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Research on Factors Influencing the Quality of Talent Cultivation in Music Majors in Higher Education

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Abstract — This study aims to assess the current status of music professional talent cultivation quality in universities. It seeks to integrate factors influencing the quality of music talent cultivation, including the interplay between quality indicators, cultivation mechanisms, and autonomy. A theoretical model for the quality of music talent cultivation is proposed based on a sample of 1988 students from 16 undergraduate universities with music majors in Shaanxi Province. The study utilizes mathematical statistics and SPSS for data analysis, focusing on questionnaire reliability. Confirmatory factor analysis uses AMOS24.0 software, and model fit testing is performed against established indicators. The research findings reveal that the theoretical model aligns with the measured data, meeting fitting standards. Descriptive analysis and correlation testing show positive correlations between variables. Univariate analysis of variance based on majors, ages, and regions indicates significant differences. The study highlights the positive impact of understanding influencing factors on practical efforts to enhance the quality of music talent cultivation in universities. It recommends innovative reforms, such as expanding major choices, developing personalized curricula, and adopting tech-supported teaching methods. Strengthening management systems, effective supervision, and enhancing quality standards are emphasized for improving music education and talent cultivation, fostering overall progress and reform in this field.

Index Terms — Education Talent, Music Major, Higher Education.

I. INTRODUCTION

The evolution of music majors within universities must align with the objectives of constructing first-class universities and disciplines. To meet the expanding scope of the music field and growing societal demands, universities need to formulate practical training objectives and management models to ensure training quality. Nevertheless, music majors encounter practical management challenges, encompassing insufficient evaluation indicators, issues with the teacher structure, low requirements for cultural courses, and a need to enhance the quality of certain graduate talents. Shortcomings exist in cultivating high-level talents, emphasizing the necessity for establishing distinctive evaluation standards to bolster music majors' development and talent cultivation. Given this backdrop, various universities offering music majors should innovate their professional management, elevate their teaching management standards, foster the distinctive development of music majors, and enhance the quality of talent cultivation.

II. THE STUDY

The music major in universities significantly impacts overall music education, belonging to the category of professional music education and playing a leading role in nonprofessional music education. Chinese colleges and universities attach importance to music education, set up professional and public courses, integrate into Student society, and improve the artistic atmosphere. Cultivating music professionals in universities is crucial for the overall level of music education [1].

As society's demand for music education in universities becomes more refined and diversified, the curriculum of music majors is also becoming increasingly diverse. College music education faces new challenges and reforms, and the constantly emerging new majors and diverse training programs have become the trend [2].

However, there are problems with university music majors, such as insufficient teaching staff, poor student quality, limited educational conditions, unreasonable curriculum, lack of management experience, and unclear training positioning. The rapid development of music majors in comprehensive universities requires improving music education [3]. Although higher education has begun to attach importance to music education in the reform, it has not been deeply implemented. Many universities have failed to establish a complete management mechanism for music education, lacking rigor in management, and most are in a state of disorder. In recent years, with the continuous development of teaching methods, the facilities and equipment of some universities have been greatly improved. However, with the expansion of the enrollment scale, the existing teaching facilities and equipment are still far from sufficient to meet practical needs, including necessary equipment such as multimedia equipment, piano

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rooms, and musical instruments, which will directly affect the improvement of teaching quality [4].

To improve the training of music professionals in universities, it is necessary to clarify the training objectives, strengthen horizontal communication between universities, optimize the curriculum structure, and provide employment guidance. The government should guide the classification management of music majors to optimize the positioning of development goals [5]. College music majors need to avoid copying and pasting, support their advantages, consider social needs, and expand Trans disciplinarity. Highlight practical teaching, increase the credit ratio of main courses, and develop a curriculum system that aligns with reality. Diversified development promotes talent cultivation [6]. The development of music majors in Chinese universities is facing problems, and it is necessary to improve and optimize the training mode based on the characteristics of the universities. Cultivating high-level music talents is a weakness, and innovative "learning, research, and performance" training models from abroad should be studied to establish a diversified development space and improve comprehensive quality. Explore multiple compatible training modes to promote the sustainable development of university music majors. To learn from foreign research achievements and provide a reference for teaching music majors in China [7].

