

New Dimensions in Undergraduate Music Talent Development at Regular Universities in the Digital-Intelligent Era

-- Talent Development for the Digital Music Industry in the Age of Intelligence

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Abstract

The emergence of the digital-intelligent era has completely transformed the talent demand environment of the music industry, and interdisciplinary competencies that are a combination of music and technology have become the fundamental competitiveness in the labor market. Nonetheless, undergraduate music programs at standard universities tend to be behind in terms of philosophies of talent development, curriculum structure and practical teaching mechanisms, which fail to address the practical needs of industrial change. The paper starts with an analysis of the talent requirements of the digital music industry, looks at the structural contradictions between existing training programs and the needs of the industry, and, based on the National Standards of Undergraduate Music Program Teaching Quality in Regular Institutions of Higher Education, discusses innovative models of undergraduate music talent development. It then suggests four additional dimensions of music talent development in regular universities: scientific reconfiguration of training goals, arts-science integration of the system of curricula, industry-education partnership in practice-based teaching, and dynamic adjustment of evaluation systems. Based on the industry demand, the paper also presents innovative designs of project-based practical teaching and creation of specialized clusters of curriculum, providing a case study to aid the quality development of digital music industry talent development.

Keywords

Digital-intelligent era, digital music industry, project-based teaching, curriculum cluster development.

1. Introduction

The music industry is currently in the digital-intelligent era, which is propelled by the wave of digitization and transforms traditional business models into digital, intelligent, and integrated forms, with big data, artificial intelligence, virtual reality, and digital audio production as the key vectors. The talent demand logic in the music industry is shifting due to the spread of digital music platforms, the cycle of smart music creation tools, the emergence of immersive music performances, and the cross-border integration of music cultural creativity and digital media. In addition, under the impact of the policy of Double Reduction and the emergence of AIGC, the demand of traditional single-skilled music workers has decreased drastically, whereas the compound talents possessing both artistic literacy and the skills to implement digital-intelligent technologies, practical innovation skills, and industrial flexibility have become the main demand on the market.

Undergraduate music programs at regular universities are the main front of developing music talent, and their core mission is to provide music professionals. The National Standards for

Undergraduate Music Program Teaching Quality in Regular Institutions of Higher Education (hereinafter referred to as the National Standards) clearly demand that music talent development must be responsive to social development needs, enhance practical skills and innovative drive, and encourage a high level of integration between professional education and industry practice[3]. Nonetheless, undergraduate music schools in regular colleges tend to have old-fashioned philosophies of talent development, slow curriculum development, and poor teaching systems in practice, which require immediate attention.

2. Four New Dimensions for Undergraduate Music Talent Development in the Digital-Intelligent Era

The digital-intelligent era of music talent development is not just a technological overlay but a systemic change that is directed by industry demand and informed by the National Standards. To deal with the current dilemmas, it is necessary to clarify the connotations of the National Standards[9].

At present, digital-intelligent technologies are redefining the new landscape of the music industry, and three key features of talent demand emerge: first, the compound competence to combine arts and science, which requires not only traditional artistic skills (performance, creation, appreciation) but also digital audio production, AI arrangement, virtual performance design, and music new media operations; second, industry-oriented practical skills, allowing quick adaptation to roles in music production, performance operations, copyright management, and digital communication, with project implementation, market engagement, and cross-sector collaboration skills; third, dynamic and iterative innovation skills, as digital-intelligent technologies are still evolving, requiring sustainable development capacities in technological learning, artistic innovation, and business model adaptation. The National Standards highlight that undergraduate music programs must follow the basic mission of promoting virtue by means of education, develop a system of cultivation featuring solid foundations, strong practice, focus on innovation, and wide adaptability, and clearly necessitate alignment with industry trends, optimization of curriculum structures, enhancement of industry-education integration, and social adaptability. This offers a policy foundation and normative direction to regular universities to disrupt the conventional training paradigm, incorporate digital-intelligent aspects, and align with industry requirements. Thus, universities need to go back to the core of talent development, adopting the scientific reconfiguration of training goals, arts-science integration of the curriculum, industry-education partnership in practical teaching, and dynamic adjustment of assessment mechanisms as new dimensions, in order to resonate with talent development, the digital-intelligent era, industry demand, and the National Standards.[5]

