EFFECTIVENESS FOR NETWORK EDUCATION MANAGEMENT OF ART DESIGN PROGRAM IN COLLEGES AND UNIVERSITIES UNDER LIAONING PROVINCE

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Abstract

The objectives of this research were: (1) To examine the components of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province; and (2) To develop the implementation guidelines of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province. The research was mixed methodology design which were comprised of quantitative and qualitative research. The population included professional instructors, educational administrators in Art Design Program from 22 colleges and universities, totaling 2193. Sample was 325 professional instructors, educational administrators with stratified sampling technique. The instruments for data collection included semi-structured interview, questionnaire, and note taking by Focus Group Discussion. Data analysis included descriptive statistics and Exploratory Factor Analysis. Major Findings: (1) The components of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province included 5 components: Network teaching quality management; Network education platform management; Network education organization management; Network education features management; and Network education resource management; and (2) The guidelines of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province was found that there were total 15 guidelines: Strengthening the management of network teaching evaluation system; Establishing network teaching quality

assurance system; Strengthening the management of network teaching process supervision; Developing professional network teaching platform; Strengthen platform resource management; Strengthening intelligent education platform management; Emphasizing network leadership management; Standardizing network education system management; Paying attention to people-oriented management; Paying attention to the management of students' interest in autonomous learning; Paying attention to individualized learning management of students; Paying attention to the information management of network education; Strengthening management of network education facilities; Strengthening the management of network education personnel; and Strengthening the construction of campus network.

Keywords: Effectiveness, Network Education Management, Art Design Program, Liaoning Province

1. INTRUDUCTION

In the 21st century, economic, political, cultural, scientific and technological globalization has been established, and human society has entered a new era of network information (Fang Lixiang & Zhao yu.2020:109-114). China's network education began in 1994, and the state has implemented the educational research network demonstration project. In 2012, the Ministry of Education issued the Ten-year Development Plan for Educational Informatization (2011-2020). The circular clearly pointed out that driving the modernization of education with information technology, strengthening the quality of education management, and achieving all-round innovation in educational management thoughts, concepts, methods and means (Chinese education informatization. 2012: online). In April 2018, the Ministry of Education released the "Education Informatization 2.0 Action Plan" in order to further run online education, strengthen "Internet +" education and realize the development of modern education. The implementation of this plan changed the concept of education management. Under the background of national network education, colleges and universities in Liaoning Province actively explored the management concept of network education and leaded the education modernization with education informatization. According to undergraduate teaching network in Liaoning province in December 2020 the network resource sharing data, there were few network resource-sharing courses of undergraduate art science in Liaoning Province. The construction and management of resource platform of art design major needed to be improved. According to the information provided on the website of the Education Department of Liaoning Province, as of December 2020, most of the ordinary undergraduate colleges and universities in Liaoning province lacked high-quality network teaching equipment and network teaching environment guarantee, and there were

few intelligent virtual network classrooms. Intelligent network education environment management was an urgent problem to be solved. Therefore, it was urgent to improve the effectiveness of network education management of art design specialty in Liaoning Province.

Effective network education management provided more high-quality resources for teachers and students majoring in art design, and was more conducive to cultivating and developing students' innovative ability of independent learning and personalized learning. Therefore, the art design majors in colleges and universities should implement effective network education management strategies to provide theoretical basis and data support for the network education management of art design majors in Universities and colleges under Liaoning Province.

The researcher worked as a professional teacher of environmental design with 14 years of experience in teaching environmental design courses. Under the trend of information network education and efficiency enhancement of network education of art design program, the components and implementation guidelines of the effectiveness for network education management of art and design program in colleges and universities under Liaoning Province would be determined. Consequently, the research title "Effectiveness of Network Education Management for Art Design Program in Colleges and Universities under Liaoning Province" would be conducted.

2. RESEARCH QUESTIONS

(1) What are the components of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province?

(2) What are the implementation guidelines of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province?

3. RESEARCH OBJECTIVE

(1) To examine the components of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province.

