

**CULTIVATION OF CULTURAL AND CREATIVE INDUSTRY TALENTS
TO ART DESIGN MAJORS IN COLLEGES AND UNIVERSITIES
UNDER LIAONING PROVINCE**

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ABSTRACT

The objectives of this research were: (1) to explore the components of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province; and (2) to develop guidelines to cultivate cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province.

The research was a mixed methodology research, including qualitative and quantitative research. The population of the research consisted of 131 college leaders, 902 instructors in 40 colleges and universities under Liaoning Province, with a total of 1033. The sample size was determined by Krejcie and Morgan's Table (1970), and obtained by stratified random sampling technique, totalling 321. The key informants were composed of 16 key informants, including senior administrators of art design major in colleges and universities, graduates of art design majors, leaders of cultural and creative enterprises, policy makers of government cultural and creative industry departments, senior leaders of colleges and universities, mentors of cultural and creative industry teams of colleges and universities, practitioners of cultural and creative industry, and legal adviser of intellectual property protection, obtained by purposive sampling method. The instruments used for data collection were a semi-structured interview form, a five-point rating scale questionnaire, and a focus group discussion form. The statistics used for the data analysis were frequency, percentage, mean, Standard Deviation and Exploratory Factor Analysis, as well as the content analysis was employed.

The research findings revealed that: (1) there were seven components of cultivation

of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province; and (2) there were total of 23 managerial guidelines of cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province.

Keywords: Cultivation of Cultural and Creative Industry Talent, Art Design Majors, Liaoning Province

1. Introduction

Cultural and creative industries are emerging industries with creativity at their core, which have emerged in the context of economic globalization. It has been described as one of the most promising industries in the world in the 21st century. The cultural and creative industries reflect the cultural needs and perceptions of a country's citizens, as well as a country's cultural soft power and international influence. In fact, the cultural and creative industries are among the fastest growing in the global economy. Currently, it has become a pillar industry for the economic development of many countries and regions. The cultural and creative industries integrate and innovate cultural resources, protect and operate intellectual property rights, and then create high-added-value cultural and creative products with huge economic value and far-reaching cultural impact, while also promoting the country's cultural inheritance. (Xiao Yuan, 2021, p.56).

The development of cultural and creative industries cannot be separated from the strong support of colleges and universities in personnel training, scientific research, social services, cultural inheritance and other aspects (Zhu Guanghao, 2017, p.74). The cultural and creative industries of colleges and universities, which rely on deep historical and cultural resources to develop cultural and creative products, have become an effective way for colleges and universities to build campus brand culture. At the same time, the development of cultural and creative industries in colleges and universities will feed back into the arts profession and provide strong support to the design and practice capabilities of professional talents in colleges and universities. It can be assumed that the integration model of cultural and creative industries in colleges and universities is the main trend of the future. For example, through cooperation between cultural and creative industries in colleges and universities and production and sales enterprises, not only research and development and design of cultural and creative products, but also further integration into production, sales and other links through mutual assistance and cooperation. Exploring cultural and creative industries in various forms plays a vital role in promoting their vigorous development and

the training of cultural and creative professionals. Its practical implications include the cultivation of talent in cultural and creative industries by establishing and adjusting the structure of disciplines and specialties; promote the development of cultural and creative industries through scientific research results; promote the marketization and socialization of cultural and creative industries in colleges and universities through the combination of industry-university-research; promote the development of cultural and creative industries through cultural inheritance and innovation.

