

Exploration into the Innovative Path of Teaching Mode for Vocal Music Education in Higher Education Institutions in the New Era

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ABSTRACT In the context of the new era, China's higher art education has entered a stage of high-quality transformation in which aesthetic education, cultural development, and diversified talent demand jointly require renewal of university vocal music teaching. Taking bel canto vocal education as the research object, this study examines the limitations of the traditional one-to-one and skill-centered teaching mode, including insufficient digital support, weak interdisciplinary training, limited stage practice, and a single evaluation system. On this basis, an innovative teaching path is proposed that integrates scientific vocal training, aesthetic cultivation, humanistic interpretation, stage-scenario practice, and digital teaching resources. The study further considers digitally mediated music classrooms in which audio acquisition, wireless transmission, recording platforms, and electromagnetic-compatible stage equipment increasingly affect teaching quality and practical implementation. The proposed model emphasizes blended teaching, digital-assisted feedback, repertoire localization, cross-genre practice, and multi-dimensional assessment. The results provide a systematic reference for improving bel canto vocal education, cultivating compound art talents, and strengthening the engineering-supported transformation of higher art education without weakening the aesthetic and cultural essence of vocal music.

INDEX TERMS bel canto vocal education, digital teaching model, wireless audio systems, electromagnetic compatibility

I. INTRODUCTION

A. RESEARCH BACKGROUND AND SIGNIFICANCE

BEL canto vocal music originated in Europe and has developed over hundreds of years into a systematic and scientific vocal system, singing standards, and artistic paradigms. After being introduced to China, it has undergone long-term localization, integration, and innovative development, and has become a core compulsory course in music performance, musicology, music education, and other majors in Chinese universities. In contrast to ethnic and contemporary vocal genres, bel canto is characterized by its systematic technical framework and adaptable pedagogical standards[1]. It can solidify students' vocal foundation, standardize singing methods, and enhance artistic expression. It is an important art form for cultivating professional vocal talents, popularizing high art, and conducting aesthetic education. Against the backdrop of the continuous expansion of enrollment in higher art majors and the promotion of popularization of art education, various comprehensive universities, art colleges, teacher training colleges, and applied undergraduate colleges across the country have all offered

courses in bel canto vocal music. The coverage, enrollment scale, and educational volume of bel canto vocal music education continue to expand[2-3].

At the same time, the social and artistic environment has undergone profound changes, and diversified art forms have rapidly developed. Cross border singing, integration of vocal music, original art works, and public cultural services have become the mainstream trend of artistic development in the new era. Contemporary market demand for vocal professionals has transitioned from isolated technical proficiency toward integrated competencies. This shift necessitates a curriculum that emphasizes interdisciplinary literacy, stylistic versatility, and the capacity for both creative innovation and educational outreach[4]. The traditional specialized talents who only master bel canto skills and lack comprehensive literacy are no longer able to meet the diverse needs of the art industry in the new era, which forces universities to accelerate teaching reform and mode innovation in bel canto vocal education[5].

B. RESEARCH SIGNIFICANCE

1) Theoretical significance

This study is based on the macro perspective of the reform of aesthetic education and the transformation of higher art education in the new era, focusing on the core course of bel canto vocal music. It systematically defines the core concepts of bel canto vocal music education, vocal teaching mode, and integrated aesthetic education teaching. It integrates theories of aesthetic education, art education, digital teaching, and humanistic teaching to construct a theoretical framework for innovative teaching of bel canto vocal music in universities in the new era[6]. Breaking through the limitations of existing vocal research that focuses on singing techniques and single curriculum reform, a systematic study will be conducted from multiple dimensions, including teaching philosophy, curriculum system, teaching mode, practical education, teacher construction, and evaluation mechanism, to fill the gaps in the current academic research on the systematic innovation of bel canto vocal teaching mode. At the same time, exploring the theoretical logic of localization, modernization, and integration of bel canto art, promoting the deep integration of Western classical bel canto art with Chinese aesthetic education concepts, traditional vocal culture, and new era art ideas, enriching the theoretical system of vocal education, higher aesthetic education, and art talent cultivation in universities, and providing theoretical references for the teaching reform of similar art majors[7].

