

Research on the Influence of Information on the Education Management of Art Design Major

Jing Xie^{1, a, *}, and Junxiong Yang^{2, b}

¹ Jose Rizal University, 80 Shaw Blvd, Mandaluyong City, Metro Manila, 1552, Philippines

² YUNNAN Technology and Business University, 10 Jinguan Road, Songming city, Kunming, China

^a xiej1208@gmail.com; ^b xiaoyi539560@163.com

* The corresponding author

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Abstract: In order to meet the new trend of social development, the art design profession needs more and more high-quality compound talents with innovative spirit and practical spirit. Therefore, the education management of art design is particularly important. However, due to the particularity of the art design profession—ideas, ways of thinking, cultural qualities, and learning characteristics, the educational management of art design and the general education management need to be greatly different. This paper studies the influence of information on the education management of art design, and analyzes the influence of information from multiple angles. Research shows that the influence of information on the education management of art design is mainly in the aspects of information transmission, teaching resources and student management, and the influence of information on the education management of art design has played a positive role.

1. Introduction

The art design major cultivates the ability to possess knowledge in the teaching and research of art design, and can work in art design education, research, design, publishing, and cultural and artistic units to engage in art design teaching, research, editing and other aspects. Therefore, the education of art design major should be taken seriously. Xia Yanjing explored the results of the curriculum of undergraduate majors in art design in China^[1]. The cultivation of artistic literacy is the key to the creation of art design. Deng Zhongyun studied the ways of art literacy training for art design majors in higher vocational colleges. He believed that it is necessary to innovate the art education training mode and actively carry out diversified artistic practice activities^[2].

Art design promotes the free development of form and style, accepting different perspectives and free discussion of the school. In terms of ideological concepts, most of the students of art design are exposed to a variety of cultures, wide horizons, lively ideas, and dare to break through the conventions, forming a unique open complex thinking and strong self-awareness for art design students. In terms of thinking style, students of art design majors demand active image thinking, different thinking and creative thinking. Art design creates aesthetic pleasure, and it mainly uses image thinking methods. Image thinking has two characteristics: First, it is to understand and express the world with an intuitive and vivid image. It does not need to be rigorous and logical. In the art design, rigor and logic often represent solidification in thinking. Art design is deadly. The second characteristic of image thinking is that the work is full of emotions. Whether a work of art has value depends on whether the author has given it rich emotions. Good works often have creative stories. In terms of cultural quality, the art profession is generally lower than the general profession, and even the situation of partiality and culture is boring, so there is a certain difficulty in the cultivation of comprehensive quality. In terms of learning characteristics, due to the characteristics of professional curriculum professors, art design professional teaching must adopt the method of continuous class. Sometimes a course needs to be taught for several days, and most of the time is taught by teachers alone. Therefore, the particularity of the art design profession^[3] will inevitably

lead to the speciality of its education management.

Education management is an activity process in which the management organizes and coordinates the education team, gives full play to the role of education manpower, material resources, and financial resources, and utilizes various favorable conditions in education to achieve educational management goals with high efficiency. Research on education management is also being studied by more and more people. For example, Qiu Zhicong's innovation in the teaching management method of primary education under the new curriculum background^[4]; Zhao Lu's enlightenment on improving the effect of overseas study of college students on the education management of overseas study projects in colleges and universities^[5]; Lai Xiaoling, art class in the Internet era Analysis of problems and countermeasures in the management of ideological and political education in colleges and universities^[6]. From the previous studies on education management, it seems that due to professional differences, different professions need to develop different education management systems. The education management of art design majors must reflect the particularity of the students. Encourage each student to express differences and treat them differently by difference. However, the difficulty of management work has also increased, so we urgently need a more convenient, acceptable and effective education management for art design.

With the rapid development of social information, education management has also ushered in new opportunities and challenges. Information not only provides more convenience for educational management workers, but also improves the efficiency of management. Information has led to a fundamental shift in teaching concepts, teaching methods, and teaching resources. The educational management of information technology is slowly developing. Lu Yanfei's research on the new development of education management information towards smart management^[7]; Qiu Guoqie's research on the development of education management information in the Internet age^[8]; Tong YanFen's approach to the construction of higher education management information in the era of big data^[9]; Information construction of graduate education management^[10].