Although Liaoning's cultural and creative industries have broad prospects in this sub-sector of colleges and universities, art and design majors in numerous colleges and universities still face various difficulties in talent cultivation, management and operation of cultural and creative industries, as well as in building brands of cultural and creative industries on campus: such as (1) the cultivation of cultural creative talents in colleges and universities is not reasonable in knowledge structure and hierarchy; (2) the scientific research strength of cultural creative industry in colleges and universities needs to be improved, and the construction of cultural creative design teams is insufficient; (3) the transformation of achievements of cultural creative industry in colleges and universities is not dynamic enough, and the transformation of achievements of cultural creative product design is gradual, which makes it difficult to form innovative advantages; (4) the development of cultural creative industry in colleges and universities is not closely connected with society, the initiative of university-enterprise cooperation is not strong, and the matching degree of collaborative innovation is not excellent, so it is difficult to achieve sustainable cooperation. (Zhou Sheng, 2020, p.212-213)

As the researchers for cultural creative industries, have profoundly realized that colleges and universities as the source of creative industry talents cultivation culture, is absolutely necessary to explore college art design majors culture creative industry benign development path, and improve the existing evaluation system of talents cultivation, establish the mechanism of protection of intellectual property, Under the mode of industry-university-research integration and university-enterprise cooperation integration of cultural creative industry in colleges and universities, the cultivation of talents in cultural creative industry can be realized.

Therefore, the questions of this research were: (1) what the components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province are; moreover, (2) how to cultivate cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province. The

objectives of this research were: (1) to explore the components of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province; moreover, (2) to develop guidelines to cultivate cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province.

Through this research, the expected benefits include: (1) the development of cultural and creative industries in colleges and universities will benefit the cultivation of talents in cultural and creative industries in Liaoning Province; (2) the development path of the cultural creative industry in colleges and universities in Liaoning will considerably improve the social practice ability of art design students in colleges and universities in Liaoning; (3) the development path of the cultural and creative industries in colleges and universities in Liaoning will provide convenient conditions for cultural and creative enterprises to achieve win-win cooperation; (4) the development of cultural and creative industries in colleges and universities will help build the campus brand culture of colleges and universities in Liaoning Province and enhance their cultural awareness and social influence; (5) the cultivation of cultural creative industry talents in colleges and universities in Liaoning Province will promote the development of the national cultural creative industry.

2. Methodology

The research was mixed methodology design which were comprised of quantitative and qualitative research. There were three processes of research which were research proposal preparation, research procedures, and research report. The research procedures consisted of three steps:

1. Determining the variables of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

The design of the research was qualitative. The researcher studied related literature on concepts, principles and theories, related research on the cultivation of cultural and creative industry talent into art design majors at colleges and universities, and in-depth interviews with key informants. The key informants were comprised of eight key informants, including two senior administrators of art design majors at colleges and universities, two art design graduates, two leaders of cultural and creative enterprises, and two policy makers from the government's department of cultural and creative industries. The selection criteria were sufficient understanding and relevance of cultural and creative industry talent cultivation in art design majors at colleges and universities, most of the key informants were senior leaders with excellent administrative skills, and a purposeful sampling method was

used. The researchers employed a semi-structured interview form. Data collection was performed by the researcher and the collected data was analyzed by content analysis.

2. Exploring the components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

The design of the research was quantitative. The researcher used the variables of cultivation of cultural and creative industry talents to art design majors in colleges and universities from step (1) to prepare a questionnaire as an instrument to collect data from samples in order to identify components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province. The scope of the questionnaire survey is mainly for the faculty and staff of 40 art and design undergraduate colleges and universities in Liaoning Province. The population includes 131 college leaders, 902 instructors in 40 colleges and universities, with a total of 1033 (total number). The sample size was determined by Krejcie and Morgan's Table (1970), totaling 292. The researcher added 10% of sample to be 321 and obtained by stratified random sampling technique, proportional sampling technique, and simple random sampling technique.

The researcher employed a questionnaire which composed of three parts; Part I: Demographic variables (Checklist), Part II: Variables of cultivation of cultural and creative industry talents to art design majors in colleges and universities (Five-level rating scale), and Part III: Suggestion (Open Ended). 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's Alpha at ≥ 0.80 . The instrument, the cultivation of cultural and creative industry talents to art design majors required the respondents to determine the degree to which each statement reflecting the Components of Effectiveness. Each statement was to measure on a 5-point Likert's scale (1932): 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree.

