

## Effectiveness of Management Mechanism of Art Design Education in Universities under Liaoning Province

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### ABSTRACT

The objectives of this research were:(1) to explore the components of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province;(2) to propose the guideline to effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

This research was a mixed method between quantitative research and qualitative research. The population includes 1,361 administrators and teachers from 5 colleges and universities in Liaoning Province. Sample were 388 administrators and teachers in 5 colleges and universities. with stratified random sampling method. The researcher determined sample size with Krejcie and Morgan's table, and obtained by the stratified random sampling technique. The instrument used for data collection was a questionnaire with a five-point rating scale, in-depth interviews form and Focus Group Discussion form. The statistics used for data analysis were frequency, percentages, means Standard Deviations and Exploratory Factor Analysis (EFA), and content analysis was employed.

The research findings were: (1) There were five components effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province which consisted of Leadership and organization, Student management and support, Educational curriculum and teaching, Strategic planning and formulation, and Financial management and resource allocation. (2) There are 44 guiding principles for the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

**Keywords:** Effectiveness, Management Mechanism, Art Design Education, Universities of Liaoning Province

## 1. Introduction

The background of the development of educational management in China has laid the foundation for the management of art design education. It plays an important role in the art design discipline of colleges and universities in Liaoning Province. The history of the establishment and development of college art design education in China is different from that in western countries. For example: In terms of curriculum structure, there is a problem of fragmented connection between courses. Courses are mostly patchwork, stacked, and lack of coherence, and the educational philosophy and design principles and objectives of the entire curriculum system cannot be clearly defined. As a result, the professional curriculum design of art colleges is unreasonable, and some curriculum Settings even deviate from the training objectives, the curriculum positioning is vague, and the teaching objectives are inaccurate. There is no confusion about the teacher's location.

As a college teacher majoring in art and design education, the researcher expects to effectively improve the management mechanism of art and design education and play its role in education management through this study. Because the effectiveness of art design education is not only related to the advancement of education reform, but also related to the inheritance and development of culture can meet the requirements of modernization. (1) Help improve the quality of teaching. Through standardized and clear teaching objectives, effective curriculum design, and appropriate teaching methods and assessment means, students' learning effect and satisfaction can be improved. Teachers can adjust and improve their teaching strategies according to the guidance and feedback of the quality management mechanism, so as to make the teaching process more effective and targeted. (2) Evaluate student learning outcomes. Through clear learning objectives and standards, students can clearly understand the learning requirements they need to achieve and receive the necessary guidance and support in the teaching process. At the same time, the quality management mechanism can also provide students with timely feedback and assessment, help them understand their learning outcomes and shortcomings, and further improve their learning ability and skills. (3) Promoting teacher professional development. Through the feedback and evaluation of the quality management mechanism, teachers can understand their own teaching effects and shortcomings, and improve their teaching ability and professional knowledge in a targeted way. At the same time, the quality management mechanism can also

provide teachers with opportunities to communicate and cooperate with their peers, and promote professional growth and common progress among teachers. (4) Promote practice and innovation ability. Quality management mechanism can promote the cultivation of innovation and practical ability. By encouraging students to undertake practical projects, design works and creative expressions, educational management mechanisms can provide students with opportunities for hands-on and practical experience. Such practical activities can cultivate students' innovative thinking, problem-solving ability and practical skills, so that they can better adapt to the actual working environment and market needs. Promote practice and innovation ability. Quality management mechanism can promote the cultivation of innovation and practical ability. By encouraging students to carry out practical projects, design works and creative expressions, the curriculum quality management mechanism can provide students with opportunities for practical operation and practical experience. Such practical activities can cultivate students' innovative thinking, problem-solving ability and practical skills, and make them better adapt to the actual working environment and market demand.

## **2. Research Questions**

1. What are the components of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province?
2. What are the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province?

## **3. Research Objectives**

1. To explore the components of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.
2. To propose guidelines the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

## **4. Research Methodology**

### **1. Population/Sample and key informants**

**Step 1: Examining concept of determining the effectiveness of management mechanism of Art Design Education in Universities**

The researcher review literature of documents and related research, synthesized 20 relevant researches and summarized some variables of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province

In-depth interviews with 10 key informants including deans, project leaders, expert professors and teachers of LuXun University of Fine Arts, Dalian University of Arts, Shenyang Normal University, Shenyang University, and Shenyang Jianzhu University. Through the interview results was conducted to investigate the constituent factors of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

### **Step 2: Exploring the components of the effectiveness of management mechanism of Art Design Education in Universities.**

The population includes 1,361 administrators and teachers in 5 Universities under Liaoning Province.

The sample was 388 administrators and teachers of 5 Universities under Liaoning Province. Determine the sample size by Krejcie and Morgan's table (1970) and sampling with stratified random sampling technique.