(2) To develop the implementation guidelines of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province.

4. RESEARCH METHOD

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: Step1: Determining the effectiveness variables of network education management for Art Design Program in Colleges and Universities under Liaoning Province; Step2: Examining components of effectiveness for network education management of Art Design Program in Colleges and Universities under Liaoning Province; Step3: Developing the implementation guidelines on effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province. The research population included professional instructors, educational administrators who came from Art Design Program in colleges and universities under Liaoning Province, totaling 2193. Sample size was determined by Krejcie and Morgan's table (1970). Sample was 325 professional instructors, educational administrators with stratified sampling technique who came from 22 Colleges and Universities: Lu Xun Academy of Fine Arts; Northeastern University; Liaoning University; Dalian Polytechnic University; Shenyang Jianzhu University; Shenyang Normal University; Shenyang Aerospace University; Shenyang university; Shenyang University of Technology; University of Science and Technology Liaoning; Dalian University of Technology; Liaoning University of Technology; Bohai university; Dalian university; Dalian Nationalities University; Liaoning University of Petroleum Technology; Dalian Ocean University; Dalian Medical University; Dalian Jiaotong University; Dalian University of Foreign Studies; and Dalian Neusoft Institute of Information. The instruments for data collection included semi-structured interview, questionnaire, and note taking by Focus Group Discussion. First of all, researchers used semi-structured interview instruments to collect more variables as part of the questionnaire variables on the basis of relevant literature and research. Secondly, researchers used questionnaires instruments to collect data of Descriptive statistics and inferential statistics .The questionnaires was a five-rating scale questionnaire that composed of three parts; Part I: Demographic variables (Checklist), Part II:Variables of Network Education Management (Five-level rating scale), and Part III : Recommendation (Opened End). Questionnaire was developed and examined by the following steps: 1) Studying principles, concepts, theories; related literature and researches to be the framework for developing the questionnaire; 2) Examining the content validity of the questionnaire with Index of Item - Objective Congruence (IOC) technique by 5 experts; and 3) Modifying questionnaire and making a try-out with 5 colleges and universities, 6 of each, in total of 30 units, and the value of Cronbach's alpha coefficient for reliability was

0.912 greater than 0.900. So the questionnaire is reliable. Finally, researcher used the note-taking instruments to collect data through Focus Group Discussion. The Focus Group Discussion table is divided into the following two parts: Part I: Population information of key informants. There were 9 key informants in total, including 3 professional teachers, 3 educational administrators (deans) and 3 network platform experts from 3 excellent universities. Part II: Question: What is the management policy of each component of network education effectiveness management of art design major in Universities in Liaoning Province. The statistics used for data analysis were the descriptive statistics which included frequency, percentage, mean, and standard deviation, as well as the inferential statistics which included Exploring Factor Analysis.

5. RESEARCH RESULTS

1. Result of Data Analysis for Research Objective 1.

It was found that overall, 65 questions the arithmetic mean ($\bar{x}$) was between 3.97-4.31, indicating that the respondents has an opinion on the level value of the variable by the arithmetic mean ($\bar{x}$) from medium to high, standard deviation (S.D.) was between 0.678-0.936, indicating that respondents has a little different opinions on the variable. In addition, Bartlett's Test of Sphericity, test statistics testing variables to see if they were related as shown in Table 1.

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

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	24914.494
	df	2080
	Sig.	.000

From Table 1, the KMO test results of the data collected from the research were .952 that was more than 0.800. According to Kaiser-Meyer-Olkin Measure of Sampling Adequacy, the data set could use Factor Analysis well. Bartlett's Sphericity Test at statistical significance (sig 0.000 ≤ 0.05) indicate that there was the correlation coefficient matrix of variables. Therefore, the resulting information was appropriate to conduct further factor analysis.

This phase of analysis used factor extraction by Principle Component Analysis (PCA) with orthogonal rotation et.al and varimax rotation. The used criterial for considerting factors were as follows; (1) 0.35 or higher was a practically significant factor loading, (2) eigenvalues greater than 1 according to Kaiser's Criterion, and (3) there were more than 3 variables (Hatcher).