High score on the scale indicated the positive levels of cultivation of cultural and creative industry talents to art design majors. As for measuring the items, cultivation of cultural and creative industry talents to art design majors was considered from the mean score of the answer arranged into five perception levels. The mean score was calculated by using the evaluation criteria of Best (1977), which was classified into five levels. Therefore, the range of the measurement score and the mean of the cultivation of cultural and creative industry talents to art design majors scale was classified into five perception levels

of cultivation of cultural and creative industry talents to art design majors. For the interpretation criteria to classify the mean score, the researcher used the measurement criteria according to the concept of Best (John W. Best, 1997: 190).

The questionnaires were sent by online, mail, and researcher. The data of demographic variables was analyzed by descriptive statistics; frequency, and percentage. The variables of Cultivation of Cultural and Creative Industry Talents to Art Design Majors in Colleges and Universities were analyzed by descriptive statistics; arithmetic mean ($\bar{X}$) and Standard Deviation ($\overline{S.D.}$). The components of Cultivation of Cultural and Creative Industry Talents to Art Design Majors in Colleges and Universities were analyzed by Exploratory Factor Analysis (EFA).

3. Developing the managerial guidelines on cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

The design of the research was qualitative. The researcher used each component of cultivation of cultural and creative industry talents to art design majors in colleges and universities from step (2) to develop the managerial guidelines on cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province by using Focus Group Discussion. The key informants were comprised of eight key informants, including two senior leaders of colleges and universities, two mentors of the cultural and creative industries team of colleges and universities, three practitioners of the cultural and creative industries, and one legal adviser for intellectual property protection. The criteria for selection were sufficient understanding and relevance of the cultural and creative industry talent cultivation of art design students in colleges and universities, and familiarity with the development and operation of the cultural and creative industry, and purposive sampling method was used. The researcher was a facilitator for Focus Group Discussion form. The data from focus group discussion was analyzed by content analysis.

3. Results and discussion

The result of data analysis from research instruments were presented in 3 sections as follows:

Section 1: Result of content analysis on variables cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province.

From review of literature, the researcher has studied the scope of content from related concepts, principles, theories, and related research concerning with cultivation of cultural and creative industry talents to art design majors in colleges and universities. From the outline of the

scope of content from review of literature and related research, there were seven main variables, and quite a number of sub-variables generated therefrom. Then, the research has prepared semi-structured interview from to conduct interview from eight key informants who were senior administrators of art design major in colleges and universities, graduates of art design major, leaders of cultural and creative enterprises, and policy makers of government cultural and creative industry departments, obtained by purposive sampling method. There were 114 variables from interview of key informants. The researcher has employed content analysis. As result, total 114 variables were found and prepared a research instrument as a five-point rating scale questionnaire. The quality of instruments has been verified by Content Validity and Reliability. For Content Validity of questionnaire, the researcher has sent a questionnaire to five experts for verification. The Item-Objective Congruence (IOC) was used to evaluate the items of the questionnaire based on the score range from 0 -1 +1. The items that had scores lower than 0.6 were revised. On the other hand, the items that had scores higher than or equal to 0.6 were reserved. As a result, it was found that there were 110 items of questionnaire. For Reliability of questionnaire is a way of assessing the quality of the measurement procedure used to collect data. The researcher has sent out 30 questionnaires to collect data from non-samples in order to consider a result of reliability. Cronbach's alpha coefficient on or above 0.80 means adequate reliability to determine the internal consistency or average correlation of items in a research instrument to measure reliability of the questionnaire. As a result, Cronbach's alpha coefficient was at 0.944 which can be used to describe the reliability of questionnaire.

Section 2: Result of data analysis to examine the components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province for research objectives 1.

In this step, 321 questionnaires were distributed and all questionnaires were effectively recovered, with an effective response rate of 100%.

Part I: Result of Data Analysis on Questionnaire: Demographic Information

According to the location distribution and discipline structure of colleges and universities in Liaoning Province, the respondents of this research come from educational administration leaders and instructors of 40 colleges and universities in Liaoning Province.

