Factors Affecting Talent Training Program of Art and Design Postgraduate Students: A Case Study of Shenyang University, Liaoning Province, China

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Abstracts

The objectives of this research were: (1) To determine the factors that affect the talent training program for art and design postgraduate students at Shenyang University, Liaoning Province, (2) To analyze the relationship between factors affecting the talent training program for art and design postgraduate students, and (3) To evaluate the fit of the model.

The research was a quantitative methodology research. Population was students which were selected from year1, 2, and 3, totaling 450. The sample size was determined by G*power software, obtained by a stratified random sampling technique sampling method, totaling 280 samples. The instruments used for data collection was a five-level rating scale questionnaire. The statistics used for data analysis were frequency, percentage, mean, standard deviation, and Confirmatory Factor Analysis (CFA) and structural equation model (SEM).

The research findings revealed that: there were five factors affecting the talent training program of art and design postgraduate students at Shenyang University in Liaoning Province which consisted of (1) the source structure of graduate students, (2) the quality of tutor team, (3) postgraduate training conditions, (4) postgraduate training system, and (5) postgraduate training quality. The relationship of factors affecting the talent training program for art and design postgraduate students were the graduate training system had both direct and indirect effect on the dependent variable of the postgraduate training quality, the source structure of graduate students had only direct effect on the postgraduate training quality, the quality of tutor team and postgraduate training conditions did not effect on the postgraduate training quality. Also, the relationship model fit well to empirical data.

Keywords: Talent Training Program; Postgraduate Students; Shenyang University of Liaoning Province.

Introduction

Facing the in-depth adjustment of the world economy, the acceleration of knowledge innovation and the intensification of competition for educational talents, Chinese graduate education is facing unprecedented development opportunities and challenges. Promoting the reform and innovation of training mode in the development of graduate education has become the key support for the construction of first-class disciplines in China. Among them, the exploration of the training mode of MFA in design specialty is one of the important issues discussed in recent ten years, which has positive and constructive significance for the postgraduate education of MFA in design specialty in the future.

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Since the MFA has two major directions of art and design, The National Art Degree Graduate Education Steering Committee organized colleges and universities and experts to issue "The writing Norms for Professional Dissertations of Master of Fine Arts graduates (revised in 2020)" and "The Writing Norms for Professional Dissertations of Master of Fine Arts graduates", which have made more clear provisions and requirements on the training objectives, curriculum and credit settings, graduation assessment, thesis writing, basic requirements of education direction and other aspects of Master of Fine Arts graduates (The National Steering Committee for Graduate Education of Art Majors, 2020). Therefore, in the face of new requirements and the development of new disciplines, how to establish a more effective and high-quality training mode for art and design postgraduates is in urgent need of research.

From the perspective of the progress and implementation effect of international cooperation in higher art education, it is necessary to training art talents to meet the needs of social development and strengthen international cooperation and exchange of art education in primary and secondary schools. Education administrators should explore the management mode of art interdisciplinary overseas learning and exchange in Liaoning Province, according to the characteristics of domestic colleges and universities, and find a better way to implement vision leadership and promote the international cooperation of Chinese art education.

In the liaoning area, reasonable practice of master's teaching in designing disciplines is a major step in promoting the reform of Chinese graduate students. This study tries to find out the factors that affect the training of art and design graduate students in Liaoning province from the current situation of the training mode of graduate students, so as to better develop the training of art graduate students in Liaoning province and realize the national expectations.

Research Objectives

1. To identify the positive impact of training system on the training quality.
2. To identify the positive impact of graduate source structure on the training quality.
3. To identify the positive impact of tutors and team’s quality on the training quality.
4. To find out the positive impact of training conditions on training quality.
5. To find out the intermediary effect of structure source, tutor quality and training conditions on training quality.

Research Methodology

Population and Sample

The population in this study was postgraduate students in Shenyang University in academic year 2021. The number of the population were 450 students. The research group was postgraduates studying in the Academy of Fine Arts of Shenyang University in 2021.

The samples were selected by proportional stratified random sampling technique, which years of study was used as strata, sample from the population in 2021. This study used stratified random sampling technique to select samples. The first step is 3 stratum, and 3 years in a row are randomly selected for investigation. The second step is simple random sampling. Students are selected from the year1, 2, and 3 selected in the first step. Each year was selected about 53 students to answer the questionnaire.

In order to have an appropriate sample size, the researcher used the G*power software to calculate the sample size by identified the chi-square test for goodness of fit. The researcher obtained the sample size = 280 detail.

Research Instruments

The researcher employed a questionnaire which composed of three parts; Part I: Demographic variables (Checklist) e.g., Gender, Age Range, Educational Level, Working Experience in University, Position, Colleges/University Size, and Colleges/University Type, Part II: Variables of tutor and postgraduate training conditions (Five-point rating scale) (65 items), and Part III: Suggestion (Open Ended). Instrument was developed from five instruments as a questionnaire. The quality of questionnaires was assessed by content validity and reliability. For the content validity, it was checked by five experts and analyzed by Item-Objective Congruence (IOC). The item value was ≥ 0.50. For the reliability, it was analyzed by Cronbach's Alpha, the value of Cronbach's Alpha was above 0.7. Also, in this study, five instruments were applied for data collection. Those were the Likert's 5-point rating scale and the qualitative data.

