources and the establishment of new interdisciplinary fields. This initiative also aimed to promote synergies between the domains of philosophy, social sciences, natural sciences, and engineering technologies. According to Zheng Shiming (2019), these governmental directives underscore the Chinese government's commitment to the pivotal role of interdisciplinary approaches in both the reform and enhancement of higher education. Thus, developing models for interdisciplinary talent training is deemed crucial and necessary.

In February 2022, the Ministry of Education, Ministry of Finance, the National Development and Reform Commission and issued *About deepening the world-class university and first-class discipline construction several opinions*, clear the importance of cultivating interdisciplinary, versatile talents, pointed out that should be in the basic discipline research center and application discipline base construction of docking linkage actively layout interdisciplinary professional, establish





interdisciplinary talent training plan and innovation development mechanism, promote the integration and interaction of natural science and humanities in the faculty, professional setting, training programs, organizational structure and other aspects (Su, Yang, & Piao, 2023). Therefore, actively promoting interdisciplinary and integration has become an important concern in the implementation of higher education policy and talent training model reform in China.

In *the 20th report of the Communist Party of China*, Chinese President Xi Jinping underscored that achieving high-quality development is paramount in the comprehensive construction of a modern socialist nation. To realize this objective, the government must diligently implement strategies such as rejuvenating the country through science and education, revitalizing it through human resources, and fostering innovation-driven development. This entails opening up new avenues and trajectories of development, continuously fostering new drivers and advantages, and comprehensively enhancing the quality of talent cultivation (Luo, Ji, & Shang, 2023). This demonstrates that the holistic advancement of socialist modernization necessitates the cultivation of millions of high-level talents, particularly those who are versatile and innovative. Furthermore, it requires elevating the overall standard of university discipline construction and fortifying both basic and emerging disciplines. Interdisciplinary integration must also be promoted and strengthened to enhance the construction level of disciplines comprehensively.

Hence, actively promoting interdisciplinary integration in university and college talent training, particularly in nurturing versatile and innovative talents, bears significant and enduring value. Universities and colleges, serving as the mainstay of





scientific research and talent development in every nation, play a pivotal role in fostering the convergence and integration of disciplines. This not only facilitates major breakthroughs and innovations in China's scientific research efforts but also contributes to the deepening reform of the talent training model. Consequently, it continually elevates the overall quality of talent development, especially in the realm of high-level talent cultivation.

1.2 Background of the Study

Interdisciplinary and integration is the value regression of the development of various majors' disciplines in response to the economic and social development and changes after the total-division process, is the concrete performance of production relations to adapt to the progress of productive forces, and also an important path to promote the solution of major national strategic propositions. In recent years, as an important driving force for cutting-edge scientific research and the cultivation of innovative and interdisciplinary talents, interdisciplinary integration has been highly valued by the Communist Party of China and the Chinese government. President Xi Jinping of the People's Republic of China has stressed on many occasions the need to promote interdisciplinary integration and interdisciplinary construction (President Xi Jinping of the People's Republic of China, 2021). Interdisciplinary integration and convergence are now recognized as the driving forces behind most major breakthroughs and pivotal innovations across various disciplines in today's world.





Accompanying interdisciplinary research is interdisciplinary education, recognized as a crucial method for nurturing interdisciplinary talents. Presently, numerous countries worldwide are witnessing a surge in interdisciplinary education and research initiatives, with some developed nations establishing unique interdisciplinary talent training frameworks. Such training not only aligns with the evolving characteristics of disciplinary development but also enhances students' overall competencies. It fosters the broadening of academic horizons and knowledge structures, as well as the cultivation of rigorous logical thinking abilities among students.

Interdisciplinary talent training is the consensus and characteristic of the world's top universities. The R.S. Woodworth of Columbia University put forward the term interdisciplinary research in 1926, which means a practical activity across two or more disciplines. In 2005, the American Academy of Sciences and the American Academy of Engineering defined interdisciplinary meaning as fundamental research model for individuals or groups to integrate concepts, information, content, methods, perspectives and/or theories from two or more disciplines (areas of expertise), and to conduct fundamental research on issues that transcend the boundaries of a single discipline or scope of practice. In the 100 years from 1901 to 2000, the proportion of Nobel Prize winners with interdisciplinary knowledge background increased from 29.73% to 49.07% (Liu, 2020). It can be seen that interdisciplinary talent training has appeared since the early 1920s. In the course of the past 100 years, interdisciplinary research has never stopped, and interdisciplinary research has certain research value. Moreover, the data also show that interdisciplinary education is indeed a good incubator for new major breakthrough scientific research achievements.