2.1. Scientific Reconfiguration of Training Objectives: From "Single Skill" to "Arts-Science Compound"

The educational goals are the fundamental framework of talent development. The Ministry of Education, in its 2025 undergraduate program catalog update, reported that universities in the country have been successively introducing interdisciplinary programs like the music and technology combination known as Music Technology. Interdisciplinary competence with a combination of music and technology is emerging as the core competitiveness in the job market because the digital-intelligent age is radically transforming the landscape of talent demand in the music industry[7]. To construct a compound training goal based on artistic core, technological support, industrial adaptability, and innovation leadership, it is essential to break out of the traditional aims of performance-oriented or theory-oriented training in this era, and closely follow the directions of technological development provided by the cultural and tourism technology innovation plan, including: cloud exhibitions, cloud entertainment, online

performances, digital art, immersive performing arts. [11] In particular, the training goals of undergraduate music programs at regular universities are to be placed as follows:

To develop well-rounded talents with moral, intellectual, physical, aesthetic and labor education, who have solid musical expertise, are proficient in digital-intelligent music production, digital communication, industrial operations, and related technologies, and are flexible to work in the fields of digital music creation, immersive performance, music new media, and digital music education, as well as demonstrating practical ability, innovative spirit, and professional competence. This goal emphasizes three key changes: The components of competencies can be further specified as follows: core artistic competencies should preserve and reinforce the traditional foundational courses (vocal performance, instrumental performance, harmony, Chinese and foreign music history) and add training in artistic aesthetics and creative expression to ensure that students retain artistic judgment when using technology; digital technology competencies, according to the Talent Demand Analysis of the Digital Creative Industry, should equip students with proficiency in software and engines such as Unity, Unreal Engine (UE), Maya, Grasshopper, and V-Ray, which have become high-frequency keywords in industry job requirements; and professional practice competencies, which are developed through university-industry collaboration that transforms course content into project-based learning, systematizes the learning process, and professionalizes competency development-as exemplified by the "Digital-Intelligent Music Comprehensive Training" course at Guangdong Vocational and Technical University of Industry and Commerce, which invites industry mentors to participate in project guidance, implementation, and assessment, reflecting that students can more quickly build portfolios and gain industry experience through real-world projects.

The change in service orientation is towards the digital music industry and various cultural contexts; traditionally, graduates of music programs primarily worked in song and dance troupes, performance companies, and cultural publicity jobs, but in the digital-intelligent era, the service orientation should be extended to the following areas: the digital music industry, including online music platforms (such as QQ Music and NetEase Cloud Music), digital distribution companies, and streaming services, which are involved in music content production, copyright operations, and data analysis; the immersive entertainment industry, such as game and film production organizations, engaged in game score design, film soundtrack production, and interactive media design; the school education sector, covering digital teaching positions

The change in the orientation of development is no longer towards the cultivation of skill-oriented talents, but towards the cultivation of innovative, adaptable, and sustainably developing talents; the Planning Outline of Building a Strong Education Nation (202435) explicitly mentions the necessity to introduce the national digital education strategy, follow an application-oriented and governance-based approach, facilitate integration, intelligence, and internationalization, develop new kinds of digital educational resources[4].

2.2. Arts-Science Integration in the Curriculum System: From "Fragmented and Segregated" to "Cluster-Optimized"

Talent development is centered on the curriculum system. The key route of curriculum change in the digital-intelligent era is arts-science integration. One has to escape the old dilemma of focusing on arts and not science and disjointed module structure and, based on the principle of core arts courses as the base, digital-intelligent technology courses as support, industry practice courses as extension, construct a progressive cluster system of curriculum with a foundation layer, an integration layer, and an application layer, thus attaining the parallel development of artistic literacy and technological competence.[2][8]

First Curriculum Cluster: Foundation Layer - Arts Foundation Courses. The main arts curriculum cluster entrenches the professional base. In conventional music discipline curricula, music theory and performance skills tend to be central; these core arts courses should be maintained and optimized, including vocal and instrumental performance, choral conducting, harmony, musical form, music history and music aesthetics, to reinforce core competencies of students in performance, creation and appreciation, and to retain the artistic nature of the music discipline. Other general education classes like artistic creativity, cross-cultural communication, and marketing of arts are also incorporated to develop a better humanistic background and industry literacy among students.