Improving the quality of music education in universities requires a clear understanding and not marginalization. Give full play to its characteristics and advantages, increase investment and innovation. Social support and attention jointly promote the development of the music profession, meet social needs, and promote the prosperity of the music industry [3]. Improving the quality of music major university training requires establishing a macro regulatory agency to coordinate various aspects. Highlight the characteristics of the school and avoid homogenization. Develop development plans based on regional scales to ensure targeted and effective implementation. Improve the quality of music professional talent cultivation and promote the prosperity of the music industry [2]. To improve the quality of music education in universities, students should be taught according to their aptitude, flexibly taught, and unleash their strengths and potential. Promote the reform of teaching methods, balance Balance theory and skill training, and cultivate the ability of thinking, research, practice, and innovation. Fully utilize online teaching resources, mobilize students' enthusiasm and enthusiasm, and stimulate their love for the music industry. Promote the long-term development of music education and cultivate high-quality music professionals [6], [8]–[10].

Teachers are the most crucial factor in music education, and their quality determines teaching effectiveness. Universities need to strengthen their teaching staff's quality and ideological construction, solve the problem of insufficient teaching staff, and ensure the effectiveness of music major

teaching. To enhance the teaching staff, schools need to establish comprehensive assessment standards and evaluation systems, organize teacher training, promote innovative teaching methods, strengthen teacher-student communication, establish good moral standards, promote the rapid development of music education in universities, and inherit high-quality music education [3], [11].

To help graduates find employment, provide effective employment guidance, and leverage the advantages of music professional skills. Pay attention to showcasing teaching characteristics, combine basic training with applied creativity, combine creative practice with practical projects, and meet social needs. Cultivate talents with professional expertise and clear goals based on social needs, create more job opportunities, promote the development of music education, and create a broad space for students' career paths [6].

Scholars' research mainly concerns music professional skills and curriculum systems. However, with the changes in the educational environment and social needs, many scholars have proposed new strategies. Research has shown that establishing standardized quality standards for talent cultivation can help music colleges in universities better meet social needs. In addition, designing a talent cultivation model suitable for music majors' characteristics can promote students' initiative and enable them to play their role in learning and development. Although most studies have not directly targeted teachers and students in music colleges and universities, we can still gain many beneficial insights from these studies. This research plan verifies the effectiveness of these suggestions through practical research data.

1) Analyze the current situation and causes of the quality of talent cultivation in university music majors.
2) Study the influencing factors of the current quality of music professional talent cultivation in universities.
3) Determine the specific manifestations of the influencing factors in the cultivation of music professionals in universities and their internal correlation.
4) Revealing strategies for improving the quality of music professional talent cultivation in universities in Shaanxi Province in terms of teaching management.

III. METHODS

This study establishes an evaluation index system for the quality of music professional talent cultivation, which is employed to assess undergraduate universities with music majors in Shaanxi Province. The critical ratio method and homogeneity test are applied to ascertain the discrimination and reliability of scale items in the data. Using AMOS24.0 software, a model is constructed for confirmatory factor analysis on survey data. Empirical testing on questionnaire data is conducted through correlation analysis, descriptive analysis and correlation testing on model variables.

In Step 1, a purposive random sampling method is employed to select students of different ages from 16

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undergraduate music majors in Shaanxi Province, China. The aim is to ensure representativeness and a certain degree of diversity. The anonymity of the questionnaire is guaranteed to enable participants to express their true views freely. Relevant

information about the universities participating in the survey is presented in Table 1:

TABLE 1
Participating Universities in the Study

	Name of University or College	Type	Region
1	Shaanxi Normal University	Teacher training class	Xi'an
2	Xi'an Shiyou University	Comprehensive class	Xi'an
3	Xi'an University of Arts and Sciences	Comprehensive class	Xi'an
4	Xi'an Academy of Fine Arts	Art	Xi'an
5	Yan'an University	Comprehensive class	Yan'an
6	Xianyang Normal University	Teacher training class	Xianyang
7	Shaanxi Preschool Normal College	Comprehensive class	Xi'an
8	Baoji College of Arts and Sciences	Comprehensive class	Baoji
9	Weinan Normal University	Teacher training class	Weinan
10	Shaanxi University of Technology	Comprehensive class	Hanzhong
11	Xi'an Institute of Physical Education	Comprehensive class	Xi'an
12	Ankang College	Comprehensive class	Well-being
13	Yulin College	Comprehensive class	Yulin
14	Shangluo College	Comprehensive class	Shangluo
15	Xi'an Foreign Affairs University	Comprehensive class	Xi'an
16	Huaqing College, Xi'an University of Architecture and Technology	Comprehensive class	Xi'an

Step 2: Researchers conducted multiple tool tests before finalizing the questionnaire to ensure its reliability and effectiveness. Expert argumentation was undertaken, leading to revisions and improvements to the original questionnaire. Subsequently, suitable samples were selected for testing, and statistical data were collected through surveys. Any unreasonable questionnaire questions were adjusted to ensure the fulfillment of the research objectives in this study.