When considering the above criteria, It was found that there were 7 components with an Eigenvalues greater than 1. When rotating the axis, it explained a total variance of 73.610 percent, but according to the above 3 criteria, the components that met certain criteria were components 1-5, it was found to be able to explain a total variance of 70.069. In addition, the factor loading, variables described in each of the main components after rotating the axis as shown in Table 2.

Table 2: Showed Components of network education management.

Order	Components	Number of Variables	Factor Loading
1	Component 1	12	0.581-0.798
2	Component 2	18	0.454-0.673
3	Component 3	13	0.577-0.742
4	Component 4	12	0.562-0.797
5	Component 5	10	0.564-0.746
	Total	65	**2.738-3.756**

Researcher based on the Exploratory Factor Analysis, from the table 2, it was explained that the components of effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province. Consisted of 5 components: Network teaching quality management; Network education platform management; Network education organization management; Network education features management; and Network education resource management.

2. Result of Data Analysis for Research Objective 2.

Through Focus Group Discussions, the researcher summarized the data provided by informants , and finally came up with 15 guidelines which included as followed: Strengthening the management of network teaching evaluation system; Establishing network teaching quality assurance system; Strengthening the management of network teaching process supervision; Developing professional network teaching platform; Strengthening platform resource management; Strengthening intelligent education platform management; Emphasizing network leadership management; Standardizing network education system management; Paying attention to people-oriented management; Paying attention to the management of students' interest in autonomous learning; Paying attention to individualized learning management of students; Paying attention to the information management of network education; Strengthening management of network

education facilities; Strengthening the management of network education personnel; and Strengthening the construction of campus network.

6. CONCLUSION / DISCUSSION

1. Conclusion.

From the research objectives, major findings were revealed as follows: (1) There were five components of effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province; and (2) There were total 15 gudielines.

2. Discussion.

(1) Discussion about major findings of the components of the effectiveness of network education management.

There were five components of effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning Province. The major findings were revealed as such. Because through the network teaching quality management, administrators perfected the network teaching evaluation system, established a teaching quality system with evaluation, cleared the development direction of network education, promoted the overall development of network education. Through the network education platform management, administrators analyzed the teaching situation through big data, accurately grasped the teaching effect, and made the teaching process management more intelligent. Through network education organization management, the network level of management team could be improved, the problems of network teaching could be solved in time, and the work efficiency of network education organization could also be improved. Through network education features management, administrators constantly innovated and improved network education management, advocated the idea of information management, created an information teaching management atmosphere, realized the comprehensive information management of educational affairs, and made the education management more intelligent, open and efficient. Through network education resource management, administrators could improve network education facilities, not only ensured the number of basic network facilities, but also builded advanced intelligent classrooms and optimized the network teaching environment. The reserach findings were related to other reserchers as follow: The research of Cao Xun (2016: 3-4) was found that administrators payed attention to the development and management of network education platform in network education management; The research of Zhu Pengyu (2018: 143-144) and Lin Rong (2016: 163-165) were found that administrators payed attention to network education organization management in

network education management; The research of Liu Xiuxia (2019: 94) was found that Administrators pay attention to the features management of network education in the management of network education; The research of Shi Gui ying & Nong Cuiling (2018: 133-135) were found that Administrators payed attention to network resource management in network education management. Therefore, these components were important and caused effectiveness.

(2) Discussion about major findings of inplementation guideline of the effectiveness of network education management for Art Design Program in Colleges and Universities under Liaoning province.