Second Curriculum Cluster: Integration Layer-Arts-Science Integration Technology Courses. The arts-science integration technology curriculum cluster is in line with the needs of the digital industry, and it integrates digital-intelligent technologies into music majors thoroughly. Additional courses are needed, including digital music production, AI music creation, audio editing and mixing, virtual reality (VR/AR) music applications, music new media technology, and digital music copyright management, and technology must be used to aid artistic creation, not just as technical training. As an example, harmony and musical form courses can include AI arrangement practices, and music creation courses can include digital audio production.

Third Curriculum Cluster: Application Layer - Industry Practice Courses. The industry practice curriculum cluster is in line with the job requirements in the digital music industry and relates to real industrial situations. Such courses as music project planning, immersive performance design, music new media operations, music cultural creativity development, and digital grassroots music education must be provided so that students can learn the logic of how music industries operate, the rules of the market, and job skills in real-life settings, thus ensuring a perfect fit between course content and industry demands. With a platform-based curriculum architecture, including shared foundation, differentiated mid-level, and cross-elective high-level modules, students are able to select course tracks according to job profiles and, during their last semester, join industry workshops to work on real projects.

By organically combining these three curriculum clusters, the walls between arts and technology, and theory and practice are dismantled, creating a progressive foundation-integration-application curriculum framework that achieves the essence of arts-science integration.

2.3. Industry Collaboration in Practical Teaching: From "Campus-Enclosed" to "Industry-Linked"

The essence of connecting arts education with industrial practice and one of the most important links in evaluating the quality of music talent cultivation in the digital-intelligent age is practical teaching. The conventional music practical instruction has been limited to closed campus-based systems, like on-campus performances, simulated scenario training, and virtual project exercises, which have led to a disconnect between the practical content and the actual industry requirements, a disconnect between the practice scenarios and the real working conditions, and a disconnect between the practical competencies and the employment standards in the market. This results in graduates being unable to easily adjust to work demands within the digital music sector and new media cultural industries and are characterized by slow start-up, poor adaptability, and weak innovation. In the digital-intelligent era, music practical teaching should leave the closed-loop of campuses, ground itself in the entire-chain requirements of the digital music industry, and construct an integrated system of practical teaching that is marked by deep industry-education partnership, real project-based learning, and industry-authentic talent development, allowing students to develop their skills in actual industrial settings and fully improve their practical operational skills, cross-border innovation skills, and core job adaptability.

Regular universities must actively dismantle campus-locality and university-enterprise boundaries, developing a practical teaching philosophy of "open education and industry alignment" with key focus areas on digital music, new media culture, cultural tourism integration, etc., and building long-term, stable, deep-binding, mutually beneficial partnerships with major digital music companies, mainstream new media enterprises, professional cultural and creative enterprises, and public service units in cultural tourism grassroots, moving beyond superficial cooperation to talent cultivation, innovation, and development[12]. On the one hand, they should co-build tangible practical teaching carriers, jointly establish off-campus practical teaching bases, industry joint studios, digital-intelligent music innovation centers, and other physical platforms, clearly dividing responsibilities and rights between universities and enterprises about venue provision, equipment investment, faculty allocation, and project introduction, thereby achieving complementary integration of on-campus teaching resources and high-quality industry resources; on the other hand, they should comprehensively introduce core industry elements, embedding senior industry faculty, real industry projects, technical standards, and job norms simultaneously into the practical teaching system, promoting seamless alignment and resonant synchronization between "university talent development standards" and "industry employment standards". For instance, working with digital music platforms can design practice scenarios for music production, short video scoring, new media account operation, fan community management, etc., enabling students to engage in content production on the platforms; working with immersive performance companies and cultural tourism performing arts enterprises can provide training in stage digital design, virtual performance choreography, live performance execution, etc., exposing students to the industry's workflow standards and market needs; working with grassroots cultural centres and community service centres can carry out music cultural outreach and grassroots aesthetic education activities, bridging the last mile of artistic practice in serving society. By integrating industry and education, the current "armchair strategizing" in practical teaching can be fundamentally changed, so that students can understand industry dynamics and learn job skills on the industry frontline.