Step 3: Utilizing a purposeful random sampling method, samples from music majors across different universities and grades were selected to ensure representativeness and a certain degree of diversity. Researchers contacted relevant schools to secure research permission and support before distributing the questionnaire. The questionnaire was then sent to students, accompanied by an explanation of the survey's purpose and importance, ensuring the anonymity of the questionnaire for participants to express their views freely.

Step 4: Collecting feedback and information, the study focuses on ordinary higher education institutions with music

majors in Shaanxi Province, encompassing 12 comprehensive undergraduate universities, three normal undergraduate universities, and one art undergraduate university—totaling 16 institutions. Of the 1988 official samples from universities with music majors in Shaanxi Province, 78.4% (1559 samples) represented comprehensive universities, while 21.6% (429 samples) were from music colleges of normal universities.

Step 5: Organizing and processing the collected questionnaire data through statistical analysis software. Descriptive statistical analysis uses SPSS to calculate various indicators' averages, standard deviations, and frequency distributions. Multivariate statistical methods, including correlation and factor analysis, are employed to explore the correlations and commonalities among various influencing factors.

Step 6: AMOS software is utilized to construct a confirmatory factor analysis model for survey data, helping verify whether the various factors measured in the questionnaire accurately reflect the actual influencing factors, thereby enhancing the reliability and validity of the research results.

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Step 7: Through the research mentioned above methods and data analysis, researchers will conclude the factors affecting the quality of music professional talent cultivation in ordinary universities, providing substantive suggestions and improvement measures to enhance the quality of music professional talent cultivation.

IV. FINDINGS

This study distributed 2,200 questionnaires and collected 1988 valid questionnaires, achieving an effective response rate of 90.36%. The analysis of the effective questionnaires yielded the following results:

(1) Questionnaire Reliability Test

After inputting formal sample data, SPSS software was used to assess the reliability of the questionnaire scale. The concentration and consistency of questionnaire results were reflected using Cronbach's α coefficient, an indicator of internal consistency. The higher the Cronbach's α coefficient, the better the questionnaire's reliability. A coefficient > .9 indicates high intrinsic reliability, .8 < α < .9 indicates acceptable reliability, .7 < α < .8 suggests some problems but still has reference value, and α < .7 indicates significant issues requiring questionnaire redesign. In this study, the reliability analysis using SPSS yielded an α coefficient of .912 and a standardized α coefficient of .915, indicating excellent reliability.

(2) Questionnaire Validity Test:

The focus was on testing convergence and discriminant validity by analyzing standardized load capacity, Combined Reliability (C.R. value), and Average Variance Extraction ability (AVE value). A standardized load capacity > .6 and C.R. value > .9 indicate good consistency within each structure. All AVE values of latent and observable variables surpassed 0.5, adhering to recognized standards and affirming good convergence validity. For discriminant validity, if the root mean square value of the AVE of each facet is greater than the correlation coefficient between itself and other facets, it indicates good discriminant validity. In this study, the root mean square of AVE values in all dimensions exceeded the correlation coefficients with other dimensions, affirming good discriminant validity across all dimensions.

TABLE 2
Explanation of Letter Abbreviations

MTS	Music Professional Talent Training Quality Status
S1	Teaching Staff
S2	Training Quality
S3	Research and Creation
S4	Social Contribution
QI	Quality Indicators for Talent Cultivation
Q1	Professional Training Objectives
Q2	Professional Teaching Standards
Q3	Professional Teaching Quality
TM	Talent Cultivation Mechanism
M1	Talent Cultivation Concept
M2	Professional Characteristic Courses
M3	Professional Teaching Mode
TA	Subject Autonomy in Talent Cultivation
A1	Teacher's teaching enthusiasm
A2	Student Professional Identity
A3	Leadership management effectiveness

TABLE 3
Convergent Validity

Construct	Indicator	Standardized Load	Standard Error	T-value	C.R.	Cronbach'Alpha	AVE
TM	M1	.774			.902	.912	.746
	M2	.810	.032	28.531			
	M3	.616	.033	22.548			
QI	Q1	.768			.916	.923	.753
	Q2	.868	.029	36.091			

Construct	Indicator	Standardized Load	Standard Error	T-value	C.R.	Cronbach'Alpha	AVE
	Q3	.707	.025	28.778			
	S1	.803					
	S2	.774	.029	37.381			
MTS	S3	.609	.033	23.909			
	S4	.629	.030	21.722			
	A1	.727					
TA	A2	.804	.075	20.743	.918	.926	.719
	A3	.788	.075	20.451			