Part II: Result of Data Analysis on Questionnaire: Variable analysis of components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

The researchers analyzed the arithmetic mean ($\bar{x}$) and Standard Deviation (S.D.) by comparing the derived arithmetic mean to the criteria based on Best's concepts. It showed

the arithmetic mean, standard deviation, and level of each variable that was a variable of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province. It was summarized that overall, 110 questions the arithmetic mean ($\bar{x}$) was between 3.75-4.33, indicating that the respondents have an opinion on the level value of the variable by the arithmetic mean ($\bar{x}$) was all high, Standard Deviation (S.D.) was between 0.75-1.02, indicating that respondents have quite different opinions on the variable. Perform descriptive statistical analysis on all scale questions, the maximum and minimum values were between 1-5, indicating that there were no extreme values, and the average of arithmetic mean ($\bar{x}$) was 4.04, indicating that the agreement was high. The average of Standard Deviation (S.D.) was 0.89, indicating that it basically conformed to the normal distribution.

Part III: Result of Data Analysis on Questionnaire: Exploratory Factor Analysis of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

1. KMO-Meyer-Olkin and Bartlett's Test

Table 1: Shows KMO-Meyer-Olkin and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.947
Bartlett's Test of Sphericity	Approx. Chi-Square	27805.318
	df	5995
	Sig.	.000

It was summarized that the KMO test results of the data collected from the research were .947. Kaiser and Rice studied KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) to measure the suitability of the data on whether factor analysis techniques should be used and concluded that if KMO values ≥ 0.8 , then the data set could use factor analysis well. Therefore, this set of data was suitable for good Factor Analysis. Testing the relationship between variables by statistical values, Bartlett's Sphericity Test at statistical significance (Sig $0.000 \leq 0.05$) indicated that there was the coefficient matrix of variables. Therefore, the resulting information was appropriate to conduct further factor analysis.

2. Data Analysis Result on Questionnaire: Eigenvalues, Percentage of Variance, Percentage of Cumulative Variance.

This phase of analysis used factor extraction by Principle Component Analysis (PCA) with orthogonal rotation et.al and varimax rotation. The used criterial for consider factors were as follows; (1) 0.70 or higher was a practically significant factor loading, (2) eigenvalues greater than 1 according to Kaiser's Criterion, and (3) there were more than three components (Hatcher). When considering the above criteria, the number of components and the variance of the variables were obtained as shown in Table 2.

Table 2: Shows Data Analysis Result on Questionnaire: Eigenvalues, Percentage of Variance, Percentage of Cumulative Variance

Components	Rotation Sums of Squared Loadings		
	Eigenvalues	Percentage of Variance	Percentage of Cumulative
1	29.172	12.542	12.542
2	7.225	9.826	22.368
3	6.028	9.559	31.927
4	5.551	8.890	40.817
5	5.348	7.959	48.776
6	4.650	7.360	56.137
7	3.830	5.667	61.804

From Table 2, it was summarized that the number of components of cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning province. It was found that there were seven components with an Eigenvalues greater than 1. When rotating the axis, it explained a total variance of 61.804 percent. It was generally believed that the total variance interpretation rate of the extracted factors was greater than 60%, indicating that sufficient information has been extracted. The validity of the scale was considered to be good.

3. The factor loading, variables described in each of the main components after rotating the axis.

Table 3: Shows components of cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province.

Order	Components	Number of Variables	Factor Loading
1	Component 1	19	0.705-0.789
2	Component 2	15	0.702-0.743

Order	Components	Number of Variables	Factor Loading
3	Component 3	14	0.702-0.755
4	Component 4	14	0.703-0.774
5	Component 5	14	0.702-0.771
6	Component 6	11	0.709-0.767
7	Component 7	9	0.702-0.775
	Total	96	0.702-0.789

Based on the results of the analysis of components of cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province using Exploratory Factor Analysis.