Data Collection

This study takes Shenyang University in Liaoning Province as the research object. In 2021, there were 562 graduate students (from first year of graduate school to third year of graduate school) majoring in art and design in Shenyang University, Liaoning Province. The research adopts proportional stratified random sampling technique. In the first step, 450 students at Shenyang University were randomly selected through cluster random sampling. In the second step, excellent students were selected from postgraduate students at Shenyang University by simple random sampling method. The researcher used both the optimization design and empirical method to determine the sample size, which was about 280 people. The researcher employed a questionnaire which composed of seven parts; Part I: Demographic variables (Checklist), general information of the respondents, totaling 7 items; Part II: Management of the Source Structure of Graduate Students (Five-point rating scale); Part III: Construction and Management of Graduate Tutor Team (Five-point rating scale); Part IV: Management of Postgraduate Training Conditions (Five-point rating scale); Part V: Management of Postgraduate Student Training System (Five-point rating scale); Part VI: Quality Management of Postgraduate Training (Five-point rating scale); and Part VII: Recommendation (Opened End). Instrument was developed from step (1) as a questionnaire. The quality of questionnaires was assessed by content validity and reliability. For the content validity, it was checked by five experts and analyzed by Item-Objective Congruence (IOC). The item value was ≥0.60. For the reliability, it was analyzed by Cronbach alpha at .85. The questionnaires were sent by online, mail, and researcher. The data of demographic variables were analyzed by descriptive statistics, frequency, and percentage. The variables of factors affecting talent training program of art and design postgraduate students: a case study of Shenyang University were analyzed by descriptive statistics, mean, Standard Deviation (S.D.). The components of factors affecting talent training program of art and design postgraduate students: a case study of Shenyang University were analyzed by Confirmatory Factor Analysis (CFA) to reduce irrelevant variables. After the completion of data collection, content analysis was used to analyze the collected data.

The Likert's 5-point rating scale was used to measure and judge the questionnaire (Likert, 1932). First of all, experts and scholars in this field are invited to review the completed questionnaire and gradually revise and improve it. After that, a small-scale preliminary survey

was conducted on outstanding graduate students from Shenyang University. According to the feedback of the respondents, the questionnaire was revised again, and the formal questionnaire was finally determined. The questionnaire contained 5 variables and 65 measurement items.

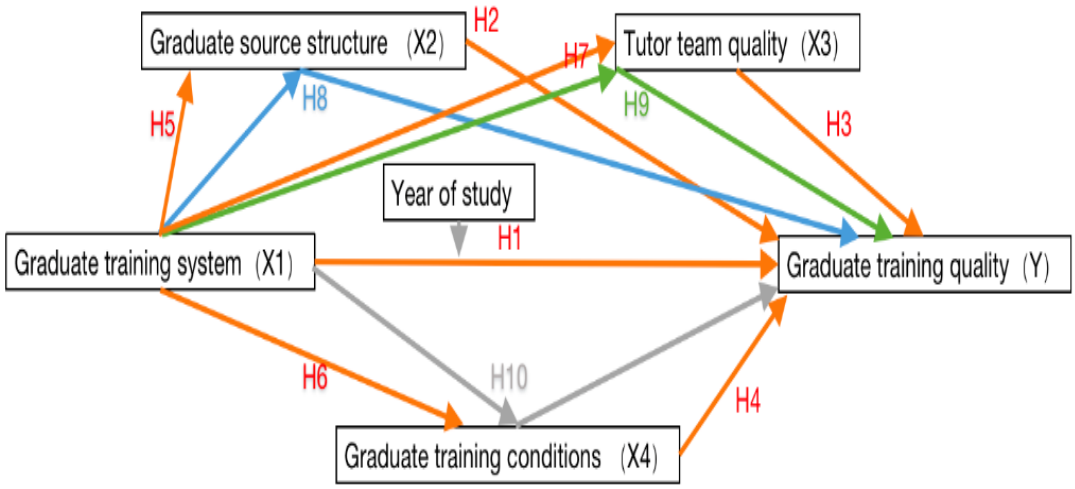
Data analysis

In this research, software to be used for data management and data analysis were (1) The SPSS software packet was employed for analyze the categorical variables. (2) The AMOS software was used for analyzing hypothesis testing.

For quality data analysis, basic statistics were applied for the categorical data or the qualitative data and to know the personal information of the sample. The analysis was performed using the frequency and percentage.

For quantitative data analysis, (1) The descriptive statistics were applied for data analysis. The mean ($\bar{x}$) to calculate the average score, and the standard deviation (s.d.) to calculate the score variation. (2) Inferential statics. Model evaluation used the chi-square goodness of fit, such as Chi-square test, CFI, TLI, and RMSEA. Also, the z-test was used to the hypothesis testing.