The development of education needs to meet the needs of modern science and technology, especially the reform of higher education from theory, system, content and method is imperative. Interdisciplinary talent training is put forward to meet the needs of today's scientific and technological development and economic development (Li, Huang, & Hu, 2002). Therefore, interdisciplinary talent training in higher education not only follows the law of educational development, but also respects the law of economic development. Almost all colleges and universities realize the importance of interdisciplinary talents training, and actively explore the practical path of interdisciplinary talent training, talent training from professional education to interdisciplinary education, the reform of China's higher education interdisciplinary talent training model will inevitably become an important indicator of higher education reform.



At this stage, the social need for talents is no longer a single professional discipline background or to master a certain one-way professional skills. The optimization and upgrading of various industries, communication and integration, as well as cross-field collaboration and cross-industry cooperation between enterprises require Talents with multidisciplinary ideas and international vision. They can master the practical skills and theoretical knowledge of a variety of disciplines at the same time, and can quickly find different perspectives and solutions to relevant problems in academic work and social practice (Yu, 2022). This shows that interdisciplinary talents can not only improve labor quality and labor efficiency in work activities, but also reduce time consumption and sunk costs in social activities and interpersonal communication, so as to promote the optimization of social labor and production





models and improve the quality of life of social groups. Therefore, interdisciplinarity and interspecialization are important trends in the development of higher education.

In the era of the knowledge economy's continuous evolution, the drawbacks of specialized talent training and education in colleges and universities have become increasingly apparent. The previously unified knowledge system has been artificially divided, leading to fragmented knowledge that not only hampers students' creativity but also constrains their holistic development. As society advances rapidly and the knowledge production model undergoes continual updates, numerous issues have arisen. The traditional single-discipline talent training model is inadequate for meeting the demands of social development and the intricate requirements of scientific and technological innovation. Consequently, the shift from single-discipline to interdisciplinary talent training models in colleges and universities is not only an inevitable progression but also represents a fundamental reform (Wu, Qiu, & Su, 2020). The adoption of interdisciplinary talent training in higher education is not just a matter of necessity, it also marks the future trajectory of higher education development.

New media art primarily encompasses the utilization of cutting-edge media technology to alter or disseminate contemporary art. This includes various forms such as video art, digital art, interactive art, Internet art, virtual art, and sound art. Additionally, it involves the incorporation of innovative technologies like robots, biotechnology, 3D printing, and animation in the artistic creation process, distinguishing it from traditional art forms such as painting, sculpture, and architecture. The origin of new media art can be traced back to the 1960s (Xu & Bai,





2023), compared with other art majors, it is a rising star, and the new media art major into the university major construction in the late 1990s and the beginning of this century. In Chinese universities and colleges, new media art major is also a new major, usually refers to the latest technical means to provide the traditional art of the incomparable multi-dimensional sensory experience of the major, through vision, hearing and even touch, smell and other ways to create immersive interactive works, this major is based on digital technology, is a closely associated with high-tech a major.

In China, there are over 100 regular undergraduate universities and colleges offering majors in new media art or related fields, effectively encompassing the diverse categories within new media art. Despite this broad coverage, China remains in the nascent stage of developing new media art programs. Over the years, universities and colleges in China have progressed gradually in new media art, transitioning from theoretical understanding to practical application and research. However, with the bolstering of China's overall national capabilities and the promotion of the digital information industry, the rapid advancement of the new media art industry has been accelerated.

The difference between new media art and traditional art reflected in a new word, the new technology, new materials, new ideas, etc, new media art the biggest characteristic is its development as the premise, integrated the art, computer, biology, psychology, vision and performance, and other disciplines (Zhang, 2020), so the new media art itself has certain interdisciplinary nature, this is the difference between the





new media art and traditional art, can be said to be the different media, creative means of different, creative tools is different.

New media art major works in non-material form, thus in the course content setting, teaching idea, teaching content and teaching practice with traditional arts (traditional Chinese painting, oil painting, printmaking, sculpture and so on) there is a big difference, and science, engineering parts of cross close, professional comprehensive strong, wide coverage, the depth and breadth of other professional cross. Therefore, the new media art major itself also has a certain complexity and comprehensiveness, and with the continuous development of social science and new technology, the new media art major also needs to constantly follow the changes of the times. The new media art major is also the product of the cross-integration of the training of students in the art field and the development of new media technology. At the same time, with the progress of technology and the continuous blurring of art boundaries, the training of new media art major should break through the single training model of traditional majors themselves, and explore the interdisciplinary talent training model that meets the development needs of the new era.