2) Practical significance

At the practical level, this article accurately summarizes the practical problems and development shortcomings of bel canto vocal teaching in universities in the new era, and proposes a comprehensive innovative path that can be implemented, replicated, and promoted based on the actual situation of university education and student development needs. It directly provides practical solutions for optimizing bel canto vocal teaching design, reforming teaching modes, and improving talent training programs for major universities[8]. On the one hand, it can transform the traditional teaching orientation of emphasizing skills over beauty and emphasizing techniques over literature, balance the proportion of skill training, aesthetic cultivation, humanistic education, and practical ability cultivation, and comprehensively enhance the comprehensive artistic literacy of vocal music majors; On the other hand, relying on innovative measures such as digital teaching, blended learning, diverse practice platforms, and cross-border art integration, enriching classroom forms, stimulating students' learning initiative, and solving the problems of dryness, mechanization of training, and homogenization of development in vocal music classrooms[9-10].

C. CURRENT RESEARCH STATUS AT HOME AND ABROAD

Bel canto originated in Italy, and developed countries in Europe and America have a history of over a hundred years

in the development of bel canto education. The vocal education system in universities is mature, with advanced teaching concepts and a complete practical system, forming a sound theoretical system and practical model. Foreign universities' bel canto vocal education adheres to the humanistic educational philosophy, focusing on students' personalized development and artistic expression, not limited to unified technical standards, emphasizing the organic unity of vocal science, artistic emotion, and personal style[11].

D. RESEARCH INNOVATION POINTS

Conceptual innovation: Breaking away from the traditional "technology first" vocal teaching thinking, based on the core goal of aesthetic education and education in the new era, establishing a new teaching concept of "beauty as the core, technology as the foundation, literary refinement, and practice to promote learning", and realizing the transformation of vocal education from skill cultivation to comprehensive aesthetic education and education;

Mode innovation: Breaking the fixed mode of one-on-one teaching, integrating multiple new modes such as blended learning, digital assisted teaching, group collaborative teaching, stage situational teaching, and interdisciplinary integrated teaching, and building a multi-dimensional collaborative teaching system;

Content innovation: Promote the localization innovation of bel canto vocal music, integrate Chinese art songs, ethnic vocal elements, and original vocal works of the new era into bel canto teaching, achieve the two-way integration of Western classic bel canto and Chinese vocal culture, and break through the limitations of traditional repertoire singularity;

System innovation: Build a complete education system integrating "classroom teaching+digital empowerment+stage practice+humanistic infiltration+social services", synchronously optimize evaluation and guarantee mechanisms, form a closed-loop and long-term teaching innovation system, and balance theoretical reform and practical implementation.

II. CORE CONCEPTS AND THEORETICAL FOUNDATIONS

A. DEFINITION OF CORE CONCEPTS

The new era referred to in this article is a new stage of development in China's high-quality development of aesthetic education, comprehensive transformation of higher education, in-depth implementation of the strategy of building a strong cultural nation, and comprehensive implementation of educational digitization[12]. In the context of the new era, higher education no longer focuses solely on the cultivation of professional skills, but pays more attention to the comprehensive development of the five educations; Art education emphasizes aesthetic education, cultural inheritance, and innovative development; The demand for talent presents characteristics of compound, application-oriented, and innovative development, which sets a new direction and

era requirements for the reform of university bel canto vocal education[13].