Conceptual Framework



Research Findings

Table 1 Frequencies, percent, valid percent and cumulative percent of qualitative data.

variables		Frequency	Percent	Valid Percent	Cumulative Percent
gender	Male	107	38.2	38.2	38.2
	Female	173	61.8	61.8	100.0
	Total	280	100.0	100.0	
age	Under 25	191	68.2	68.2	68.2
	More than or equal to 25	89	31.8	31.8	100.0
grade level	First year graduate student	78	27.9	27.9	27.9
	Second year graduate student	91	32.5	32.5	60.4
	Third year graduate student	111	39.6	39.6	100.0
professional direction	Public Art	21	7.5	7.5	7.5
	Painting	87	31.1	31.1	38.6
	Environmental Art	18	6.4	6.4	45.0
	Visual Communication Design	55	19.6	19.6	64.6
	Product Design	12	4.3	4.3	68.9
	Others	87	31.1	31.1	100.0
expereince	Yes	145	51.8	51.8	51.8
	No	135	48.2	48.2	100.0
undergraduate attribute	The first batch of undergraduate	104	37.1	37.1	37.1
	The second batch of	130	46.4	46.4	83.6
	The third batch of undergraduate	46	16.4	16.4	100.0
present attribute	Comprehensive university	130	46.4	46.4	46.4
	College of art specialties	150	53.6	53.6	100.0
	Total	280	100.0	100.0	

It shows that the total number of respondents is 280 students. The results of this study indicated that (1) the majority of art graduate students were women, (2) more than two thirds of the students were under the age of 25, less than one third of students aged 25 and under, (3) the three groups in grade level were relatively average, (4) The number of students who answered the questionnaire was uneven, not only because of the variety of majors, but also because of the difference in the number of major enrollment, (5) both work experience answers were relatively average, (6) the graduate students have a high level of student resources, and (7) The results are relatively average, which proves that the school has a high level of students.

Table 2 Means, standard deviation percent of coefficient of variation, skewness, kurtosis, and z-test.

Variables	$\bar{x}$	s.d.	%CV	skew	c.r.	kurtosis	c.r.
DD1	4.050	0.957	23.619	-0.860	-5.890	0.380	1.290
DD59	4.200	0.836	19.895	-0.940	-6.440	0.940	3.190
DD58	4.164	0.839	20.150	-0.860	-5.900	0.750	2.570
DD57	4.125	0.873	21.163	-0.790	-5.430	0.390	1.320
DD53	4.186	0.881	21.038	-1.000	-6.840	0.940	3.200
DD51	4.171	0.875	20.984	-0.950	-6.490	0.860	2.930
DD50	4.196	0.847	20.186	-0.990	-6.740	0.990	3.390
DD40	4.130	0.928	22.470	-0.970	-6.600	0.600	2.050
DD38	4.240	0.861	20.307	-1.020	-6.960	0.850	2.890
DD36	4.170	0.898	21.535	-0.900	-6.150	0.540	1.850
DD20	4.140	0.914	22.077	-0.920	-6.290	0.570	1.930
DD18	4.130	0.912	22.082	-0.830	-5.680	0.210	0.710
DD15	4.150	0.907	21.855	-1.080	-7.370	1.160	3.950
DD13	4.160	0.926	22.260	-0.990	-6.800	0.760	2.610
DD10	4.140	0.909	21.957	-0.970	-6.660	0.740	2.520
Mardia's coefficient						246.490	91.320

Table 3 Chi-square test, degrees of freedom, relative chi-square, Comparative fit index (CFI), Standardized Root Mean Square (SRMR), Root Mean Square Error of Approximation (RMSEA).

Measure	**Estimate**	**Threshold**	**Interpretation**
CMIN	205.357	--	--
DF	78.000	--	--
CMIN/DF	2.633	Between 1 and 3	Excellent
CFI	0.980	>0.95	Excellent
SRMR	0.020	<0.08	Excellent
RMSEA	0.080	<0.08	Acceptable

Table 4 Factor loadings in unstandardized and standardized for each factor and the z-test for statistically significant.

Factor loadings	Estimate	beta	S.E.	C.R.	P	R^2
DD1 <--- GTS	1.050	0.860	0.050	19.560	***	0.740
DD10 <--- GTS	1.000	0.860				0.740
DD13 <--- GTS	1.060	0.900	0.050	21.620	***	0.810
DD15 <--- TTQ	1.000	0.900				0.810
DD18 <--- TTQ	1.010	0.900	0.040	23.530	***	0.810
DD20 <--- TTQ	0.990	0.890	0.040	22.640	***	0.792
DD36 <--- QTC	1.000	0.920				0.846
DD38 <--- QTC	0.920	0.910	0.040	26.040	***	0.828
DD40 <--- QTC	0.980	0.900	0.040	25.320	***	0.810
DD50 <--- STS	1.000	0.890				0.792
DD51 <--- STS	1.040	0.900	0.050	23.120	***	0.810
DD53 <--- STS	1.040	0.890	0.050	22.750	***	0.792
DD57 <--- GTQ	1.000	0.880				0.774
DD58 <--- GTQ	0.970	0.900	0.040	22.120	***	0.810
DD59 <--- GTQ	0.950	0.880	0.040	21.240	***	0.774

Table 5 Factor loadings in standardized, square of factor loadings, measurement error, composite reliability (CR) and average variance extracted (AVE).