The major findings were revealed as such. Because: in the network teaching quality management, network teaching evaluation system of management was important, Because administrators through the network teaching evaluation system management, could effectively manage the teaching effect and teaching objectives, mastered the teaching level of teachers, real-time control of teaching direction. The network teaching quality assurance system was also important, because through the network teaching quality assurance system, the network teaching quality could be effectively planned, monitored and improved, so as to promote the network teaching quality management. The quality assurance system management of network teaching was importante. Administrators payed attention to the quality assurance system management of network teaching in the quality management of network teaching; Through developing network teaching platform for art design major, not only conforming to the learning characteristics of art design students, but also meeting the teachers' demand for online teaching of art design students, improving the teaching effect of teachers, attracting students to study on the platform for a long time, so as to promote the centralized management of students through network teaching platform. Network resource management was also important, because through the resource management, abundant high quality teaching resources effectively, and dynamically through high quality teaching resources to attract students to study on the platform, and education manager for a large number of students learning information, so as to promote the network education platform management. Through the intelligent education platform management, according to the big data analysis, administrator could accurately mastered teacher's teaching and student's learning, and according to the teaching situation, the real-time updated of teaching resources, realized the dynamic management of teaching; By emphasizing network leadership management, leaders could improve their own network management concepts, and actively organized network management personnel training related knowledge, so as to improve the quality of network education management. By emphasizing people-

oriented management, managers could fully mobilize and gived full play to the initiative and creativity of managers in network education management, so as to improve the work efficiency of managers; By emphasizing the management of students' independent learning interests, administrators could realize the active management of students. Therefore, the big data information obtained by administrators was more accurate and effective, and administrators could track students' learning direction and status in real time, which was the embodiment of the change of administrators' ideas and management characteristics. By emphasizing personalized learning management of students, administrators changed the traditional offline management concept, payed attention to tracking students' learning direction and status through big data, and then adjust teaching methods and content to meet the learning needs of different students, reflecting the characteristics of online education management of administrators. By emphasizing the information management of network education, changing the concept of managers, paying attention to the application of information technology in network education management, making education management more efficient and convenient; By strengthening the management of network education facilities, administrators could timely deal with network equipment failures, formulated perfect rules and regulations for Internet access, and maintained the normal operation of equipment. It was an important part of network education resource management to strengthen the management of network education personnel, rationally allocate and optimize network education personnel, improving the professional quality of network education personnel, and stimulating the enthusiasm of network education personnel. By strengthening the construction of campus network, achieving comprehensive coverage of campus network and solving the problem of slow campus network speed, not only meeting the network speed requirements of teachers in the network platform live teaching, but also meeting the network requirements of managers using information management system.The reserach findings were related to other reserchers as follow: The research of Chen Yan(2021:103-104) and Yang Xuanhui (2020: 75-77) were found that administrators payed attention to network teaching evaluation system management in network teaching quality management. The research of Du Shuzhen (2019: 114-115) were found that administrators payed attention to the construction of professional teaching platform in the management of online education platform. The research of Duan Cunyu (2020: 23-77) which was found that administrators pay attention to the network leadership training of leaders in network education organization management. The research of Chen Lirong (2018: 82-88), Yu Dan & ZhangYifan (2013: 116-117) were found that administrators payed attention to the management of students' interest in autonomous learning in online education.

The research of Huang Shengfeng (2020: 114-115) and Ji Haibo (2021: 163-164) were found that administrators payed attention to the management of network education facilities in the management of network education resources. Therefore, these guidelines were important to improve effectiveness for that component.

7. RECOMMENDATIONS

1. Recommendation for Practical Application.

Recommendation for practical application of network education management of School of Architecture and Art Design, University of Science and Technology Liaoning was as follows:

(1) In network education organization management. In the process of online education management, leaders should standardize the management system of online education and require all managers to manage according to the norms. Established a reward and punishment mechanism for network education management, people-oriented, payed attention to the value of managers, and achieved timely and effective network technical services. Emphasizing information leadership management.

(2) In network education resource management. Strengthening the management of online education facilities. Achieving full coverage of campus network, strengthening the speed, stability and safety management of network. Each major planed to build 8 network classrooms to meet normal network teaching needs, and at the same time, building 2 virtual classrooms to provide efficient teaching environment for network teaching with the application of Internet of Things and big data technology.