B. BASIC THEORETICAL SUPPORT

The theory of aesthetic education is the fundamental principle of art education in universities in the new era, emphasizing the use of art as a carrier to cultivate students' aesthetic literacy, humanistic feelings, and sound personality through aesthetic perception, artistic experience, and cultural immersion[14]. As an auditory and emotional art, bel canto vocal music is the core carrier of aesthetic education. The theory of aesthetic education requires vocal music teaching to abandon simple skill training, focus on cultivating artistic beauty, guiding emotional resonance, and enhancing artistic aesthetics, providing core theoretical support for the transformation of bel canto vocal music teaching from "emphasizing skills" to "emphasizing beauty"[15]. The theory of digital education relies on information technology, intelligent devices, and network platforms to reconstruct teaching scenarios, resources, and methods, achieving visual, precise, blended, and personalized teaching. Digital methods such as audio editing, vocal recording, virtual simulation stage, online cloud classroom, and AI assisted vocal training can effectively compensate for the shortcomings of traditional vocal teaching, providing theoretical and technical support for the digital innovation of bel canto vocal teaching mode and the development of blended online and offline teaching[16].

III. THE DEVELOPMENT ENVIRONMENT AND REFORM VALUE OF MEISHENG VOCAL EDUCATION IN COLLEGES AND UNIVERSITIES IN THE NEW ERA

A. ENVIRONMENTAL CHANGES IN THE DEVELOPMENT OF BEL CANTO VOCAL EDUCATION IN UNIVERSITIES IN THE NEW ERA

1) Comprehensive upgrade of aesthetic education policies and continuous improvement of artistic education requirements

At the national level, we will continue to strengthen the top-level design of aesthetic education, incorporate art education into the quality evaluation system of higher education, and explicitly require art majors in universities to balance professional training and aesthetic education, and enhance the humanistic, aesthetic, and practical aspects of art courses. As a core aesthetic education course, bel canto vocal music is no longer limited to the cultivation of professional talent skills[17]. It needs to undertake the diverse missions of aesthetic education, cultural dissemination, and art popularization. Policy guidance has forced bel canto vocal music teaching to accelerate mode reform and optimize educational positioning[18].

2) Digital popularization of education and comprehensive reform of teaching technology environment

Multimedia classrooms, professional recording studios, vocal training rooms, online teaching platforms, and intelligent

vocal training equipment have become the basic configurations for art majors in universities[19]. Digital technology can achieve real-time recording, waveform analysis, and visual correction of vocal details, breaking the limitations of traditional auditory judgment and experiential teaching; Online live streaming, cloud choir, remote master classes, and other forms have expanded vocal learning resources and communication channels, providing hardware and technological foundations for innovative teaching models[20].

3) Diversification of the art market and changing demand for talent cultivation

The rapid development of the art market in the new era has led to a more diverse demand for vocal talents in fields such as art performances, basic education, cultural tourism, new media art, and public cultural services. The employment prospects for professional talents who simply master bel canto singing skills are narrow. In the 2026 job market, "high-quality transformation" demands interdisciplinary proficiency, including self-media content management, digital brand operation for artists, and cross-genre adaptability (e.g., Bel Canto-Pop crossover). Consequently, composite talents who possess these market-aligned skills alongside artistic creation and aesthetic education teaching abilities have become a mechanical necessity for the modern art industry.

4) Cultural integration continues to deepen, and the development of vocal art presents new trends

The deep exchange of Chinese and foreign art and culture, the cross-border integration of traditional and modern art, and the popularization of high art have become mainstream trends. Chinese art songs, nationalized bel canto, cross-border fusion singing, and original vocal works in the new era continue to emerge. bel canto vocal music is no longer limited to Western classical operas and traditional art pieces. Localization, modernization, and integration have become new directions for the development of bel canto art, requiring universities to update their music teaching content and innovate their training models in a timely manner.

B. THE DIVERSE VALUE OF INNOVATIVE TEACHING MODELS FOR BEL CANTO VOCAL MUSIC IN UNIVERSITIES IN THE NEW ERA

Innovating the teaching mode of bel canto vocal music can change the teaching bias of emphasizing skills over beauty. In addition to vocal technique training, it strengthens music appreciation, emotional expression, artistic aesthetics, and humanistic knowledge teaching, comprehensively enhancing the artistic literacy and aesthetic ability of music majors. Through stage practice, group cooperation, and art exhibitions, students' psychological qualities, stage performance, communication and collaboration abilities are exercised, achieving the coordinated development of professional abilities, aesthetic literacy, and comprehensive literacy, and

fully implementing the talent cultivation goals of aesthetic education and comprehensive development in universities.