Factors	loadings	Square-loadings	measurement error	CR	AVE
GTS(DD1)	0.860	0.740	0.260		
GTS(DD10)	0.860	0.740	0.260		
GTS(DD13)	0.900	0.810	0.190		
	2.620	2.289	0.711	0.906	0.763
TTQ(DD15)	0.900	0.810	0.190		
TTQ(DD18)	0.900	0.810	0.190		
TTQ(DD20)	0.890	0.792	0.208		
	2.690	2.412	0.588	0.925	0.804
QTC(DD36)	0.920	0.846	0.154		
QTC(DD38)	0.910	0.828	0.172		
QTC(DD40)	0.900	0.810	0.190		
	2.730	2.485	0.516	0.935	0.828
STS(DD50)	0.890	0.792	0.208		
STS(DD51)	0.900	0.810	0.190		
STS(DD53)	0.890	0.792	0.208		
	2.680	2.394	0.606	0.922	0.798
GTQ(DD57)	0.880	0.774	0.226		
GTQ(DD58)	0.900	0.810	0.190		
GTQ(DD59)	0.880	0.774	0.226		
	2.660	2.358	0.642	0.915	0.783

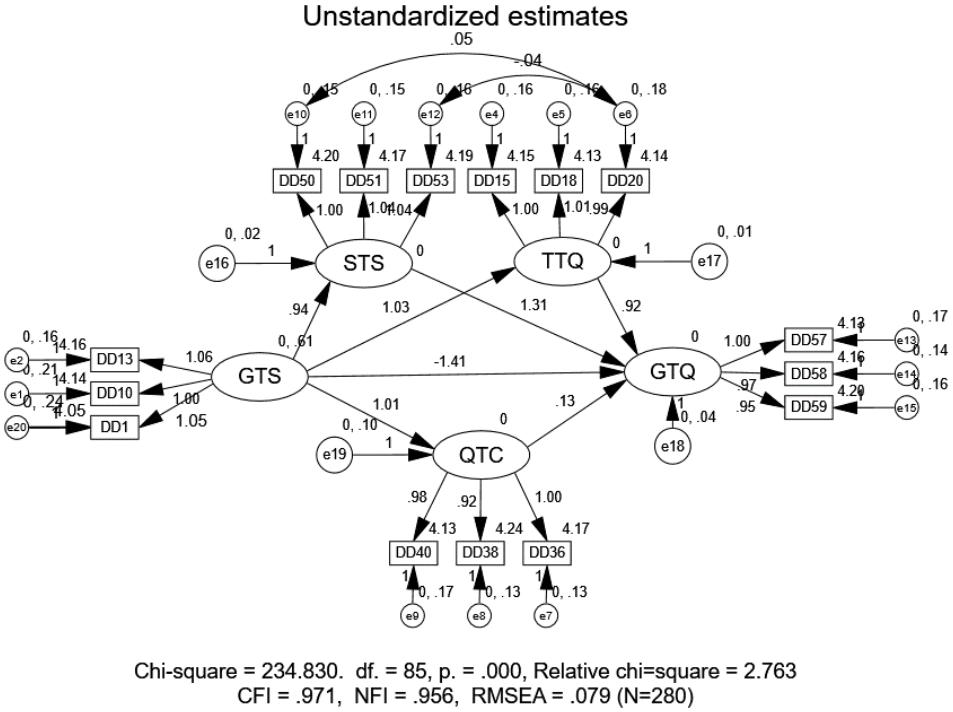


Figure 1 Structural equation model and their path coefficient in unstandardized and statistics for model evaluation.