(1) Full Implementation of Project-Based Practical Teaching Models

The fundamental lever of the implementation of industry-education collaboration is project-based practical teaching. It uses real industry projects as the core vehicle, and it discards the disjointed and simplistic shortcomings of conventional practical teaching, building an integrated teaching model that is defined by being project-driven, process-oriented, team-based in collaboration, and tangible in results. Real industry projects like digital music creation, short-video music production, campus immersive new media concerts, grassroots music cultural services, and cultural tourism music IP development are all introduced in practical teaching, converting practical teaching tasks into full-cycle project work tasks, attaining the goals of teaching process projectization and project content industrialization. Concerning the teaching organization, a two-mentor system of on-campus professional instructors + industry mentors is implemented: on-campus instructors are concerned with artistic creation and professional theoretical instructions to make sure that the artistic quality of practical teaching, whereas industry mentors are concerned with industry standards, technical applications, and market operations to ensure that projects meet the needs of the industry. To complete the entire workflow, including project planning, artistic creation, technical implementation, execution and promotion, and market feedback, students create cross-disciplinary project teams, thus improving communication, management, and problem-solving abilities through teamwork. Teaching based on projects entirely disrupts the traditional course boundaries and incorporates core competencies like artistic creation, application of digital-intelligent technology, project operations management, and marketing promotion so profoundly that students learn by doing, reflect by learning, and create by thinking, turning into not passive

receivers of knowledge but active project completers and creators, which significantly increases their industrial adaptability and job competitiveness.

(2) Building a Tiered and Diversified Practical Teaching Platform

It should be built on a three-tier interconnected practical platform, which includes the following components: on-campus foundational practice-university-industry internship practice - social comprehensive practice, which constitutes a practical teaching system that spans the entire academic duration, links to the entire industry chain and accommodates all dimensions of competency, thus addressing the practical needs of students at various levels. The on-campus practice platform aims to consolidate basic skills, with emphasis placed on constructing hardware facilities, such as digital music production laboratories, virtual performance experience rooms, music new media studios, and recording training classrooms, equipped with professional audio equipment, AI music creation software, and VR/AR performance devices, to conduct basic skills training, course practice assignments, and small-scale creative projects, respectively, to solidify the foundations of students in digital-intelligent technology application and artistic practice; the university-industry practice platform is focused on connecting with job competencies, relying on university-industry cooperation bases to provide internships, project-based training, and cross These three platforms are interrelated and gradually overlaid to create a viable closed loop of "foundational training-job-based practical training - social practice" that comprehensively develops practical skills, innovative skills, and social adaptability in students.

2.4. Dynamic Adaptation of Evaluation Mechanisms: From "Single" to "Diverse"

Evaluation mechanisms are the baton and yardstick of talent development, which directly define the direction of teaching reform and quality of talent cultivation[6]. The conventional approach to music talent assessment has been a single summative model where final examination scores are given priority over day-to-day learning activities, professional skill testing is prioritized over holistic competency development and theoretical knowledge acquisition is prioritized over practical application of skills. This leads to limited content in evaluation, strict evaluation procedures and one subject of evaluation, which makes it hard to fully evaluate the core competencies of compound music talents in the digital-intelligent era. To assess music talent in this new era, it is necessary to abandon traditional limitations, ground it in the purpose of developing compound, innovative, and application-based talents, and develop a dynamically adaptive assessment system that integrates process-oriented and comprehensive assessment, on-campus and industry assessment, and competency and literacy assessment, with complete-dimensional coverage.[1]