TABLE 4
Discriminant Validity

	TA	MTS	QI	TM
TA	.848			
MTS	.453	.851		
QI	.339	.370	.868	
TM	.372	.362	.338	.864

(3) Confirmatory factor analysis

Researchers utilized AMOS24.0 software to construct a confirmatory factor analysis model using survey data and standardized factor loading. Following the model fit evaluation index, a model fit test was conducted using the maximum likelihood estimation method. The output results indicated that the absolute fit index chi-square degree of freedom ratio was 2.524, less than the critical value of 3. Additionally, the RMSEA value was .042, below the critical value of .05, and the GFI value was .954, surpassing .9. The value-added adaptation indicators, NFI and IFI, were .962 and .971, respectively, exceeding the critical value of .9. Moreover, the values of PGFI and PNFI were .624 and .713, respectively, surpassing the critical value of .5. All adaptation indicators of the model adhere to the model fitting standards, signifying that the theoretical model aligns with the measured data.
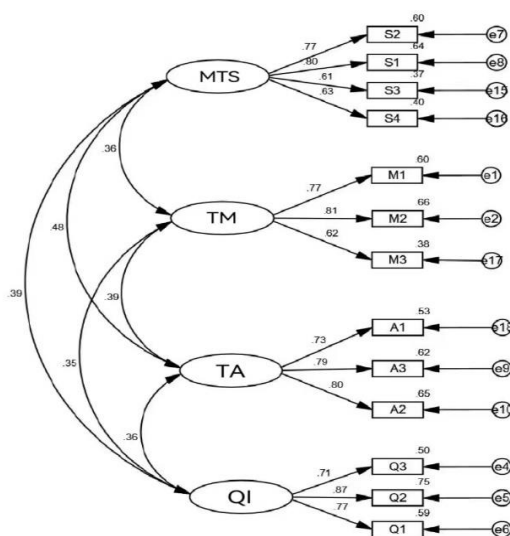
FIGURE 1
Confirmatory Factor Analysis

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TABLE 5
Model Fit Evaluation Results

		AFI		**IFI**		**PFI**	
Index	χ^2/df	GFI	RMSEA	NFI	IFI	PGFI	PNFI
Evaluation Criteria	<3	>.9	<.05	>.9	>.9	>.5	>.5
Actual Observations	2.524	.954	.042	.962	.971	.624	.713

(4) Descriptive Statistics

Among the five scales, the average score of the "Music Professional Talent Training Quality Status Scale 1" is 39.13, the average score of the "Music Professional Talent Training Quality Status Scale 2" is 35.63, the average score of the "Talent Training Quality Indicator Evaluation Scale" is 37.82, and the score of the "Talent Training Mechanism Evaluation Scale" is 52.15. These scores are higher than their theoretical averages but have not reached a high level. Therefore, we believe that the current situation and impact of quality indicators on the training quality of music professionals in universities in Shaanxi Province are at a moderate to slightly higher level. Among the five scales, the highest score is 27.59 on the "Autonomy Scale for Talent Cultivation." Therefore, undergraduate music majors in Shaanxi Province believe that the impact of cultivating autonomy is high. From this, the most prominent contradiction in the four dimensions of the quality of music professional talent cultivation in universities in Shaanxi Province is in the dimension of the talent cultivation mechanism.

TABLE 6
Scale Description Statistics

	Digit	**Range**	**Minimum (M)**	**Maximum (X)**	**Mean**	**E)**	**Standard Deviation**	**Variance**
Scale	Statistics	Statistics	Statistics	Statistics	Statistics	Standard Error	Statistics	Statistics
MTS1	1988	40	10	50	39.13	.119	5.479	30.024
MTS2	1988	36	14	50	35.63	.118	5.431	29.490
QI	1988	40	10	50	37.82	.145	6.596	43.508
TM	1988	60	15	75	52.15	.183	8.402	70.587
TA	1988	28	7	35	27.59	.094	4.330	18.751
Valid N	1988							

(5) The study conducted descriptive analysis and correlation testing on model variables.

Correlation Analysis: The results reveal significant correlations between various scales. Specifically, there is a significant positive correlation between the quality indicators of talent cultivation and the talent cultivation mechanism (β = .343, P < .01); there is a significant positive correlation between the quality indicators of talent cultivation and autonomy (β = .427, P < .01); there is a significant positive correlation between the quality indicators of talent cultivation and the current situation of talent cultivation quality (β = .388, P < .01); there is a significant positive correlation between the talent cultivation mechanism and autonomy (β = .611, P < .01); there is a significant positive correlation between the talent cultivation mechanism and the current situation of talent cultivation (β = .674, P < .01); there is a significant positive correlation between autonomy and the quality of talent cultivation (β = .786, P < .01).