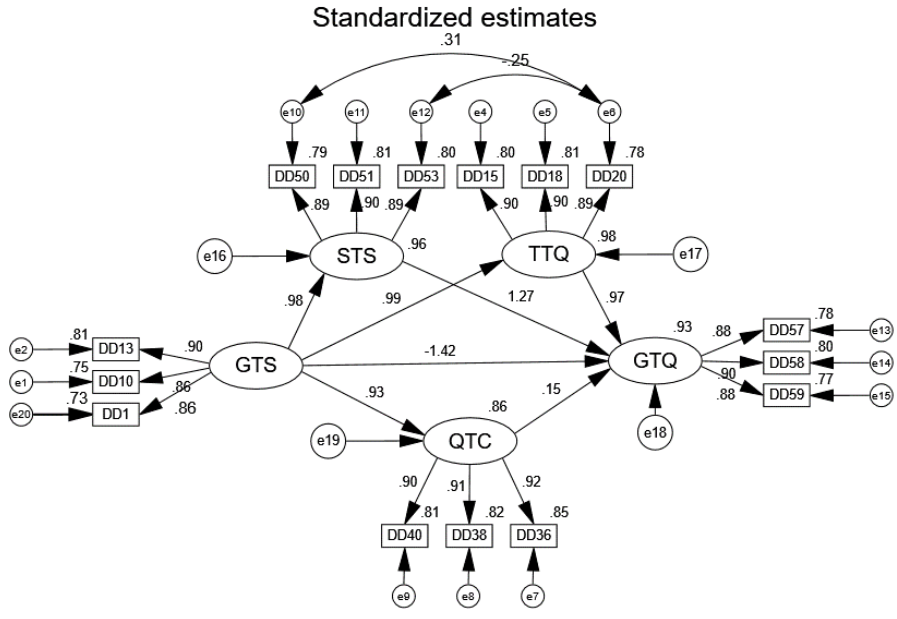


Figure 2 Structural equation model of factor

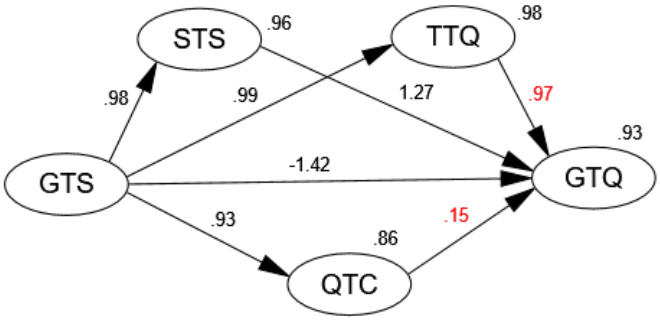


Figure 3 The path coefficient in standardized in hypotheses testing.

These finding showed that: (1) all the samples in this study have perceived high and their perception were not different, (2) the hypothetical model was right and the hypotheses within the model could be meaningful tested, (3) all 15 indicators had the conversion quality, and it was good to measure the measure factors well, and (4) the result found that all factor loadings' CR >0.7 and AVE >0.5, so it concluded that factors had good reliability and good convergent validity and the factors measurement had enough quality to be used to test hypotheses.

According to the figures 1 and 2, the χ^2 was 234.830 with 85 df. The p-value was 0.000, which was significant and showed that the model was not fit well to the empirical data. However, the model had more degrees of freedom which means the chi-square could not be used to match, so it should use other indicators instead of using chi-square in this case. Furthermore, other model fit indicators, x^2 /df was 2.763 less than 3, CFI is 0.971 more than0.90, NFI = 0.956 and RMSEA was 0.079 less than 0.8 all pointing that the model fit well. Therefore, it could be concluded that the hypothetical model fit to the empirical data so the structural equation model was right and the hypotheses within the model was meaningful tested.

Moreover, the research findings revealed that: there were five factors affecting the talent training program of art and design postgraduate students at Shenyang University in Liaoning Province which consisted of (1) the source structure of graduate students, (2) the quality of tutor team, (3) postgraduate training conditions, (4) postgraduate training system, and (5) postgraduate training quality. The relationship of factors affecting the talent training program for art and design postgraduate students were the independent variable of the graduate training system had both direct and indirect effect on the dependent variable of the postgraduate training quality, the variable of the source structure of graduate students had only direct effect on the postgraduate training quality, the quality of tutor team and postgraduate training conditions did not effect on the postgraduate training quality. Also, the relationship model fit well to empirical data.

Discussion

Discussion about major findings of objective 1

There were five factors affecting talent training program of art and design Postgraduate Students at Shneyang University which consisted of the source structure of graduate students, the quality of tutor team, the postgraduate training conditions, the graduate training system, and the postgraduate training quality.

1. The source structure of graduate students. The design and implementation of postgraduate course practice; the innovation of talent training mode; and the improvement of tutors' own ability and quality. This research finding was in accordance with the theories or research of Zhang Rui, Gao Chengcheng, Chen Xicheng, and Wu Yazhou (2021) which was found that standardize the process of professional practice training, improve the scientific research infrastructure and the construction of professional practice bases, and improve the training quality of professional degree graduates. Also, the findings were in the same direction with Guan Erqun, Shang Jianhua, She Dawei, and Hou Shaolong (2012), it was found that there is a direct and important relationship between the design and implementation of the practice link and the quality of the training of full-time master students

2. The quality of tutor team. Optimizing the professional curriculum design; constructing the international development path of talent training; and strengthening the core values education of master tutors. This research finding was in accordance with the theories or research of Liu Shijun and Liu Shan (2019) which was found that the tutor cooperation system could give full play to the strengths of the team teachers, make full use of the different academic structure, knowledge structure and professional skills of the tutor, and train the students in an all-round way. Also, from the research of Cao Xia and Hu Qiang (2021), it was found that it is urgent to strengthen the ideological and political construction of graduate tutors in colleges and universities.

3. The postgraduate training conditions. Strengthening the subject of responsibility and promote the establishment of a scientific evaluation mechanism; establishing a scientific evaluation and guidance system of graduate education; and establishing a more scientific evaluation system. This research finding was in accordance with the theories or research of Wei Ling and Zhang Tonghui (2021) which was found that while improving the quality of education, it should also pay attention to the scientific connotation of graduate education and establish a scientific evaluation and guidance system for graduate education. Also, from the research of Wang Xiaofei and Li Hongyu (2009), it was found that optimize the training program and improve the construction of the curriculum system.