Component 1: Cultural and creative industry talents cultivation system. The major findings were revealed as such because of the level of development of the cultural and creative industries, talent was the decisive factor. The cultivation of talent in the cultural and creative industries was a complex and ambitious project. Colleges and universities were essential bases for the development of cultural and creative talent. Therefore, colleges and universities need to build an all-round, multi-faceted and systematic talent cultivation system for the cultural and creative industries. This research finding was in accordance with the theories or research of Liu Jianni & Zhang Yunxiang (2020, p.44) and Zhang Baosheng & Wang Xiaomin (2017, p.80) which was found that the talent cultivation mode to be systematic and operable, facing specific cultivation objects, through certain cultivation approaches and methods, following certain cultivation mechanisms.

Component 2: Intellectual Property protection. The major findings were revealed as such because with the development of science and technology and the rise of the cultural and creative industries, the field of application of intellectual property rights has become more and more extensive, and the protection of intellectual property rights has played an increasingly significant role in the development of the cultural and creative industries. Until now, the protection and utilization of intellectual property rights has been the foundation for the existence and development of cultural and creative industries. This research finding was in accordance with the theories or research of Wu Wangyun (2020, p.2) which was found that the cultural creative industry, the identification and protection of the originality of cultural products is an important prerequisite and foundation for the development of the industry. Moreover, from the research of Zhang Jin (2021, p.159), it was found that

enhance the awareness of intellectual property protection in cultural and creative industries, improve relevant intellectual property laws and regulations, corresponding to the research of Zhang Baosheng & Wang Xiaomin (2017, p.81).

Component 3: Incubation of cultural and creative industries. The major findings were revealed as such because the incubation of cultural and creative industries can provide a favorable environment for their development, and help cultural and creative enterprises, including those in colleges and universities, withstand external risks and develop rapidly. The incubation of cultural and creative industries was also an influential way to strategically locate cultural and creative industries in the future. This research finding was in accordance with the theories or research of Bu Xiting & Li Wei, 2019 (p.105) which was found that cultural and creative industry incubator is an important carrier to speed up the construction of cultural and creative industry bases and regional characteristic cultural and creative industry clusters. Also, the findings were in the same direction with Li Jiao (2021, p.78).

Component 4: Integration of Industry-University-Research. The major findings were revealed as such because the integration of industry-university-research integrates industry, university and research institution together to form the best talent cultivation mode, which can not only strengthen the efforts of colleges and universities to train talents in cultural and creative industries, accelerate the transformation of cultural innovation achievements, but also promote the development of cultural and creative industries in colleges and universities. Thus, it can be said that the integration of industry-university-research has opened up an effective way to cultivate talents in the cultural and creative industries in colleges and universities. This research finding was in accordance with the theories or research of Liu Shuoshuo (2021, p.82) which was found that industry-university-research integration gives full play to the essential characteristics of colleges and universities, deepens the functions of talent cultivation and scientific research. Moreover, from the research of Wang Jian & Li Yue (2016, p.38), it was found that the integration of industry-university-research conforms to the needs of economic and social development, strengthen the efforts of colleges and universities to cultivate talents, and cultivate high-quality talents in cultural and creative industries, corresponding to the research of Xu Li & Liu Meiying (2018, p.73).

Component 5: University-Enterprise Cooperation. The major findings were revealed as such because in the talent cultivation of the university-enterprise cooperation model, universities, enterprises and students promote each other, which helps universities and

enterprises to share resources and complement each other's advantages. The university-enterprise cooperation model provides excellent guarantees for the practical skills and professional qualities of students and plays an irreplaceable role in improving the effectiveness of teaching and the quality of cultural and creative industry talent cultivation. This research finding was in accordance with the theories or research of Zhu Guanghao (2017, p.75) which was found that through university-enterprise cooperation, not only the knowledge output of colleges and universities can be realized, but also the scientific research and technology level of enterprises can be improved to achieve mutual benefit and win-win situation. Moreover, from the research of Su dan (2021, p.118-119), it was found that art design majors can use their own advantages to explore the transformation mode of achievements, and use the platform of university-enterprise cooperation to carry out in-depth practical teaching and transform the application into design products or works of art, corresponding to the research of Wang Lin (2019, p.69).