TABLE 7
Descriptive Statistics of Latent and Observable Variables

	Average Value	**Standard Deviation**	**N**
	4.236	.657	1998
TM	4.118	.527	1998
TA	4.143	.815	1998
MTS	4.211	.672	1998

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TABLE 8
Confirmatory Factor Analysis

		QI	TM	TA	MTS
QI	Pearson Correlation	1	.343**	.427**	.388**
	Significance (two-tailed)	--	.000	.000	.000
	The sum of Squares and Cross-products	330.577	100.050	113.340	97.675
	Covariance	.903	.273	.310	.267
	N	1998	1998	1998	1998
TM	Pearson Correlation	.343**	1	.611**	.674**
	Significance (two-tailed)	.000	--	.000	.000
	The sum of Squares and Cross-products	100.050	257.300	143.043	149.630
	Covariance	.273	.703	.391	.409
	N	1998	1998	1998	1998
TA	Pearson Correlation	.427	.611**	1	.786**
	Significance (two-tailed)	.000	.000	--	.000
	The sum of Squares and Cross-products	113.340	143.043	212.999	158.639
	Covariance	.310	.391	.582	.433
	N	1998	1998	1998	1998
MTS	Pearson Correlation	.388**	.674**	.786**	1
	Significance (two-tailed)	.000	.000	.000	--
	The sum of Squares and Cross-products	97.675	149.630	158.639	191.356
	Covariance	.267	.409	.433	.523
	N	1998	1998	1998	1998

V. CONCLUSION AND EVALUATION

1) Disparities exist in the quality of talent training among music majors in universities. A comparative analysis of various music colleges in Shaanxi Province revealed issues such as an imbalanced teacher structure, notable variations in training quality, limited research and creative achievements, and a relatively singular approach to social services.

2) Internal attributions encompass the lack of distinctiveness in professional talent cultivation, challenges in coordinating the teacher-student ratio, and insufficient professional teaching supervision. External attributions involve constraints from the external development environment regarding resources, a shortage of resources for professional teaching practices, and insufficient connectivity in transforming professional achievements.

3) The key influencing factors for talent cultivation in music majors in universities include talent cultivation quality indicators, talent cultivation mechanisms, and talent cultivation autonomy. The interplay between these factors holds significant implications for enhancing the quality of talent cultivation.

4) Strategic recommendations to ensure the quality of talent cultivation in music majors in universities involve establishing equal status, optimizing teaching conditions, providing corresponding autonomy, enhancing the evaluation system for talent cultivation quality, and fostering innovative reforms in talent cultivation mechanisms.

The innovative reform suggestions for cultivating music professionals in universities in this study include implementing a diverse range of majors, diminishing the boundaries of music majors, and emphasizing the enhancement of comprehensive abilities. A diversified reconstruction of curriculum concepts, constructing a curriculum system for music majors, and meeting personalized training needs are emphasized. Innovations in teaching methods, leveraging teaching network platforms, and ensuring compatibility with traditional teaching methods are suggested. Establishing a scientific teaching management system, an effective supervision mechanism, and the realization of quality objectives in professional talent cultivation are crucial. Strengthening quality standards in talent cultivation, innovating talent cultivation models, and motivating the

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initiative of talent cultivation entities are proposed to improve the quality of talent cultivation in music majors in universities, elevate the level of education, and drive the development and reform of music majors in universities.

VI. SUGGESTIONS

Building upon the critical factors identified in this study, future research should chart a new course by delving deeper into the nuanced interactions and dynamics of talent cultivation in university music majors. A more nuanced exploration of internal and external attributions could uncover hidden complexities and guide the development of targeted interventions. New objectives should involve investigating the impact of evolving educational technologies on music education, exploring interdisciplinary approaches in curriculum design, and examining the role of mentorship in talent development. Additionally, considering the music industry's changing landscape, future studies could focus on aligning educational objectives with emerging industry demands. Methodologically, a mixed-methods approach integrating qualitative insights from students, educators, and industry professionals could provide a more comprehensive understanding. Longitudinal studies tracking the career trajectories of music graduates would offer valuable insights into the long-term impact of educational interventions. Embracing a holistic perspective and incorporating diverse stakeholder perspectives will contribute to a more robust understanding of talent cultivation in music majors and inform strategies for continuous improvement in music education at the university level.

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