### **Step 3: Proposing guidelines the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.**

Focus group discussion 10 key information include of deans, experts, professors and teachers of 5 Universities in Liaoning Province. Due to the different professions and levels of experts and teachers, the researchers classified after criteria for selected by purposive sampling, Establish selection criteria qualification.

## **2. Research instruments**

Three research instruments were used to examine the objectives of this research.(1) Semi-structured interview, (2) A five-point rating scale questionnaire and (3) Focus Group discussion form.

### **2.1 Semi-structured interview form**

Through the semi-structured interview table, mainly by discovering the main factors, the semi-structured interview is preliminarily completed. The interview was mainly conducted in a non-face-to-face way. A total of 10 respondents were sent by mail and online.

2.2 Five-point rating scale questionnaire. The researchers used a three-part questionnaire; Part I: Demographic variables (Checklist), General information of the respondents, totaling 6 items, Part II: Variables on the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province (Five-point rating scale), totaling 36 items, and Part III: Suggestions and additional comments (Open Ended). Each factor is measured on a 5-point Likert's scale.

2.3 Focus Group discussion form 10 key informants to develop the guideline to improve the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

### **3. Data collection**

(1) Researchers contacted key informants and sent interview questionnaires by email, telephone. (2) This part of the questionnaire can be distributed on site collected through online links. About 388 questionnaires need to be completed in about 2 weeks. The sample has been directly informed of content scope and research objectives, and received a formal permission letter from the university to the administrator and teachers, allowing to conduct and collect data from faculty in accordance with a letter of approval issued by the relevant authority. and (3) Focus Group Discussion can be conducted on site with researchers leading participants and open-ended discussions. the researcher acts as a facilitator.

### **4. Data analysis**

(1) Conduct content analysis on the results of review literature and in-dept interview (2) Data for demographic variables were analyzed using descriptive statistical methods; frequencies and percentages. Variables and components of effectiveness of supporting for international students were analyzed using descriptive statistics; mean, standard deviation (SD). Exploratory Factor Analysis (EFA).

### **5. Results**

(1) There were five components effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province which consisted of Leadership and organization, Student management and support, educational curriculum and teaching, Strategic planning and formulation, and Financial management and resource allocation. (2) There are 44 guiding principles for the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

The information obtained from the interviews, researchers summarized a total of 75 variables based on literature and expert interviews, and on this basis compiled a research tool, the five-point subscale questionnaire. The quality of the tool is tested by content validity and reliability. As for the content validity of the questionnaire, the researchers sent the questionnaire to five research experts for verification. Item Objective Consistency (IOC) is used to evaluate items in the questionnaire, with a score range of -1,0, +1. Items with scores below 0.5 have been corrected. On the other hand, candidates with a score of 0.6 or higher or equal will be retained. A total of 62 questionnaires were found. 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 determines the internal consistency or average correlation of items in a survey instrument to gauge reliability of the questionnaire. As a result, Cronbach's alpha coefficient was at 0.995 which can be used to describe the reliability of questionnaire. Test the quality of the instruments through content validity and reliability.

**Table 1:** Frequency and percentage results of questionnaire data analysis.

General information	Frequency	Percentage
1. Gender		
male	205	52.8
female	183	47.2
2. age		
Lower than 25	11	2.8
25-35 years old	175	45.1
36-45 years old	177	45.6
Older than 45	25	6.4
3. Professional title		
Teaching assistant	40	10.3
lecturer	129	33.2
associate professor	168	43.3
professor	51	13.1
4. Education background		
Bachelor	14	3.6
Master	315	81.2
Doctor	59	15.2
5.Type of work		
Teacher	299	77.1
Administrator	89	22.9

Table 1 shows that a total of 388 respondents participated in the survey, including 205 males (52.8%) and 183 females (47.2%). Among them, 11 people aged lower than 25 accounted for 2.8%, 175 people aged 25-35 accounted for 45.1%, 177 people aged 36-45 accounted for 45.6%, and at least 25 people older than 45 accounted for 6.4%. In terms of

professional titles, 40 teaching assistants accounted for 10.3%, 129 lecturers accounted for 33.2%, 168 associate professors accounted for 43.3%, and 51 professors accounted for 13.1%. Among the respondents, 14 had bachelor's degrees, accounting for 3.6%, 315 had master's degrees, accounting for 81.2%, and 59 had doctoral degrees, accounting for 15.2%. According to the type of work, 299 people is teacher, accounted for 77.1%, and 89 people is administrator in colleges and universities accounted for 22.9%.