Component 6: Cultural and creative industry parks or clusters. The major findings were revealed because cultural and creative industrial parks or clusters, as an essential vehicle and form for the development of cultural and creative industries, provide excellent service platforms and industrial-scale aggregation effects. It has a strong attraction for cultural and creative talent and plays a vital role in the development of the cultural and creative industries in colleges and universities. It is also the basis and guarantee for the massive development of the cultural and creative industries. This research finding was in accordance with the theories or research of Wang Ganhou (2015, p.30) which the continuous evolution of urban space, human resources, creative industry, cultural market and the demand for cultural and creative products and services attracts research and development talents and artistic talents to start businesses in cultural and creative industry clusters. Also, the findings were in the same direction with Zhou Yijun (2016, p.271).

Component 7: Evaluation system for project research and development. The major findings were revealed as such because the purpose of the research and development project evaluation system is to study the feasibility of research and development projects, to make comprehensive projections and demonstrations of projects, and to determine the future development prospects of projects. A comprehensive, complete and diversified evaluation system is the basis for ensuring the success of a design and development project, including the positioning of the design and development project and the expected results, as well as the program management of the research and development process. This research finding was in accordance with the theories or research of Wang Lili (2020, p.117)

which was found that the evaluation system should conform to the observation points and data indicators of the evaluation object, and construct a systematic, objective and diversified evaluation system. Also, the findings were in the same direction with Zhang Baosheng & Wang Xiaomin (2017, p.81).

Therefore, the seven components of the research results are important and cause effectiveness for the cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province.

Section 3: Result of data analysis to develop the managerial guidelines on cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province for research objectives 2.

The focus group discussion was moderated by the researcher. According to the results of research objective 1, the focus group discussion consisted of seven components. It included the culture and creative industries talent cultivation system, intellectual property protection, incubation of cultural and creative industries, integration of industry-university-research, university-enterprise cooperation, cultural and creative industry parks or clusters, and evaluation system for project research and development. In an atmosphere of equality and relaxation, the experts had a full and detailed discussion and deduced the development direction of research objective 2, the managerial guidelines on cultural and creative industry talents cultivation to art design majors in colleges and universities under Liaoning Province. In the end, 23 management guidelines were proposed for cultivation of cultural and creative industry talent in art design majors at colleges and universities under Liaoning Province.

5. Conclusion

From the research objectives, major findings were revealed as follows:

1. There were seven components of cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province which consisted of Cultural and creative industry talents cultivation system, Intellectual Property protection, Incubation of cultural and creative industries, Integration of Industry-University-Research, University - Enterprise Cooperation, Cultural and creative industry parks or clusters and Evaluation system for project research and development.

2. There were total 23 managerial guidelines of cultivation of cultural and creative industry talents to art design majors in colleges and universities under Liaoning Province. Details were as follows:

Component 1: Cultural and creative industry talents cultivation system. There were five

managerial guidelines which were (1) strengthen the self-protection consciousness of intellectual property of cultural and creative industries in colleges and universities; (2) pay attention to the cross integration of various disciplines of art design majors; (3) formulate curriculum plans for the cultivation of cultural and creative industry talents in colleges and universities; (4) to build a high-level teaching team of art and design majors; and (5) improve the creative-oriented talent training and evaluation system.

Component 2: Intellectual Property protection. There were three managerial guidelines which were (1) strengthen the self-protection consciousness of intellectual property of cultural and creative industries in colleges and universities; (2) define the scope of intellectual property protection; and (3) to strengthen the standardization of intellectual property protection.