2. Method

2.1 Experimental Design and Data Collection.

This experiment is the study of the influence of information on the education management of art design. Therefore, this paper investigates the art design students of the two institutions through the questionnaire survey method. One of the institutions is information management and the other is an ordinary institution. There were 200 questionnaires in each of the two institutions, and 172 valid questionnaires were collected by the information management institutions, with a recovery rate of 86%; 184 copies were recovered from ordinary colleges and universities, and the recovery rate was 92%. The flow chart of the experimental steps is as follows (Figure 1):

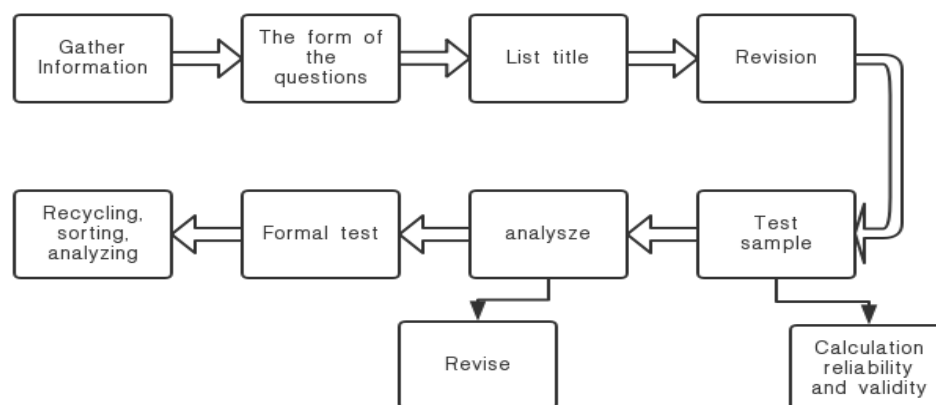


Figure 1. Experimental step flow chart

This study used exploratory factor analysis to analyze test variables. Measurements were made using a five-point Likert scale, with 1 indicating very disagree and 5 indicating very agree.

Exploratory factor analysis is used to find the number of factors affecting the observed variables to reveal the essential structure of the observed variables and to perform dimension reduction. In the case that the influencing factors are not known in advance, the model is established based on the sample data, and the factor analysis is performed by statistical software. The results provide an important basis and guarantee for the verification factor analysis.

Exploratory factor analysis has seven main steps, namely:

(1) Collect Observed Variables. Sampling methods are generally used to collect observational variable data based on actual conditions.

(2) Construct a Correlation Matrix. Based on this matrix, it is determined whether the data is suitable for factor analysis.

(3) Determine the Number of Factors. It is possible to first assume a factor number according to the actual situation, or according to the criterion that the feature root is greater than 1 or the gravel criterion.

(4) Extraction Factor. There are many methods for extracting factors, such as principal component method, weighted least squares method, and maximum likelihood method.

(5) Rotation Factor. Because the initial factor is too comprehensive and difficult to find out, it is necessary to rotate the factor to explain the factor structure. Commonly used rotation methods include orthogonal rotation, oblique rotation, and the like.

(6) Explain the Factor Structure. Explain the factors according to the actual situation and the load size.

(7) Calculate the Factor Score. Use public factors for further research, such as evaluation.

2.2 Data Processing.

Data processing Using SPSS 19.0 software, the sample data was tested for reliability and validity by CFA confirmatory factor analysis.

The primary purpose of the confirmatory factor analysis is to determine the ability of the model of the factor to fit the actual data, attempting to test whether the number of factors and the factor load of the observed variable are consistent with theoretical expectations. Its strength is to allow researchers to clearly describe the details in a theoretical model.

There are six main steps in confirmatory factor analysis:

(1) Define the Factor Model. Includes the number of selection factors and the definition factor load. The factor load is previously set to zero, or other freely varying constant, or a number that varies under certain conditions.

(2) Collect Observations. Obtain observations based on research purposes.

(3) Obtain a Correlation Coefficient Matrix. Obtain a variable covariance matrix based on the original data.

(4) Fit the Model. Choose a method to estimate the factor load for free change. Such as maximum likelihood estimation, progressive distribution free estimation, etc.

(5) Evaluation Model. When the factor model is able to fit the data, the factor load is chosen to minimize the difference between the correlation matrix contained in the model and the actual observation matrix. Commonly used statistical parameters are chi-square fitting index (χ^2), comparative fitting index (CFI), goodness-of-fit index (GFI), and estimated error root mean square (RMSEA). The proposed criteria of Bentler (1990): χ^2/DF (degrees of freedom) ≤ 3.0 , CFI ≥ 0.90 , GFI ≥ 0.85 , RMSE ≤ 0.05 , indicating that the degree of fit of the model is acceptable.

(6) Correct the Model. If the model fitting effect is not good, the model needs to be modified or redefined according to the theoretical analysis to correct the model to obtain the optimal model.

3. Experiment

Collect relevant information on the education management of art and design, and determine the form of the questionnaire as a combination of online and offline. The experiment is also divided

into study and formal research. The investigation is the same as the formal survey. In order to ensure the validity of the measurement, the preliminary scale of the measurement is completed through study. The formal survey questionnaire was revised to the following questions:

- (1) Are you satisfied with the current education management system?
- (2) Do you feel that the school's teaching resources are insufficient.
- (3) Do you think that your school is obviously inadequate for students' after-school management.
- (4) Whether the school's management information can be accurately conveyed.
- (5) Do you have more forms of multimedia in class?
- (6) In addition to the class time, whether it has a feeling of management of the school.
- (7) When you are notified by the school, do you pass the information officially issued by the school instead of between the students.
- (8) Can you know about the extracurricular activities organized by the school?
- (9) In addition to the class, when I study autonomously, does it feel that a lot of information is not found?
- (10) What suggestions do you have for the existing education management system?