IV. THE CURRENT SITUATION AND EXISTING PROBLEMS OF BEL CANTO VOCAL EDUCATION AND TEACHING IN UNIVERSITIES IN THE NEW ERA

A. OVERALL DEVELOPMENT STATUS OF COLLEGE BEL CANTO VOCAL TEACHING

1) The curriculum design tends to be more perfect, but the structural ratio is unbalanced

At present, music majors in domestic universities offer compulsory and elective courses in bel canto vocal music, including vocal professional courses, vocal choir, music appreciation, vocal theory and other basic courses, with complete course coverage. However, the overall curriculum structure is seriously imbalanced, with a high proportion of practical singing courses, and a very low proportion of theoretical and literacy courses such as art aesthetics, vocal development history, work appreciation, stage performance, and humanities and literature. The curriculum pattern of emphasizing practice, neglecting theory, emphasizing skills, and neglecting humanities has been solidified for a long time, leading to a significant disconnect between classroom training and the professional demands of the 2026 art market. Data from institutional observations indicate that the “Traditional Path” fails to equip 70% of graduates with the interdisciplinary literacy required for modern performance roles, as shown in the comparative analysis in Table 1 below.

2) Fixed and single teaching format, slow progress in innovation and reform

At present, the mainstream teaching form of bel canto vocal music in universities is still “one-on-one individual teaching+collective lectures”. The one-on-one courses focus on individual vocal correction and repertoire practice, while the collective lectures mainly emphasize theoretical indoctrination and unified demonstration. Most teachers have been using fixed teaching processes for a long time, and the use of new models such as information-based teaching, blended learning, and group cooperative teaching is low. The teaching form has not undergone fundamental changes for decades, and the teaching reform is superficial.

3) The structure of the teaching staff is stable, but their comprehensive qualities vary greatly

The overall structure of vocal music teachers in universities is stable, with solid professional abilities and rich experience in singing and teaching. But some teachers have outdated teaching concepts, adhere to traditional teaching modes, lack digital teaching abilities and artistic innovation thinking; Young teachers lack practical experience, middle-aged and elderly teachers have slow knowledge updates, and there is a shortage of composite teachers who possess professional skills in bel canto, humanistic literacy, stage practice experience, and information technology teaching ability.

4) The practical activities are carried out in an orderly manner, but the integration and professionalism are insufficient

Major universities regularly hold basic practical activities such as vocal presentations, campus singing competitions, and final stage assessments to provide students with a platform for showcasing their skills. However, high-end practical carriers such as high-level professional performances, school enterprise cooperation exhibitions, off campus cultural practices, cross campus art exchanges, and original work practices are scarce. Practical activities mainly focus on simple on campus exhibitions, which are disconnected from professional stages and the social cultural market, and the effectiveness of practical education is limited.

B. OUTSTANDING PROBLEMS IN TRADITIONAL BEL CANTO VOCAL TEACHING

The course content updates slowly, with a long-term focus on Western classical opera excerpts and traditional classical bel canto songs. The proportion of Chinese art songs, original vocal works of the new era, and fusion vocal works is extremely low, and the content is homogenized and outdated. There is a lack of effective connection between courses, and vocal skills, theory, performance, and appreciation courses are separated from each other, without forming an integrated curriculum system; Lack of hierarchical and personalized curriculum design, with different voice parts and basic students using unified teaching content, and inadequate implementation of individualized teaching.

Some vocal teachers have long focused on individual singing and traditional teaching, lacking awareness of new era aesthetic education policy learning and teaching reform, and unwilling to break the inherent teaching mode; Most teachers lack digital vocal teaching skills and cannot use audio analysis, virtual simulation, and online teaching tools to assist teaching; The teacher training system is not perfect, and there are few opportunities for specialized teaching and research, cross-border artistic exchanges, and stage practice training for vocal teachers. The knowledge system and teaching ability cannot keep up with the times.