Component 3: Incubation of cultural and creative industries. There were three managerial guidelines which were (1) establish the incubation chain of cultural and creative industries in colleges and universities; (2) to clarify the function of cultural and creative industry incubators in colleges and universities in cultivating talents of art and design majors; and (3) establish incubation programs for cultivating talents of cultural and creative industries in colleges and universities.

Component 4: Integration of Industry-University-Research. There were three managerial guidelines which were (1) explore the cooperation mode of industry-university-research integration; (2) promote innovation and practical teaching of art design major through industry-university-research cooperation; and (3) improve the transformation of scientific research achievements in the integration of industry-university-research.

Component 5: University-Enterprise Cooperation. There were three managerial guidelines which were (1) explore the educational model of university-enterprise cooperation and the practical operation method of the fusion of production and education; (2) explore the transformation mode of the achievements of creative research and development projects in university-enterprise cooperation; and (3) use cultural creative enterprises to indirectly or directly participate in teaching to promote the cultivation of practical and innovative ability of art design majors in colleges and universities.

Component 6: Cultural and creative industry parks or clusters. There were three managerial guidelines which were (1) make effective use of the industrial chain of cultural and creative industry parks or clusters to contribute to the teaching research and talent cultivation of art design majors in colleges and universities; (2) make full use of the demand for cultural and creative industry talents in cultural and creative industry parks or clusters, and increase employment opportunities for art and design professionals in colleges and universities; and (3) make full use of the scale effect and agglomeration effect of cultural and creative industry parks

or clusters to develop cultural and creative industries in colleges and universities.

Component 7: Evaluation system for project research and development. There were three managerial guidelines which were (1) strengthen the supervision and control of cultural and creative product research and development projects in colleges and universities; (2) to establish a comprehensive and systematic evaluation system for research and development projects, as well as a diversified evaluation perspective; and (3) strengthen the communication and cooperation between various departments in the development of cultural and creative products in colleges and universities.

6. Recommendations

1. Recommendation for Policies Formulation

(1) Colleges and universities should establish special research centers for cultural and creative industries, coordinate cultural and creative enterprises, research institutions and relevant government departments, and be responsible for coordinating cultural and creative design and research projects.

(2) Colleges and universities should hire professional legal counsel for intellectual property protection and obtain legal support from relevant government departments to provide security guarantee for the development of cultural and creative industries in colleges and universities.

(3) The Ministry of culture and the provincial department of education should help art design majors of colleges and universities to formulate a culture and creative industry talent cultivation and evaluation system suitable for their own development characteristics.

(4) Strengthen the guiding role of the government in the integration of industry-university-research cooperation, and shift to the coordinated development of "government-customer-industry-university-research".

2. Recommendation for Practical Application

(1) Colleges and universities art design majors should add interdisciplinary and integrated courses, such as "Creativity + practice" and "Creativity + Industry", guided by the cultivation goal of talents in cultural and creative industries.

(2) For the purpose of effectively improving students' professional practice ability, colleges and universities should be encouraged to build university-enterprise cooperation design platforms of different levels, levels and forms.

(3) Colleges and universities should introduce top-level teachers with cross-professional and interdisciplinary teaching ability according to their teaching structure, relax

the proportion of full-time and part-time teachers, and hire mentors from cultural and creative enterprises outside the university to supplement the teaching force.

(4) Make use of the regional development characteristic resources of cultural and creative industry parks and clusters to avoid homogenized development and create a culture and creative industry talent training environment with its own characteristics.

3. Recommendation for Further Research

(1) Pay close attention to the development trend of the cultural and creative industry and the teaching reform and exploration of the art design majors, further improve the talent cultivation system of the cultural and creative industry in colleges and universities of Liaoning Province, and match the scientific, reasonable and diversified evaluation system.

(2) Profoundly understand the characteristics of knowledge integration and interdisciplinary cross of cultural and creative industries, take the cultivation of students' innovative ability and practical ability as the guidance, make full use of the relevant supporting policies of the government, further deepen the dimension and level of industry-university-research integration of colleges and universities in Liaoning Province, and develop more flexible university-enterprise cooperation mode.

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