The distinct characteristics of modern new media art, particularly its cross-industry and cross-field nature, have introduced new demands for cultivating talents in this field. China's higher education system must align its objectives with the societal demand for talents, progressively grasping the trajectory of new media art development alongside technological and social advancements. In line with the spirit of contemporary progress, it is imperative to transcend the conventional single-training model prevalent in new media art majors. Instead, there is a pressing





need to pioneer a novel interdisciplinary talent training paradigm tailored specifically for the evolving demands of the new era in new media art.

As times evolve, the social landscape grows increasingly intricate and volatile, mirroring the complexity and evolution of social problems. In modern society, the major scientific and technological, economic and social problems in contemporary society show the characteristics of mutual penetration and mutual intersection. Problems such as environment, health, culture, energy and other problems often involve many disciplines and fields of society. Unified professional education model to cultivate specialized talents knowledge background has certain limitations, difficult to system comprehensive understanding of complicated, integrated social problems and provide a complete solution. Thus, social training endeavors to cultivate talents with a multidisciplinary perspective, interdisciplinary thinking, and the research acumen necessary to address the diverse needs of society.

1.3 Problem Statement

The urban development of any country relies heavily on continuous improvements in economic growth and national competitiveness. Achieving this requires the concerted efforts of a highly skilled workforce, particularly in the fields of emerging technologies. As institutions responsible for producing top-tier talents, universities play a pivotal role in fostering innovation. However, despite the evolution of universities in China into comprehensive institutions, many still adhere to a traditional, single-discipline approach to education, which fails to meet the dynamic





demands of modern society (Xu, Yu, & Zhang, 2024). This highlights the pressing need for universities to evolve and adopt more flexible, interdisciplinary approaches to education that cater to the changing needs of the industry and society as a whole. With rapid advancements in information technologies and the increasing integration of industries such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI), there is an urgent need for interdisciplinary professionals with both artistic and technical expertise. This makes it crucial to reconsider traditional educational models and develop training frameworks that align with the contemporary needs of society (Barnett, 2023; Laurillard, 2022). Universities need to embrace pedagogical innovations that foster creativity and critical thinking, enabling students to thrive in complex and interdisciplinary environments.



The major of new media art, a rapidly evolving field, also reflects this shift in educational demands. However, many universities in China, including those in Xi'an, continue to follow outdated, discipline-specific models based on early practices from foreign institutions. While these traditional models equip students with basic professional skills, they fall short in preparing graduates to tackle complex, interdisciplinary challenges in the workforce (Li, Shao, & Lu, 2022). This points to a significant mismatch between the skills imparted by current educational practices and the competencies required in the job market. Moreover, as industries demand new media art professionals who can bridge creative design and technological innovation, the existing training models become increasingly inadequate to meet the diverse needs of both the economy and society (Li, 2021; Jenkins, 2020). The need to innovate within educational structures to foster cross-disciplinary skills is therefore critical, as





it would enable graduates to become more adaptive and versatile in an increasingly convergent media landscape.

As Xi'an is a central hub for higher education in China, with a dense concentration of universities and research institutions, it serves as a representative case for investigating and addressing the shortcomings in talent development for the new media art field (Li, 2021). The growing demand for new media art professionals across sectors such as digital media design, animation, interactive development, and VR technology underscores the need for universities to adapt their training models to stay competitive in the global economy (Florida, 2021). It is imperative that these educational institutions do not merely follow the trends but lead by example in cultivating the next generation of creative industry leaders, thereby ensuring their relevance in a fast-paced economic landscape.



Despite the growing body of research on new media art education, much of it remains focused on general overviews of the field and basic curriculum structures, with limited attention given to the development of interdisciplinary talent training models (Xia, 2021). Additionally, there is a gap in research specifically examining how universities in Xi'an can implement innovative interdisciplinary talent training models in response to the evolving demands of science, technology, and industry. Most existing studies focus on journal articles that discuss the status quo of education, with few master's or doctoral dissertations that examine the interdisciplinary aspects of talent training models (Xu, Yu, & Zhang, 2024; Li, Shao, & Lu, 2022). This highlights the need for research that not only considers the demands of modern industries but also provides actionable insights into the reform of professional training





models (Biggs & Tang, 2023). By developing more nuanced and context-specific interdisciplinary models, universities can better align educational practices with the demands of today's interconnected world, ultimately enhancing the employability of their graduates.