4. The graduate training system. Strengthening discipline construction, improving the quality of postgraduate education, and realizing the connotative development of postgraduate education; strengthening interdisciplinary cooperation, optimizing training process, and constantly exploring adapting to the goal of adapting to the new era of graduate training; and building the "5S" construction system framework for postgraduate quality assurance with self-enhancement, external empowerment and multiple participation. This research finding was in accordance with the theories or research of Gao Tianzhi (2022) which was found that by improving the internal quality guarantee mechanism of the source of students, preparatory education, training quality, graduate alumni development and so on, it could solve various problems in the process of international graduate training. Also, from the research of Wang Houneng, Wang Houneng, and Li Zicheng (2022), it was found that at the school level, relevant management system and evaluation system should also be formulated to

ensure the normal and effective operation of the curriculum system, with the ultimate goal of effectively achieving the training program.

5. The postgraduate training quality. The construction of an internal guarantee system for the quality of postgraduate training in colleges and universities, the construction of an evaluation system for the effectiveness of industry colleges and universities in establishing moral education; and the construction of a double-driven postgraduate innovation training system of "science and technology integration + industry-education integration". This research finding was in accordance with the theories or research of Wang Guilin, Pei Qingqing and Chen Xi (2021) which was found that take the initiative to participate in and cooperate with the whole staff in the whole process and in all aspects to improve the external and internal quality assurance system, deepen the cooperation between production and education, so as to improve the education quality of the joint training base. Also, the findings were in the same direction with Li Hongyang, Chen Lina, Yang Yuqian, Wu Xiaojian, Zhang Ming, and Zhang Baojun (2022), it was found that by optimizing the management mode of the internal quality assurance system process, the supervision group, the tutor team and the student grass-roots organization are set up to explore the construction of the internal quality assurance system which could realize the participation of multiple subjects such as administrative departments, tutors and graduate students.

Discussion about major findings of objective 2

Hypothesis H2: The source structure of graduate students has positive direct effect on the postgraduate training quality, the estimated path coefficient was 1.310, and had statistically significant ($p<0.001$), which showed that the GTS had positive direct effect on GTQ. This research finding was in accordance with the theories or research of Shang Rui (2021) which was found that how colleges and universities break through the siege and strive for high-quality students is of great significance to their high-quality development, which is closely related to the quality of graduate students and graduate training quality. Also, the findings were in the same direction with Zheng Nanshan, Zhang Qiuzhao, Wei Ke, Zhang Shubi, and Zhang Tingting (2020), it was found that the quality of students is an important prerequisite for training high-level graduate students. Moreover, from the research of Gao Xinbao, Yuan Xichao, and Wang Jinzhu (2018), it was found that only by focusing on the personalized training of graduate students, making great efforts in the enrollment structure, tutors' own ability and quality, scientific research conditions and funding investment, professional curriculum setting, dissertation quality management and other aspects, giving full play to students' autonomy and initiative, and actively creating a learning atmosphere of tempering leniency and discipline, could the training quality of graduate students in the military academy be improved. Meanwhile, from the research of Chen Haojue (2014), it was found that how to build an effective quality assurance system for postgraduate students has become the top priority in the recruitment of postgraduate students in universities.

Hypothesis H5: The graduate training system has positive direct effect on the source structure of graduate students, the estimated path coefficient was 0.94 and had statistically significant ($p=0.000$), which showed that the GTS had positive direct effect on GTQ. This research finding was in accordance with the theories or research of Li Hongyang, Chen Lina, Yang Yuqian, Wu Xiaojian, Zhang Ming, and Zhang Baojun (2022) which was found that the internal quality assurance system, as the core driving force of postgraduate training, needs to be constantly explored and optimized. Also, the findings were in the same direction with Gao Tianzhi (2022), it was found that under the background of the national demand for innovative

talents, it is very important to construct a scientific and effective evaluation index system for graduate students' innovation ability to train innovative talents. Moreover, from the research of Li Bohua and Luo Wen (2022), it was found that it is necessary for local universities to establish and improve the internal guarantee system of postgraduate training quality.

Hypothesis H6: The graduate training system has positive direct effect on the postgraduate training conditions, the estimated path coefficient was 1.010 and had statistically significant (p=0.000), which showed that the GTS had positive direct effect on GTQ. This research finding was in accordance with the theories or research of Zuo Congliang (2021) which was found that there are many factors affecting the quality of postgraduate training, so it is necessary to promote the reform of postgraduate training mechanism, and build a "trinity" comprehensive quality assurance system with training units as the main body, the government as the leading role and diverse social participation. Also, the findings were in the same direction with Sun Yuwei, Liu Chao, Gong Linan, Qi Jinglin, and Du Baoguo (2021), it was found that it should strengthen the construction of curriculum teaching, scientific research, professional practice, tutor's guidance, dissertation, training institution management and service, so as to improve the training conditions of postgraduates in multiple dimensions. Meanwhile, from the research of Zhang Chuanjian and Yao Yun (2021), it was found that the interaction between the scale, quality and length of graduate education. Moreover, from the research of Zhang Liang (2020), it was found that the establishment of a more scientific evaluation system, strictly strengthen the quality management, to guide the characteristics of graduate training to high quality development direction.