In order to eliminate the impact of the questionnaire on the participants, the order of the questionnaires was random. The experimental data were analyzed. Among them, three factors of information transmission, teaching resources and student management were extracted by exploratory factor analysis.

4. Data Analysis and Results

4.1 Reliability and Validity Analysis.

In order to verify the accuracy of the survey results, the content of the questionnaire needs to be tested for reliability. In this experiment, the Cronbach's a coefficient was used to test the reliability of the scale. The Cronbach's a coefficient-consistency table is shown in the following table (Table 1):

Table 1 Cronbach's a coefficient - consistency table

Cronbach's a	<0.7	0.7-0.8	>0.8
consistency	Poor	better	super

The Cronbach's a value of the experiment calculated from the experimental data was 0.79, indicating that the reliability was acceptable.

The analysis of questionnaire validity is divided into two aspects: content validity and structural validity. Whether the content of the questionnaire for content validity represents all the contents of the survey, the questionnaire of this experiment uses the expert consultation method to repeatedly screen and modify the content, so I think the content validity is higher.

The test of the structural validity of the questionnaire was performed by confirmatory factor analysis. Factor analysis was performed based on Bartlett's spherical test and IMO sufficiency test. According to the experimental data analysis, the IMO value is $0.91 > 0.9$. At the same time, the adjoint probability of Bartlett's spherical validity test is $0.00 < 0.05$, indicating that the test variables have high correlation, and the test scale has good reliability and validity.

4.2 Comparative Analysis.

For the collected data processing, draw the following table (Table 2):

Table 2 Questionnaire data sheet

Question	Information college students	Non-information college students
Are you satisfied with the current education management system?	4.5	3.6
In addition to whether or not the class time has a feeling for the management of the school.	4.1	2.7
Can you know about the extracurricular activities organized by the school?	3.9	3.2
Do you feel that the school's teaching resources are insufficient.	0.7	2.4
Whether the school's management information can be accurately conveyed.	4.7	3.9
In addition to attending classes, when I study independently, do I feel that a lot of information is not found.	0.3	1.9
Are you officially posting information through the school when you receive the school's notice?	4.9	4.1
Do you think that your school is obviously inadequate for students' after-school management.	1.2	3.0
Do you have more forms of multimedia in class?	4.4	3.5

It can be seen from the table that the influence of information on the education management of art design is positive, the students' sense of identity is very strong, and the actual help for students is also a lot. The recognition and practical help of the educational management of the two institutions in the information transfer, teaching resources and student management are as follows (Figures 2 and 3):

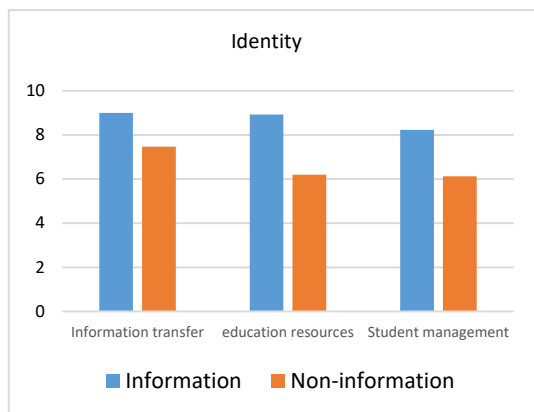


Figure 2. Identity comparison chart

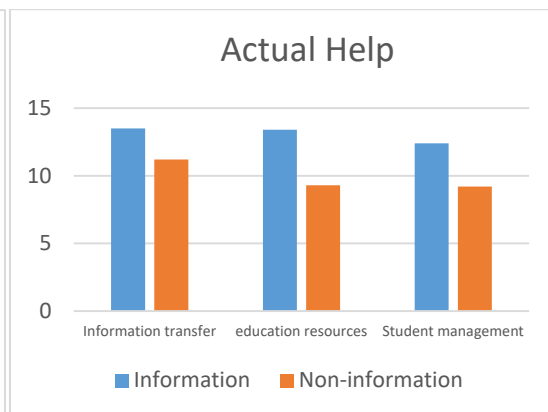


Figure 3. Actual help comparison chart

It can be seen from the figure that both the sense of identity and the actual help in informational education management are higher than non-information.

5. Conclusion

Through experimental research, it is concluded that students of art design majors in information colleges and universities, and ordinary non-information college students have a high desire for education management information. They believe that information education management can

provide them with a better learning environment and will also help campus life.

Of course, this experiment has also given us a lot of inspiration. The development of information requires us to keep pace with education management. However, the new education management method has put forward new requirements and new challenges for managers. This kind of challenge still needs to be continually explored in practice, and it is necessary to constantly work with students to better manage education and provide better service for students.

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