The lack of interdisciplinary training models that effectively integrate artistic and technical skills creates a gap between the competencies of graduates and the requirements of modern industries. This gap necessitates a rethinking of current training practices and the development of a more comprehensive approach to training talent in the new media art field. Therefore, the research needs to first discuss the current situation of the new media art major talent training model at universities in Xi'an, identify the needs of industrial and social development, and design and develop an interdisciplinary talent training model suitable for the new media art major to meet the requirements of higher education development. The study aims to provide a more effective framework that aligns educational practices with the actual demands of the job market and industry (Kolb, 2020). Experiential learning, as suggested by Kolb, emphasizes the importance of experience as a fundamental part of the learning process, which is particularly relevant in cultivating practical skills in the new media art field.

In addition, with the continuous development of China's national economy, the creative industry is also gradually rising, and the demand for new media art talents across various fields is surging, putting higher standards and requirements on universities for innovative training approaches (Li, 2021). Therefore, the talent training model of the new media art major needs to constantly adapt to the new





requirements of China's social and economic development, thereby promoting the healthy development of new media art education and enhancing students' competitive advantage in the social market after graduation (Throsby, 2022). By aligning educational goals with the economic value of creative industries, universities can ensure that graduates contribute meaningfully to both cultural enrichment and economic prosperity.

After graduation, students majoring in new media art can pursue careers in areas such as we-media creation, social media operation, digital media design, animation production, interactive media development, virtual reality technology, and user experience design. Jobs in these fields are already playing a significant role in China's Internet industry, and thus the development of the new media art major also promotes the growth of China's creative industries. As a result, the major needs to adapt to the rapid development of economic globalization and advancements in technology, finding a suitable path for educational reform that aligns with these global trends (Xia, 2021; Castells, 2021). Castells' concept of the network society underscores the interconnectedness of technological advancements and societal change, which should guide the evolution of education in new media art to reflect these broader shifts.

Given Xi'an's position as a key center for higher education in China, with one of the highest concentrations of universities in the country, it represents an ideal case study for investigating improvements in talent training for new media art (Li, 2021). This study aims to summarize the characteristics and experiences of interdisciplinary talent training in both domestic and international contexts, applying these insights to adjust the traditional training models at universities in Xi'an. By deeply adjusting the





teaching content and removing the limitations of traditional approaches, this research will explore an interdisciplinary training model that is more suitable for the new media art major, ultimately providing valuable reference points for other institutions (Laurillard, 2022). Laurillard emphasizes the need for iterative design and pedagogical frameworks that are flexible, which is particularly beneficial in creating an adaptive curriculum for new media art students.

This research contributes to filling a critical gap in the literature by developing an interdisciplinary talent training model that meets the specific needs of the new media art field. By bridging the gap between educational practices and industrial demands, the study aims to enhance the employability of graduates and align higher education in Xi'an with broader economic and social developments.



1.4 Purpose of Research

Since the establishment of the University of Bologna in 1088, the modern university system has lasted for more than 900 years and undergone profound changes. With the development of the times, the functions of universities have also evolved. However, regardless of these changes, the central role of talent training has remained unchanged. Chinese President Xi Jinping has also emphasized that China must enhance the development level of its higher education and strengthen the country's core competitiveness. As the foundation and backbone of higher education, university and college education are critical components of the broader education system. Therefore, talent training has become the core mission of universities, and the talents





they cultivate should meet the needs of national economic and social development. When the talent training in universities does not fully align with the country's economic and social development, it is essential to comprehensively deepen educational reform, increase investment in teaching, and improve the quality of education to produce talents who can contribute meaningfully to society.

With the advancement of modern technologies such as the Internet, artificial intelligence, and 3D printing, the integration of disciplines is increasingly penetrating culture, the economy, and daily life. This integration has generated a growing demand for talents capable of tackling complex, interdisciplinary design problems. Therefore, colleges and universities should break down the barriers between art, design, technology, engineering, economics, sociology, and other disciplines, focusing on cross-disciplinary cooperation, penetration, and integration.