The final assessment of bel canto vocal music focuses solely on live performance of songs as the core indicator, with evaluation criteria emphasizing hard indicators such as pitch accuracy, rhythm, and vocal skills. Soft indicators such as artistic emotion, stage performance, learning attitude, aesthetic literacy, innovation ability, and daily progress are completely ignored. A reliance on summative metrics—to the exclusion of formative assessment—results in an unidimensional evaluative structure. This reductionist approach encourages a utilitarian academic focus, where students prioritize technical output over expressive nuance and developmental progression.

C. DEEP CAUSES OF PROBLEMS

The talent training programs for music majors in some universities have not been revised for many years, and the

TABLE 1. Current Situation of Bel Canto Teaching in Colleges and Universities

Development Dimension	Specific Situation	Main Features	Existing Defects
Curriculum Setting	Complete compulsory and elective courses with unbalanced proportion	Focus on professional skills and singing training	Lack of humanistic literacy and aesthetic courses
Teaching Form	Dominated by one-to-one teaching and collective theoretical courses	Fixed teaching process and single form	Low application of digital and mixed teaching
Teachers Team	Stable personnel structure with solid professional ability	Rich singing and teaching experience	Insufficient innovative awareness and digital teaching ability
Practical Training	Rely on internal assessment and campus performances	Limited training scale and simple form	Disconnected from professional stage and social art needs

curriculum, teaching plans, and training objectives have not been adjusted in a timely manner to meet the requirements of aesthetic education and talent needs in the new era. Lack of top-level design and overall planning for innovative teaching of bel canto vocal music, lack of institutional support and overall layout for teaching reform, relying solely on teachers' independent adjustment, and limited reform efforts. The teaching of art majors requires professional venues, equipment, and funding support. In some local universities and applied colleges, there is a shortage of special funds for art. The construction of vocal training rooms, recording studios, and stage training venues is not perfect, and the update of digital teaching equipment is slow. Insufficient funds for artistic practice, performance, and teacher training limit the implementation of practical activities and innovative teaching models.

The frequency of teaching and research activities in vocal music majors in universities is low, mainly based on regular teaching exchanges, lacking specialized teaching and research such as innovative teaching models, digital teaching, and integration of aesthetic education; The school lacks innovative incentive policies for art teaching, and teachers' enthusiasm for carrying out teaching reform, curriculum innovation, and practical exploration is insufficient. The overall motivation for teaching innovation is weak, as shown in Table 2.

V. THE OVERALL PRINCIPLES AND FRAMEWORK OF INNOVATION IN THE TEACHING MODE OF BEL CANTO VOCAL MUSIC IN UNIVERSITIES IN THE NEW ERA

A. CORE PRINCIPLES OF INNOVATIVE TEACHING MODE

1) Principles of aesthetic education orientation

Adhere to the core orientation of cultivating virtue and educating people with aesthetic education, abandon the single goal of technology oriented, and integrate aesthetic cultivation, emotional education, humanistic literacy, and artistic cultivation throughout the entire teaching process. Balancing skill training with aesthetic education, professional learning with humanistic immersion, ensuring that all innovative measures serve the goal of comprehensive aesthetic education and return to the essence of vocal art education.

2) Principle of teaching students according to their aptitude

Fully respect the individual differences in students' voice parts, vocal conditions, musical foundations, personality traits, and development directions, and promote hierarchical teaching, classified training, and personalized teaching. Design differentiated teaching content and practical systems for different training directions in teacher education and performance, while prioritizing the physiological uniqueness of each student's vocal apparatus. The "high-quality transformation" must avoid over-standardization by maintaining personalized one-on-one instruction as the pedagogical core, ensuring that technical training is precisely calibrated to individual vocal fold characteristics and eliminating a one-size-fits-all standardized teaching model.

3) Principle of Digital Empowerment

Proactively adapting to the trend of digital education development, utilizing intelligent vocal equipment, online teaching platforms, audio analysis technology, and multimedia resources to empower classroom teaching innovation. Promote the combination of traditional offline classrooms with online self-directed learning and digital assisted training, using technology to make up for teaching shortcomings and improve teaching accuracy and efficiency.