(1) Process-Oriented Evaluation Methods

To overcome the conventional assessment constraints of focusing on skills rather than literacy and theory over practice, and focused on the core competency requirements of music talents in the digital-intelligent era, a five-in-one evaluation content system must be designed to include the following elements: artistic literacy, technological application, practical ability, innovative spirit, and professional competence, which will ensure the accurate alignment between evaluation content, training goals, and industry needs[10]. The artistic literacy dimension emphasizes testing traditional professional foundations (vocal performance, instrumental performance, and music theory) to preserve the artistic nature of music talents; the technological application dimension includes tests of digital-intelligent skills (digital music production, AI technology application, virtual performance design, and new media operations) to meet the innovation-driven development needs of the digital-intelligent era; the practical ability dimension includes tests of project practice, job-based training, and social services, which test the operational skills and job adaptability of students; the professional This diversified evaluation material not only continues the artistic tradition of the music discipline

but also corresponds to the needs of the digital industry development and evaluates the overall competencies of students comprehensively. Leaving the summative assessment disadvantages of one exam makes the grade and one paper makes the outcome, a process-oriented approach to evaluation with continuous tracking and dynamic feedback must be adopted, infiltrating the entire teaching cycle and the entire learning process. Course assignments, classroom interactions, performance of practical training, group discussions, and skill exercises are included into the evaluation system during daily teaching to capture the learning status and competency development paths of students in real-time; in project-based practical teaching, the main evaluation criteria are the quality of project completion, contributions to team collaboration, progress in project execution, and industry feedback, and detailed evaluation indicators are used to evaluate each stage of project planning, creation, execution, and promotion; in industry-education practice, the entire process of student This process-based assessment disrupts the exam-based dilemma of cramming at finals, emphasizes the growth paths of students, gives timely feedback on learning problems, and maximizes teaching methods, thus fulfilling the aim of promoting learning, teaching, and reform through evaluation.

(2) Diversification of Evaluation Subjects

To overcome the constraint of teacher as the only evaluation subject, a multi-participant evaluation system must be developed that involves on-campus teachers, industry mentors, industry experts, practice institutions, peer evaluation and self-reflection, to achieve comprehensive evaluation perspectives and more objective outcomes, with on-campus teachers being concerned with the assessment of professional theory, artistic literacy, and classroom performance; industry mentors and industry experts being concerned with the This multi-subject evaluation system is effective in combining the on-campus academic evaluation with the industry market evaluation so that the results of the evaluation are both educationally valid and relevant to the employment requirements in the industry thus increasing the scientific soundness and practical applicability of the evaluation.

3. Safeguard Measures for the New Dimensions of Music Talent Development in the Digital-Intelligent Era

3.1. Institutional and Mechanism Innovation: Improving the Full-Process Institutional Support System

The institutional innovation should be exploited to develop a long-term talent development reform mechanism. There are five aspects that are important, namely:

- (1) Enhance teaching management systems: update talent development plans, define implementation standards, credit recognition and assessment criteria of project-based teaching and arts-science integrated courses so that teaching reforms are highly regulated.
- (2) Enhance industry-education cooperation systems: enter into deep cooperation agreements with enterprises, define rights and responsibilities, and introduce mechanisms of the long-term introduction of industry resources, projects, and faculty, to guarantee the long-term realization of industry-education collaboration.
- (3) Improve incentive and support systems: special funds to be created to reward teaching reform and project practice, which will be given preferential treatment in faculty promotions and evaluations, thus generating interest in reform among teachers and students alike.
- (4) Implement quality monitoring: monitor the effects of teaching reform during the process, regularly evaluate, provide feedback and optimize, to ensure continuous improvement in the quality of talent development.
- (5) Investigate cross-disciplinary course certification and credit systems to integrate arts and science. To introduce new course modules, like digital music production and AI music

applications, one can refer to the example of Wuxi Taihu University exploring an interdisciplinary training direction of arts + technology, providing interdisciplinary courses that combine musicology, computer science, artificial intelligence, and other fields, or explicitly and systematically integrating teaching materials on digital music into traditional foundational courses.