Hypothesis H7: The graduate training system has positive direct effect on the quality of tutor team, the estimated path coefficient was 1.030 and had statistically significant (p=0.000), which showed that the GTS had positive direct effect on GTQ. This research finding was in accordance with the theories or research of Zhang Weijun (2015) which was found that tutors are the core strength of graduate education and training. The quality of graduate supervisor team construction has a direct influence on the quality of graduate training and a tremendous influence on talent construction and social development in our country. Also, from the research of Wei Lin and Zhang Tonghui (2021), it was found that to strengthen the construction of the postgraduate tutor team and improve the level of the tutor team is the key process of postgraduate training.

Hypothesis H1: The GTS has no positive direct effect GTQ, the estimated path coefficient was -0.1410 and had statistically significant (p=0.020), which showed that the GTS had negative direct effect on GTQ.

Hypothesis H3: The TTQ has no positive direct effect GTQ, the estimated path coefficient was 0.920 and had statistically significant (p=0.090), which showed that the GTS had no effect on GTQ.

Hypothesis H4: The QTC has no positive direct effect GTQ, the estimated path coefficient was 0.130 and had statistically significant (p=0.150), which showed that the QTC had no effect on GTQ.

Discussion about major findings of objective 3

According to the figures 1 and 2, the χ^2 was 234.830 with 85 df. The p-value was 0.000, which was significant and showed that the model was not fit to the empirical data. However, the model had more degrees of freedom which means the chi-square could not be used to match, so it should use other indicators instead of using chi-square in this case. Furthermore, other model fit indicators, x^2 /df was 2.763 less than 3, CFI was 0.971 more than

0.90, NFI = 0.956 and RMSEA was 0.079 less than 0.8 all pointing that the model fit well (Hair,et al., 2014). Therefore, it could be concluded that our hypothetical model fit to the empirical data so the structural equation model was right and the hypotheses within the model could be meaningful tested.

Recommendation

Recommendation for plicices formulation

1. Actively promote the reform of enrollment and improve the quality of students.

First, establish a long-term mechanism of enrollment publicity. Organize experts and professors to give popular science lectures to the majority of students, and establish a relatively stable recruitment publicity team. At the same time, in the era of new media, colleges and universities should consider the use of new media means for publicity, with convenient publicity channels to enhance the school brand value. In terms of enrollment, they should expand the publicity channels, take advantage of external publicity media, increase the power of authoritative publicity, and expand the influence of the school.

Second, combine professional quality with comprehensive quality assessment. Especially in the stage of the second examination, attention is paid to students' innovation ability, scientific research ability and future development potential.

Third, in order to ensure the quality of students, the college and university must adhere to the principle of scientific selection, actively explore and follow the principle of high-level talent selection, adopt diversified investigation methods, adhere to the people-oriented, improve the management level, quantitative assessment results and other reform measures, attract more excellent candidates to apply for the school, improve the quality of students.

2. Improve the supervision mechanism of dissertation evaluation and constantly improve the quality of dissertation.

First, expand the scope of dissertation evaluation. If possible, experts from foreign countries should be invited to review the paper. To expand the subject fields for examination, and strengthen teachers of related disciplines and marginal disciplines to evaluate dissertations.

Second, improve the paper evaluation and defense system. Strict examination, supervision and management of dissertation application and dissertation defense procedures should be conducted, and serious treatment should be given to some tutors who lack responsibility and ineffective guidance.

Third, at the same time in the proposal, the middle and graduation defense each link to strengthen management.

3. Innovate the mentor guidance mode, optimize the allocation of mentor resources, and improve the quality of the mentor team.

Frist, establish a reasonable tutor team and division of labor. The tutor team should be an echelon that can be assembled in a number of ways. The team members should be composed of experienced and knowledgeable old professors and new teachers who are quick in thinking and good at accepting new things.

Second, provide a good team research exchange platform. After the establishment of the tutor team, the tutor team members and postgraduate students should actively organize regular or irregular discussions on scientific research achievements and problems.

Third, establish a reasonable team management system. A good postgraduate tutor team could promote the development of the academic core competitiveness of the team

members and promote the academic exchange between the teams, and a good team management system is the key to the harmonious and sound development of the team. An effective incentive mechanism for scientific research is an important guarantee to improve the output of scientific research and the quality of team training.

Recommendation of practical applicaion

1. Ensure the quality of graduate students and improve the quality of graduate education.

(1) Optimize the allocation of higher education resources around the supply and demand of postgraduate education. First, strengthen the supervision of postgraduate enrollment and improve the quality of graduate students. Second, to meet society's demand for high-level talents. Third, the government needs to shift its focus and give universities more autonomy to recruit students.

(2) Expand the source of high-quality students and adjust the expansion of graduate enrollment. First, the college and university should continue to dig deep into the undergraduate resources of their own and instill the concept of postgraduate education in undergraduate education, so that they could have access to postgraduate education resources in advance and constantly improve their theoretical knowledge and scientific research level, so as to meet the needs of postgraduate education. Second, improve the screening level of the second examination. Thirdly, the proportion relationship between enrollment expansion and potential source of students is detailed.

(3) Strengthen organizational management, improve the enrollment plan allocation mechanism. Colleges and universities might set up special organizations to conduct systematic research on the annual industry development report, employment information report, postgraduate enrollment and other information. At the same time, a competitive quota allocation method could be appropriately adopted to eliminate the results of performance evaluation of each discipline.