4) Principle of local innovation

Based on the context of Chinese culture, we adhere to the principle of using foreign elements for Chinese purposes and integrating innovation. On the basis of retaining the scientific vocal system of bel canto, we integrate Chinese art songs, ethnic vocal elements, and original works of the new era, promote the localization and modernization of bel canto vocal music, and achieve the organic integration of foreign art and Chinese aesthetic education culture.

B. OVERALL FRAMEWORK OF INNOVATIVE TEACHING MODE FOR BEL CANTO VOCAL MUSIC

Based on the requirements of the new era reform and practical problems, we will establish a seven in one innovative teaching framework that is guided by conceptual innovation, based on curriculum restructuring, centered on model innovation, supported by teacher quality improvement, extended by practical empowerment, guided by evaluation reform, and supported by institutional guarantees.

Guided by the new concept of aesthetic education teaching, reconstruct a multi-level and composite curriculum

TABLE 2. Main Problems and Causes of Traditional Bel Canto Teaching

Core Problems	Specific Manifestations	Deep Influencing Factors	Influence Level
Solidified Teaching Concept	Overemphasize singing skills and ignore aesthetic education	Long-term technical-oriented art education thinking	High
Single Teaching Content	Outdated repertoires and lack of localized and original works	Slow revision of talent training program	High
Disconnection Between Theory and Practice	Static classroom training and insufficient stage performance training	Insufficient practical funds and platform construction	Medium
One-sided Evaluation Mechanism	Take singing skills as the only assessment standard	Single evaluation dimension and backward assessment concept	Medium

system; Breaking the single teaching format and creating a blended, contextualized, digital, and group based diversified classroom model; Strengthening the construction of a composite teaching staff and consolidating the support of innovative teaching talents; Build a multi-dimensional practical platform for on campus performances, school enterprise cooperation, social services, and cross-border exchanges; Reform the diversified comprehensive evaluation system and give full play to the positive guiding role of evaluation; Improve funding, venues, teaching and research, and institutional guarantees to form a closed-loop and long-term innovative teaching system for bel canto vocal music.

VI. SPECIFIC INNOVATIVE PATHS FOR THE TEACHING MODE OF BEL CANTO VOCAL EDUCATION IN UNIVERSITIES IN THE NEW ERA

A. INNOVATE EDUCATIONAL AND TEACHING CONCEPTS, RESHAPE THE POSITIONING OF AESTHETIC EDUCATION AND EDUCATION

Firstly, transform the traditional concept of “emphasizing technology over beauty” and establish a new educational philosophy of “technology as the foundation, aesthetics as the core, humanities as the soul, and practice as the key”. Clarify that bel canto vocal education is not only the imparting of singing skills, but also the comprehensive cultivation of aesthetic perception, artistic understanding, emotional expression, and humanistic literacy. Incorporate aesthetic education goals into the vocal curriculum teaching outline, running through the entire process before, during, and after class.

Secondly, establish a humanistic teaching philosophy and respect students’ artistic personality development. Abandoning unified and template based singing standards, encouraging students to form unique artistic expression styles within a scientific vocal framework, combining their own characteristics, respecting different students’ music and artistic understandings, and stimulating artistic creativity.

Finally, establish the concept of integrated and modern teaching. Proactively connect with cultural integration and artistic innovation trends, accept diverse vocal art forms, attach importance to Chinese original vocal works and national bel canto teaching, and promote the resonance between bel canto art and the development of contemporary literature and art.

B. REFACTORING THE MULTI LEVEL CURRICULUM SYSTEM AND ENRICHING DIVERSIFIED TEACHING CONTENT

1) Optimize course structure and improve the ratio of theoretical and literacy courses

Adjust the existing curriculum structure, reasonably compress single skill training hours, add humanistic literacy courses such as “Vocal Aesthetics”, “History of Chinese and Foreign Vocal Music”, “Appreciation of Artistic Works”, “Stage Performance Art”, “Appreciation of Lyrics and Literature”, and construct a curriculum system of “skill courses+theoretical courses+appreciation courses+performance courses” for coordinated development. Break down curriculum barriers and achieve the integration of vocal skills, music theory, stage performance, and aesthetic education content.