3.2. Hardware Resource Guarantee: Building Digital-Intelligent Practical Teaching Facilities

Enhance teaching resources and, in comparison to the development requirements of the digital music industry, construct high-quality, digitalized, specialized, and realistic practical teaching hardware facilities. To address the requirements of arts-science integrated teaching, project-based practice, and industry training, priority should be given to the creation of core platforms, including digital music production laboratories, virtual performance training rooms, music new media studios, and recording training centers, with professional audio equipment, AI music creation software, VR/AR virtual performance devices, and new media operation terminals. Moreover, a university-industry shared resource platform must also be created to share enterprise professional equipment and industry training venues to compensate on-campus lack of hardware and offer a strong hardware base of practical teaching.

3.3. Faculty Development Guarantee: Overcoming the Bottleneck of Arts-Science Compound Teaching Competence

The most important barrier to the development of digital-intelligent music talent is faculty. Nowadays, three significant issues are encountered by music faculty members: unequal digital skills, poor application of AI technology, and lack of interdisciplinary knowledge reserves. To deal with these issues, a systematic faculty guarantee mechanism can be built based on the following factors:

(1) Develop a digital competence training system of faculty in tiers and categories. In the case of teachers whose foundational skills are less strong, training must be aimed at enhancing basic operational skills, such as audio editing, score production, intelligent instrument operation, debugging recording equipment, and online live teaching tools. The content of training should be advanced to higher levels like digital music creation, virtual reality technology application, and student practice data analysis to teachers who already have mastered basic skills. At the same time, educational concepts and new technologies training in the digital-intelligent era should take place to create a new knowledge perspective and talent perspective that would allow both teachers and students to fully comprehend the importance and value of digital-intelligent integration.

(2) Encourage the creation of a dual-qualified faculty model. Eliminate the conventional restriction of one source of university faculty and create a dual-qualified team of faculty comprising of full-time instructors in campus and industry mentors. With frontline practitioners in the digital music industry employed as adjunct faculty, the most recent technical standards and project experience can be introduced into the classroom to ensure perfect alignment between what is taught and what is practiced in the industry. The example of institutions like Guangdong Vocational and Technical University of Industry and Commerce, where industry mentors are invited to engage in all the phases of project guidance, implementation, and evaluation during the course of Digital-Intelligent Music Comprehensive Training, should be followed.

(3) Develop an inter-university digital teaching and research community. Create a cross-university online teaching and research environment, conduct online exchanges and discussions with other institutions, improve the digital capacity of faculty, and inspire internal drive to change. Through the use of generative artificial intelligence to determine the

instructional features of each teacher, discover shared problems and best practices in teaching, and finally create a knowledge graph that can be used by other teachers as a reference.

(4) Enhance faculty incentive systems. Include digital competence development in the faculty promotion and evaluation standards, create special funds to reward teaching reform and project practice, and offer policy incentives in teaching workload recognition and performance assessment of teachers who are actively involved in the digital-intelligent teaching reform.

4. Conclusion

The digital-intelligent revolution has radically transformed the music industry ecosystem and talent demand structure, posing new challenges and opportunities for innovation in undergraduate music talent development at regular universities. Aligned with the high-quality development requirements of the digital music industry and strictly following the National Standards for Undergraduate Program Teaching Quality in Regular Institutions of Higher Education, music talent development in the new era should follow the trunk of artistic essence and spread its wings to digital-intelligent transformation. The four new dimensions proposed - scientific reconfiguration of training objectives, arts-science integration of the curriculum system, industry-education collaboration in practical teaching, and dynamic adaptation of evaluation mechanisms-provide a holistic approach. By creatively applying project-based practical teaching and arts-science integrated curricula, the contradictions between traditional training models and the demands of the digital-intelligent industry can be overcome, thus facilitating the holistic transformation of music talent development from "single-skilled" to "arts-science compound", from "campus-enclosed" to "industry-collaborative", and from "static summative" to "dynamically adaptive". This will nurture high-quality music talents who not only inherit the essence of art but also master key digital-intelligent technologies, are aligned with industry needs, and have the potential for sustainable development.

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