2. Postgraduate training should fully reflect the scientific, forward-looking, attach importance to the cultivation of innovative talents.

(1) Postgraduate training should strengthen the process supervision and management. The postgraduate training system is an orderly system composed of training objectives, training methods, curriculum system, training process, management system, quality evaluation and other factors, which are related and mutually restricted. The four closely related elements of training objectives, training methods, process supervision and management, quality evaluation together constitute the graduate training mode, especially the supervision and management of the training process should be emphasized.

(2) Diversified training mode.

First, the combination of production, education and research.

Second, the joint training. It should make full use of the strong faculty of key universities or research institutes and improve the mature postgraduate training mechanism, realize the complementary advantages and disadvantages of local key universities, research institutes and local universities, and drive the development of postgraduate education in local universities.

Third, multiple complementarities. The multi-complementary talent training model is a complementary model that integrates the traditional "apprentice graduate training model, professional graduate training model, writing graduate training model and teaching graduate training model.

(3) Systematized graduate training model.

The systematic graduate training mode is more flexible and achieves the unity of diversity. Colleges and universities should be based on the actual situation of disciplines and majors, regulate the postgraduate training mode system in advance, organically combine disciplines and majors with training mode, and realize the interaction of complementary modes of majors.

3. Establish a more scientific evaluation system, strictly strengthen the quality management, and guide the characteristics of graduate education to the direction of high quality development.

(1) Build a "Trinity" comprehensive quality assurance system with training units as the main body, the government as the leading role, and pluralistic participation of society.

First, improve the discipline construction system, optimize the system framework. For example, subject evaluation, degree evaluation and degree authorization application will also be the focus of future work.

Second, enhance the concept of the discipline and promote the ecological development of the discipline. With the enrollment of graduate students increasing year by year, the education direction of art colleges and universities has also changed from teaching-to-teaching research or research-based, which requires highlighting the role of discipline construction in college talent training objectives.

(2) Reform and innovation, improve the system, promote the development of connotation.

First, improve the graduate training mechanism. Postgraduate education is the highest level of academic education, which has a very important influence on the training of talent innovation, the enhancement of academic height, the service of social economy, and the promotion of the modernization of national governance ability and governance system.

Second, optimize the structure of tutor team. Adhere to the tutor dynamic adjustment mechanism, system incentive, assessment incentive, the combination of example and incentive breaks the chronic disease of lifelong tenure of supervisor status and seniority title, and the quota of enrollment is inclined to tutors with great academic contribution and high scientific research output.

(3) From "strict entry and wide exit" to "strict entry and strict exit", so as to improve the quality of postgraduate training.

First, strict enrollment management, improve enrollment management methods. The best and most suitable students will be selected by adjusting the admission assessment method in the limited student pool. Colleges and universities should consider increasing the proportion of interview and examination scores in the reexamination stage, focusing on the students' usual results, ideological and political quality, learning attitude and scientific research ability.

Second, optimize the curriculum structure and improve teaching methods. The teaching method has changed from the traditional "teacher's theory" to "student's theory", adopting case, discussion and open teaching, fully exploiting students' independent learning ability and active thinking ability, and improving students' initiative and creativity.

Thirdly, establish the mechanism of diversion and elimination, strengthen the management of training process. In order to improve the training quality, it is necessary to strengthen the management of the training process, from course teaching, thesis proposal, mid-term assessment and thesis defense, to establish the elimination mechanism, give warnings or elimination to those who fail to meet the assessment requirements, improve students' sense of

crisis, stimulate students' learning motivation, change from "strict entry and wide exit" to "strict entry and strict exit", so as to improve the quality of graduate training.

4. Improve the construction of graduate training system, innovate the guidance style of the tutor team, and improve the quality of the tutor team.

(1) Tutors should devote themselves to study and inspire students with their own unique charm with rigorous academic accomplishment. First, the supervisor should be good at conveying the bright vision of the future to the postgraduates, so that the postgraduates could have firm faith, identify their own value, and make contributions to the team. Second, the tutor should understand the students' life, study, marriage and other situations, establish emotional communication, and form a harmonious teacher-student relationship of good teachers and helpful friends. Thirdly, tutors should stimulate students' innovative thinking, pay attention to their interests and hobbies, and mobilize their enthusiasm for innovation.

(2) Students should have the spirit of studiousness, assiduous study. Graduate students should devote themselves to study, constantly surpass themselves and challenge new things. Actively adapt to the tutor, often communicate with the tutor.

(3) The training unit should provide sufficient resources for the tutor team for the cultivation of graduate talents. Training units should organize regular meetings between tutors and tutors, and between tutors and students. The training unit should provide a platform for teachers and students to interact with each other, so as to create deep teacher-student relationship between supervisors and graduate students.

Recommendation for further research

1. To further verify the rationality and scientific of factors affecting the talent training program of art and design graduate students at Shenyang University in Liaoning Province.

2. To further discuss the application of the results to Shenyang University in Liaoning Province to promote the development and reform of graduate talent training program.

3. Moderate popularization of the research results to further verify the practical application effect of the research results.

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