For the new media art major, adopting an interdisciplinary talent training model serves three key objectives. First, this approach aligns with the evolving nature of new media art education, aiming to enhance students' comprehensive capabilities. It is designed to cultivate their broad academic perspectives and rigorous logical thinking skills. The interdisciplinary model fosters integration between multiple disciplines during both teaching and practice, promoting the internalization of knowledge through cross-disciplinary interaction. This significantly enhances students' cognitive capacities in their professional fields and equips them with the skills necessary for multifaceted practice and complex problem-solving, as noted by Liu Yayan (2023). Second, the interdisciplinary model broadens students' academic horizons and enriches their knowledge structure, which is essential for developing their analytical





and creative abilities. By allowing students to engage with multiple disciplines, the model not only expands their understanding but also instills a strong framework for intellectual rigor and solution-oriented thinking. Third, by establishing an integrated training model tailored to new media art majors, the education system can produce professionals with a rich blend of interdisciplinary knowledge, meeting the diverse demands of contemporary society. This approach not only represents an innovative breakthrough in educational practices but also becomes a crucial component of students' knowledge architecture. This reform is pivotal not only for cultivating high-level talents who contribute to national economic growth but also for equipping students with competitive professional and technical skills in a dynamic job market. Moreover, this strategic educational model holds significant value for the future career prospects of students specializing in new media arts, ensuring they are well-prepared for real-world challenges.



In summary, this research aims to explore the development of an interdisciplinary talent training model for the new media art major at universities in Xi'an. The higher education stage is crucial for the development of innovative talents. In the talent training system for innovation, higher education plays a key role in harnessing innovative potential. Chinese universities will assume greater responsibility in knowledge innovation and talent development in the future. This study focuses on universities in Xi'an, the capital of Shaanxi Province, located in the northwest of China. Universities in Xi'an should leverage regional advantages in discipline construction, build upon advanced educational experiences, and continuously innovate by exploring a suitable talent training model. According to developments in science and technology, social demand, and industrial growth,





universities should adjust teaching content, break free from the constraints of traditional talent training models, and adopt a model that aligns with the characteristics of the new media art major. Integrating interdisciplinary concepts into the development of the new media art major will not only meet the evolving requirements of regional economic and social development but also enable the major to feature multiple levels and forms. This will promote the healthy development of new media art programs and provide graduates with a competitive edge in the job market. Ultimately, it will meet the needs of higher education's disciplinary development and hold significant social value.

1.5 Objectives of the Study



This study emphasizes the utilization of the development research approach, a form of design-based research, aimed at generating insights for a specific context and addressing a particular need or problem (Richey & Klein, 2007). Such research involves generating data through the iterative process of analysis, design development, implementation, and evaluation, guided by models and ideologies (Wang & Hannfin, 2005; Dewitt, 2010). In accordance with the identified problem statement, the study employs Design and Development Research (DDR) as the research method to investigate the interdisciplinary talent training model within the new media art major at a university in Xi'an. The study is structured into three phases: the needs analysis phase, the design and development phase, and the evaluation phase. Below are the objectives of the study corresponding to each phase.



Phase One: Needs Analysis

In order to determine the needs for the talent training model of new media art major at the university in Xi'an, the objective of the first phase was:

1. To identify the current situation of the talent training model of new media art major at the university.
2. To identify the needs of industry and social development for the training model of new media art major.

Phase Two: Design and Development

During this phase, the focus shifted to designing and developing the talent training model for the new media art major, based on the insights gleaned from the needs analysis phase.

3. To determine the appropriate talent training model suitable for new media art major at the university on experts' opinion and decision.
4. To review the initial model based on experts' feedback.

Phase Three: Model Evaluation

During this phase, the aim is to evaluate the feasibility of the model developed in the second phase and determine whether the talent training model for the new media art major is positioned more clearly and accurately.

5. To evaluate the feasibility of the interdisciplinary talent training model of new media art major at the university.

6. To ensure the interdisciplinary talent training model of new media art major more clearly and accurately locate the talent training model of new media art major.

1.6 Research Questions

Considering the problem statement and research objectives, the study poses the following research questions aligned with the three phases of the Design and Development Research (DDR) approach.

Phase One: Needs Analysis

1. What is the current situation of the talent training model of new media art major at the university?



2. What is the needs of industry and social development for the training model of new media art major?

Phase Two: Design and Development

3. Based on the experts' opinion and decision, what is the appropriate talent training model suitable for new media art major at the university?

4. How do experts review the initial model?

Phase Three: Model Evaluation

5. How is the feasibility of the interdisciplinary talent training model of new media art major at the university ?

6. Does the interdisciplinary talent training model of new media art major more clearly and accurately locate the talent training model of new media art major?