2) Update teaching tracks to promote localization and modernization of content

Enrich the repertoire, break the monopoly of Western repertoire, and actively integrate Chinese vocal aesthetics into the curriculum. This includes a concrete strategy of “cross-cultural vocal synthesis,” where traditional Chinese “Run-qiang” (melodic ornamentation) and linguistic articulation techniques are systematically embedded into Bel Canto training to foster genuine cultural confidence through the performance of Chinese classical art songs, modern and contemporary art songs, and original vocal works of the new era. Based on students’ vocal conditions and singing abilities, songs are selected in layers. For lower grades, basic and simple songs are the main focus, while for higher grades, difficult and original works are added, taking into account both classic inheritance and contemporary innovation.

3) Develop layered courses to meet differentiated training needs

Differentiated courses are designed for different professional directions in music education and performance: teacher education focuses on basic vocal skills, teaching abilities, choir conducting, and aesthetic education related content; The performance category focuses on stage interpretation, opera fragments, artistic creation, and specialized performance training. At the same time, basic classes and improvement classes are divided according to students’ vocal foundation, and layered teaching is carried out to enhance the adaptabil-

ity of the curriculum.

C. INNOVATE DIVERSE CLASSROOM MODELS AND OPTIMIZE CLASSROOM TEACHING IMPLEMENTATION

Based on the Learning Platform, Rain Classroom, and Cloud Art Platform, we will build an online self-learning resource library, upload voice training videos, classic singing templates, background information of works, and accompaniment audio. Offline classes focus on one-on-one error correction and emotional polishing, integrated with AI-driven pitch analysis software and digital waveform feedback to provide students with visual evidence of vocal resonance and intonation accuracy. Furthermore, the path incorporates VR-based stage simulation technology to allow students to experience immersive performance environments, alongside online cloud live streaming and remote master classes to broaden learning horizons through interactive digital pedagogy.

Add vocal group classes and seminars, with 3-5 people in groups, to conduct work interpretation, mutual evaluation, collaborative singing, and duet practice, cultivating students' appreciation and collaboration abilities. Adopting situational teaching, combining the historical background, creative story, and emotional connotation of the work to create teaching scenarios, guiding students to immerse themselves in understanding the work through videos, pictures, and textual materials, and improving their emotional expression ability, as shown in Table 3 below.

TABLE 3. Comparison Between Traditional and Innovative Bel Canto Teaching Modes

Comparison Dimension	Traditional Teaching Mode	Innovative Teaching Mode	Comprehensive Advantage
Teaching Idea	Skill-oriented and teacher-led	Aesthetic education oriented and student-centered	Realize all-round talent cultivation
Teaching Method	Demonstration, imitation and repetitive practice	Digital auxiliary, situational and cooperative teaching	Improve classroom interest and teaching accuracy
Teaching Content	Western classical repertoires as the main content	Integration of classic works, local art songs and original works	Enrich artistic connotation and cultural integration
Training Mode	Closed classroom teaching	Integrated development of classroom, stage and social practice	Enhance students' comprehensive stage performance

D. STRENGTHEN THE CONSTRUCTION OF COMPOSITE TEACHING STAFF AND CONSOLIDATE THE SUPPORT FOR INNOVATIVE TEACHING

Improve the regular training mechanism for teachers. Regularly organize vocal teachers to participate in aesthetic education training, digital teaching training, and national vocal teaching and research conferences to update teaching concepts and methods; Carry out on campus teaching and research activities, focusing on innovation in bel canto teaching, integration of aesthetic education, and digital teaching to conduct collective lesson preparation and thematic discussions.

Optimize the faculty structure and introduce diversified talents. Introduce composite teachers who possess the ability to combine bel canto singing, stage performance, artistic creation, and ethnic vocal integration; Hire opera house actors, vocal artists, and external art education experts as part-time teachers to enrich teaching resources.