(3) In the network education platform management. According to the characteristics of art design specialty, developing art design specialty network teaching platform. Paying attention to the platform of personalized learning, independent learning, network cooperation learning function development. Setting up real-time interactive evaluation function. In terms of basic functions which payed attention to the uploading and downloading of materials and the display of pictures to meet the teaching requirements of art and design courses.

(4) In the network education teaching quality management. Establishing network teaching quality objectives, and establishing teaching quality evaluation standards according to the objectives. In the educational administration, paying attention to the network education management personnel of teaching methods, teaching courseware, teaching process and so on evaluation. Paying attention to the teaching output management, perfecting the evaluation system of students' learning achievements, realizing the multi-dimensional evaluation system, paying attention to

the personalized evaluation of learning achievements. Establishing network teaching quality assurance system, standardizing network teaching system, all staff according to network education management norms, clear, efficient completion of management tasks.

2. Recommendation for Further Research.

Future research will make further questionnaire survey on the basis of this study, expand the sample quantity and improve the data quality. In terms of research methods, regression analysis can be further used to study the influence of different independent variables on dependent variables to make the results more accurate and reliable, therefore make the guideline of effectiveness of network education management of art design majors in universities in Liaoning province become the theoretical basis for the practical application of network education management in Liaoning province and even the whole country.

REFERENCES

Arabie, C. P. (2016). **Educational technology tools in learning management systems influence on online student course satisfaction in higher education.** University of Louisiana at Lafayette. 99.

Baidu encyclopedia. (n.d.). Retrieved Janurary 12, 2021, fromhttps://baike.baidu.com/itemA1/ 3740963?fr=aladdin.

Baidu encyclopedia. (n.d.). Retrieved Janurary 20, 2021, from https://baike.baidu.com/item/ B0/564450?fr=aladdin.

Baidu library. (n.d.). Retrieved Janurary 10, 2021, from https://wenku.baidu.com/view/c3cf0e 20af45b307e87197ac.html.

Baidu library. (n.d.). Retrieved Janurary 20, 2021, from https://wenku.baidu.com/view/6571c 86765ec102de2bd960590c69ec3d5bbdbd1.html.

Cao Xun. (2016). P**reliminary study on measures to strengthen the management of online education colleges at the present stage.** Modernization of education, 3(39), 3-4.

Casiello, A. R. (2019). **Adaptive leadership approaches in online education: A study of trust creation and change management in higher education.** Old Dominion University. 153.

Chen Lirong. (2018). **Status quo and Influencing Factors of Students' Independent Learning in Vocational Colleges based on Internet.** Heilongjiang University, 35(5), 82-88.

Chen Yan. (2021). **Analysis of University teaching management in the Network Era.** The topic of science and technology information research is the analysis of university teaching management in network era, 15 (33), 103-104.

Deng Kangqiao & SongJing. (2013). **Research on university education management based on education quality-oriented network education management mode.** 7(04), 100-104.

Du Shuzhen. (2019). **On the innovative development of university teaching management under the construction of information technology.** International public relations, (4), 114-115.

Duan Chunyu. (2020). **The research on the influence of principal information leadership on teachers' information technology application behavior is based on a meta-analysis of 42 empirical studies.** Distance Education in China, 10(04), 23-77.

Huang Shengfeng. (2020). **The influence of the introduction of network education resources on the teaching management of art colleges and universities.** Art Sea, (11), 114-115.

Liu Jianhua & Ge Yaoping (2020). **Research on the design of intelligent classroom teaching structure based on rain classroom.** 41 (11), 113-116.

Shi Guiying & Nong Cuiling (2018). **Research on university education management mode based on Internet**. Journal of Jilin Institute of Education, 34(12), 133-135.

Wu Dan, Di Qin & Li Xunian. (2020). **Teaching Practice and Research of Hand-painted Expression Based on Network Teaching Platform, Light textile industry and technology.** 13(32), 20-23.

Zhu Pengyu. (2018). **On the management mode of online education and its improvement measures.** The motherland, 20 (04), 143-144.