1.7 Significance of the Study

In October 2015, the State Council of China released the *Overall Plan for Promoting the Construction of World-Class Universities and First-Class Disciplines*, signaling a transformative shift in the educational landscape and bringing the concept of "double first-class" universities to the forefront of higher education reform. This initiative





underscores the growing national and societal demand for exceptional, innovative talents, emphasizing the critical role universities play in nurturing such individuals. According to Zhang & Li (2020), building a premier undergraduate education system is a vital component of the "double first-class" initiative. Talent development has become the cornerstone of higher education institutions, serving as the primary benchmark for evaluating their overall quality. Challenges within these educational systems directly impact the development of outstanding talents and leading innovators, as well as the evolution of academic disciplines. Therefore, the cultivation of talent remains central to shaping the future trajectory of higher education.

The rapid development of information technologies such as the Internet, big data, and the Internet of Things has dramatically reshaped the field of new media art, which is rooted in digital technologies. These technological advancements have introduced new experiences and significantly influenced public perceptions. In response to the widespread adoption of media technologies, numerous universities and colleges across China have established new media art majors, understanding the need for educational programs that evolve with scientific and technological progress. Given the fast-paced nature of innovation, talent training in this domain must be responsive to rapidly changing times and align with current technological trends.

Higher education reform covers various aspects, with the reform of talent training models being a key focus. In recent years, there has been a marked shift towards interdisciplinary talent training models, which reflect the evolving demands of modern society. Both Chinese and international universities have adopted this approach, creating interdisciplinary programs to foster students' interest and skills in





cross-disciplinary learning (Ji & Cui, 2021; Karmel & Margetts, 2020). The goal is to cultivate talents with interdisciplinary competencies that will contribute to scientific, technological, and societal advancement. In Chinese universities, the exploration of interdisciplinary talent training models in the new media art field aligns with its evolving nature, enhancing students' comprehensive abilities, broadening their academic horizons, and fostering critical thinking skills. These skills are essential for students preparing for future practice in the rapidly advancing new media art industry.

The construction of interdisciplinary talent training models is not only a response to industry demands but also contributes to improving university teaching and promoting social innovation. Furthermore, it equips graduates with professional advantages, enhancing their competitiveness in the job market. The practical significance of this study lies in developing a talent training model that responds to the evolving needs of the new media art field and provides students with interdisciplinary competencies to succeed in the global workforce.

The theoretical significance of this study lies in its potential to close a critical gap in the existing research on interdisciplinary talent training models in new media art education. While much of the current research focuses on general interdisciplinary approaches in higher education, there is a lack of specific studies addressing the unique needs of the new media art field. By developing a tailored interdisciplinary model for this field, this study contributes to filling this gap, offering both a theoretical framework and practical guidelines for the development of interdisciplinary education in new media art. This will provide insights into how





interdisciplinary knowledge can be effectively integrated into new media art curricula, thereby advancing both academic theory and educational practice in this domain.

This study aims to develop an interdisciplinary talent training model for new media art majors at a university in Xi'an. The objective is to enhance students' critical thinking, innovation, and collaboration skills while equipping them with interdisciplinary competencies that are increasingly valued in today's workforce. The model will prepare graduates to meet the evolving demands of science and technology, societal changes, and cultural developments. Graduates will possess a strong sense of responsibility, a scientific mindset, aesthetic judgment, and humanistic qualities. Moreover, they will demonstrate an understanding of both traditional Chinese culture and contemporary new media art trends. With modern design thinking and professional ethics, they will be able to apply core concepts, creative methodologies, visual aesthetics, and market strategies. Graduates will also demonstrate an innovative mindset, experimental spirit, and practical proficiency, enabling them to contribute to national and local economic transformation, as well as meet the needs of the cultural and creative industries.

Ultimately, the study's theoretical contribution will be in offering a new perspective on how interdisciplinary education models can be designed specifically for new media art programs, fostering high-quality, adaptable talents capable of thriving in various professional contexts and contributing to both local and global creative economies.



1.8 Definitions of the Terms

The following definitions are considered for the purpose of this study.

1.8.1 Interdisciplinary

The term interdisciplinary was initially introduced by the renowned psychologist Wood Worth in 1926. Its definition encompasses the interrelation between two or more distinct disciplines, spanning from the exchange of ideas to broader concepts within the realms of education and research. This correlation extends to various aspects, including methodologies, procedures, epistemologies, terminologies, and even organizational structures (Fang, 2023).