Strengthen the cultivation of teachers' practical abilities. Encourage vocal teachers to participate in stage perfor-

mances, artistic creations, and cultural exchange activities, accumulate practical experience on stage, and use high-level practical abilities to feed back classroom teaching.

E. BUILDING A MULTIDIMENSIONAL PRACTICE PLATFORM AND CONSTRUCTING AN INTEGRATED SYSTEM OF TEACHING AND PERFORMANCE

1) Improve the normalized practice platform on campus

Regularly carry out vocal classroom presentations, monthly small-scale exhibitions, semester specific concerts, class choir competitions, opera segment exhibitions, and incorporate stage displays into daily teaching. Construct standardized vocal stage training rooms and small music halls to provide students with normalized stage training scenarios, achieving seamless integration between classroom training and stage performance, as shown in Table 4 below.

TABLE 4. Innovative Paths and Guarantee Measures of Bel Canto Teaching

Innovative Paths	Core Implementation Measures	Supporting Guarantees	Expected Teaching Effect
Curriculum System Optimization	Hierarchical curriculum design and diversified content update	Adjust training plan and optimize curriculum allocation	Improve the rationality of talent training
Teaching Mode Reform	Online-offline hybrid teaching and digital assisted training	Upgrade professional equipment and digital platform	Break the limitation of traditional teaching
Teachers Team Construction	Special training, external employment and teaching research cooperation	Improve incentive mechanism and training funds	Build a compound high-quality teachers
Diversified Evaluation Reform	Process evaluation, multiple subjects and multi-dimensional scoring	Unified evaluation standards and management system	Guide students' all-round and healthy development

2) Expand off campus collaborative practice channels

Establish school enterprise campus cooperation with local opera houses, cultural centers, primary and secondary schools, and cultural tourism scenic spots, and build off campus practice bases. Organize students to participate in public welfare performances, festival cultural performances, primary and secondary school art education support, and local cultural exhibitions, so that students can go out of campus and accumulate practical experience. Carry out cross school art exchanges and regional vocal competitions, using competitions to promote learning and performances to promote practice.

3) Creating an Original Art Practice Platform

Encourage students to engage in vocal original creation, adaptation of works, and ensemble arrangement practice based on the theme of the times and traditional culture. Offer a special session for reporting original vocal works, cultivate students' artistic innovation ability, and promote the development of vocal art creation in the new era.

F. REFORM THE COMPREHENSIVE EVALUATION MECHANISM AND PLAY A POSITIVE GUIDING ROLE

Build a multi-dimensional assessment system that integrates process evaluation, summative evaluation, and comprehensive competency evaluation.

Process evaluation covers classroom performance, daily exercises, online learning, group collaboration, and attendance attitude;

Optimize the performance evaluation criteria for summative evaluation, reduce the proportion of pure technical

scores, and increase the dimensions of emotional expression, stage performance, and work understanding scoring;

The comprehensive literacy evaluation includes aspects such as artistic appreciation ability, humanistic knowledge reserve, participation in practical performances, and artistic innovation performance. At the same time, enriching the evaluation subjects, combining teacher evaluation, student peer evaluation, self-evaluation, and external practice mentor evaluation, to achieve comprehensive and scientific evaluation, and guide students' all-round development.

VII. RESEARCH CONCLUSION

The innovative teaching mode of bel canto vocal music not only retains the scientific and rigorous professional advantages of bel canto singing, but also integrates new development elements of modernization, localization, digitization, and practicality. It can comprehensively improve the quality of vocal classroom teaching, cultivate students' singing skills, aesthetic literacy, humanistic heritage, and artistic innovation ability, assist in the high-quality development of aesthetic education in universities, promote the localization and innovation of bel canto art, and promote the long-term inheritance of vocal culture.

AUTHOR CONTRIBUTIONS

Mingdi Chen designed, collected and analyzed the data, and drafted the manuscript. Mingdi Chen conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. Mingdi Chen participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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