1.8.2 Talent Training Model

The talent training model is a comprehensive category consisting of elements, standards, and processes. It is a standardized system composed of training objectives, selection mechanisms, agent cooperation, training programs, process management, and other components, all guided by specific educational concepts and theories (Wang, X., et al., 2019). In China, the term "model" (模式) is widely used in official discourse to describe a structured approach to talent training, often indicating a systemic framework for achieving educational goals (Li & Zhang, 2022). In contrast, in Malaysia, this concept may be interpreted more flexibly as a guideline, with an



emphasis on adaptable frameworks for educational development (Tan & Aziz, 2021). Both approaches reflect the cultural and educational context within which they are applied, yet both emphasize the importance of a structured and theory-guided system in talent development.

1.8.3 Interdisciplinary Talent Training Model

The interdisciplinary talent training model is an education model that reflects the new educational concept of social needs. It means to cultivate compound talents with broad basic theory, broad knowledge, high quality, strong adaptability and innovation potential through a certain education model, and these talents basically master the theory, knowledge and skills of two or more disciplines and have interdisciplinary awareness and innovative spirit (Li, W. X., & Huang, H., 2004).

1.8.4 New Media Art

During the 20th century, the emergence of new media art marked a significant evolution in contemporary artistic expressions, characterized by its reliance on advanced technologies for creation, modification, and dissemination. This artistic genre incorporates a diverse spectrum of forms, such as video art, digital art, interactive art, Internet art, virtual art, and sound art. Artworks in this domain are notably distinct due to their use of groundbreaking technologies, including robotics, biotechnology, 3D printing, and animation production, setting them apart from





conventional artistic mediums (Liu & Wang, 2022). These innovations have not only expanded the boundaries of artistic expression but have also introduced new avenues for audience engagement and interaction.

1.8.5 New Media Art Major

The new media art major offers an incomparable multi-dimensional sensory experience compared to traditional art, utilizing the latest technological tools to create immersive interactive works through visual, auditory, and even tactile, olfactory, and other sensory experiences. This major, based on digital technology, is deeply connected with high technology. In China, the new media art major is coded as 130511T, and there are more than 100 undergraduate universities and colleges offering new media art or related majors, covering a broad range of new media art categories (Zhang & Li, 2021).

1.9 Limitations of the Study

In this study, it is mainly to explore the development of interdisciplinary talent training model of the new media art major at the university in Xi'an. The study has three limitations: point1: The limitation of the research location, this study is conducted in the university with new media art major in Xi'an, the research location is Xi'an, point2: The limitation of research major, the research major is new media art





major, point3: The limitation of research content is the talent training model of the new media art major.

1.9.1 Limitations of Research Location

This study was conducted at the university in Xi'an that offers the new media art major. Xi'an, the capital of Shaanxi Province, is a central city in western China, known for its historical significance as the starting point of the Silk Road and its role as the capital for several dynasties. Today, it remains a key hub for education, culture, and economic activity in northwest China.

Xi'an is home to over 60 higher education institutions, including some of the country's most prestigious universities. Its educational infrastructure and historical importance have made it a strategic location for the development of various academic disciplines, including new media art. In particular, the city plays a pivotal role in the integration of higher education in emerging fields, providing unique opportunities for research in talent training models.

The university selected for this study, Modern College of Northwest University, is an independent institution approved by the Ministry of Education and affiliated with Northwest University, one of the oldest and most comprehensive universities in the region. Modern College opened its new media art major in 2018 under the code 130511T, focusing on the integration of arts and technology. This makes it a fitting case study for examining the development and implementation of new media art talent



training models. While Xi'an's rich cultural heritage and its historical significance contribute to its educational prestige, it is important to note that the specific dynamics and challenges faced by Xi'an universities may not fully represent those of universities in other regions of China. Thus, the findings from this study, while valuable, may be limited in their generalizability to other cities or regions with different educational contexts.

1.9.2 Limitations of the Research Major

The application of the major code 130511T is specifically designated for the new media art major within Chinese higher education institutions, and is not applicable to other art disciplines. New media art is an undergraduate program that integrates contemporary art practices with new media technologies, including digital technologies, for creation, modification, and distribution. As a relatively new field in Chinese universities, it represents an emergent discipline that is still evolving in terms of its academic framework and pedagogical approaches.

This major is inherently interdisciplinary, incorporating elements from a variety of fields, including art, optics, electronic information, and engineering. As a result, it has significant breadth, blending technological innovation with artistic expression. The rapidly changing landscape of science and technology, alongside the evolving needs of society, further drives the continuous development of this major.

Traditionally, talent training models in art disciplines have often drawn on established practices from both domestic and international institutions, which can result in similar methodologies across different programs. However, due to the unique interdisciplinary nature of new media art, there is a clear need for the development of specialized talent training models that address the specific requirements of this field. Tailoring these models will ensure that educational strategies remain current and adaptable to the fast-paced evolution of new media art.

1.9.3 Limitations of the Research Content

This research is dedicated exclusively to formulating a talent training model for the new media art major, deliberately excluding other pertinent issues within the field. Historically, Chinese universities and colleges have primarily focused on discipline-specific approaches to talent development, with models carefully designed to align with the evolving demands of society. This study seeks to continue this tradition by specifically optimizing educational strategies that address the unique needs and potential of the new media art discipline. However, the static nature of such models risks disconnecting from the rapidly evolving social demands.

Since the 1980s, with the deepening of educational reforms and the diversification of social education needs, the limitations of traditional talent training models have become a significant concern in China's higher education landscape. Despite ongoing efforts, reform and innovation in talent training models remain underdeveloped in Chinese higher education (Lai, 2018). Many art students still



possess a narrow knowledge structure, mastering only their own discipline while neglecting related fields. Therefore, there is an urgent need to thoroughly examine the essence of talent training models, identify areas of confusion, and explore avenues for reform and innovation. This endeavor is crucial to advancing higher education and talent cultivation.

In a global context, similar challenges are observed in many countries. For instance, in the United States, interdisciplinary education has been recognized as essential to preparing students for the complexities of modern careers (Jin & Cui, 2020). Similarly, in Malaysia, higher education reforms have focused on integrating interdisciplinary learning to better meet the needs of an increasingly digital and interconnected world (Tan & Lim, 2021). Such international perspectives provide valuable insights for the development of innovative talent training models in new media art, fostering a more adaptive and comprehensive approach to education.

1.10 Summary

The urban development of every nation is integral to advancing national economic growth and enhancing the country's core competitiveness. However, the pace of economic progress depends heavily on governmental policy support and the collective efforts of highly skilled talents. As universities and colleges serve as critical hubs for nurturing top-tier innovative talents, talent development has become a central focus for these institutions. Interdisciplinary education not only enhances the overall quality of higher education but also serves as an effective means to improve students'





comprehensive abilities and societal competitiveness (Qin, 2023). Observing global trends in higher education, various education systems worldwide are increasingly adopting interdisciplinary approaches to cultivate innovative talents with greater adaptability. Hence, integrating interdisciplinary elements into higher education talent training models holds significant research value and importance. Numerous universities and colleges, both domestically and internationally, have already initiated active research and practical efforts in this area, yielding notable outcomes.

The rapid advancement of contemporary information technology has catalyzed the growth of the new media art major, elevating it to previously unseen levels in artistic academic pursuits. Across China, an increasing number of universities and colleges have launched dedicated programs to nurture talent in this innovative field. A closer examination reveals that the new media art major not only reflects the essence of modernity but also demonstrates substantial interdisciplinary integration. Its development is closely tied to progress in science and technology, continually evolving in response to these technological breakthroughs. The accelerated pace of advancements in science and technology opens vast opportunities for the expansion of new media art. This dynamic landscape underscores the urgent need to develop a talent training model for the new media art major that aligns with the contemporary developmental needs of society, ensuring that graduates are well-equipped to contribute meaningfully in this rapidly changing sector.

By incorporating the interdisciplinary concept into the talent training model of the new media art major, this approach can effectively address the evolving demands of national social and economic development. Not only does this model foster the





robust development of the new media art major, but it also aligns with its inherent characteristics. Furthermore, it comprehensively enhances students' capabilities in this field. Equipped with interdisciplinary skills, graduates are better positioned to excel in the competitive job market post-graduation, significantly impacting their professional endeavors in new media art. Simultaneously, this initiative meets the evolving needs of discipline development in Chinese universities and colleges.

Consequently, the aim of this research is to investigate the formulation of an interdisciplinary talent training model tailored to the new media art major at a university in Xi'an. This study intends to explore how such a model can effectively integrate various disciplinary perspectives and methodologies, creating a robust educational framework that meets the unique demands of the evolving field of new media art. The goal is to cultivate students with comprehensive interdisciplinary abilities, facilitating a closer integration of university teaching and social innovation. This endeavor holds significant social value, contributing to the advancement of both higher education and societal innovation.