**Table 2:** Descriptive statistics of questionnaire data analysis.

(n=388)

Variables	$\bar{X}$	S.D.	Level	SK	KU
Q1. The feedback mechanism helps to understand the needs of students and staff, so as to improve management effectiveness.	4.29	0.777	Highest	-0.784	-0.187
Q2. The educational performance indicators are helpful in measuring the quality of education and the effectiveness of management.	4.21	0.861	Highest	-0.739	-0.461
Q3. Educational trends have a positive impact on adapting to change and improving management efficiency.	4.22	0.870	Highest	-0.895	-0.028
Q4. The diversity strategy of educational institutions contributes to creating a diverse learning environment and improving management effectiveness.	4.27	0.838	Highest	-0.745	-0.588
Q5. Educational planning facilities contribute to the provision of a suitable learning environment and the management of educational resources.	4.25	0.833	Highest	-0.869	-0.014
Q6. The admission policy has a key impact on attracting and retaining qualified students and maintaining management effectiveness.	4.26	0.852	Highest	-0.829	-0.328
Q7. The quality of education standards have a key impact on the maintenance of the quality of education and the management of educational institutions.	4.22	0.829	Highest	-0.778	-0.175

Variables	$\bar{X}$	S.D.	Level	SK	KU
Q8. Analysis of educational data contributes to data-based decision-making and to improving the effectiveness of educational management.	4.24	0.868	Highest	-0.948	0.074
Q9. The management of student records is essential to the effectiveness of the management of student information and educational records.	4.22	0.804	Highest	-0.807	0.072
Q10. The tutor evaluation contributes to the student's academic development and management effectiveness.	4.24	0.787	Highest	-0.846	0.224
Q11. Reporting details tracking is critical to improving the school's management effectiveness and decision-making.	4.26	0.788	Highest	-0.841	0.136
Q12. Student admission policies and procedures have a key impact on maintaining the management of the school and attracting qualified students.	4.25	0.793	Highest	-0.920	0.429
Q13. Academic research projects play a key role in enhancing the university's research reputation and management effectiveness.	4.29	0.760	Highest	-0.857	0.252
Q14. Equal opportunities for diverse students contribute to creating inclusive school environments and improving management effectiveness.	4.22	0.770	Highest	-0.818	0.348
Q15. Health and safety training contributes to the health and safety of students and staff, thereby maintaining school management.	4.32	0.737	Highest	-0.735	-0.262
Q16. Student employment programmes have a key impact on the future career success of students and the effectiveness of school management.	4.35	0.738	Highest	-0.939	0.383
Q17. The academic integrity policy has a positive impact on maintaining the ethics and quality of school management.	4.26	0.774	Highest	-0.845	0.276
Q18. The student questionnaire can help to understand the needs of students and improve the effectiveness of school management.	4.26	0.817	Highest	-0.935	0.288



Variables	$\bar{X}$	S.D.	Level	SK	KU
Q19.Student associations have a positive impact on student participation and school management effectiveness.	4.28	0.800	Highest	-0.812	-0.160
Q20.Multimedia resources contribute to improving the interactivity and management effectiveness of education	4.24	0.770	Highest	-0.792	0.146
Q21.Knowledge of the art and design field has a positive impact on the provision of high quality art and design education and management effectiveness.	4.06	0.903	High	-0.836	0.411
Q22.The handling of student complaints has an important impact on the maintenance of school management and student satisfaction?	3.93	0.938	High	-0.622	-0.118
Q23.Providing career guidance to students have a significant impact on students' career planning and improving their job prospects	4.30	0.791	Highest	-0.944	0.269
Q24.Compliance with educational standards and guidelines contributes to improving the quality of educational management.	4.29	0.791	Highest	-0.725	-0.543
Q25.Monitoring and control mechanisms contribute to improving the effectiveness of educational management.	4.08	0.874	High	-0.745	0.117
Q26.Classroom management has a significant impact on maintaining a good learning environment and managing students.	4.19	0.833	High	-0.726	-0.280
Q27.Teaching assessment play a key role in understanding students' academic performance and improving teaching methods	4.06	0.934	High	-0.769	-0.027
Q28.The content of the course has a positive impact on the provision of quality education and management results.	3.98	0.959	High	-0.694	-0.141
Q29.Interdisciplinary cooperation can help solve complex educational management problems.	4.17	0.870	High	-0.858	0.135

Variables	$\bar{X}$	S.D.	Level	SK	KU
Q30.The curriculum objectives help to clarify the direction of education and improve the effectiveness of educational management.	3.99	0.926	High	-0.637	-0.185
Q31.Technical skills training has a positive impact on the improvement of technical skills and management effectiveness of faculty and staff.	4.18	0.904	High	-0.986	0.414
Q32.Teaching methods and strategies play an important role in improving the quality of education and the effectiveness of management	4.02	0.943	High	-0.804	0.143
Q33.The curriculum outline have a positive impact on the organization of course content and teaching plans	4.02	0.930	High	-0.868	0.530
Q34.Teacher qualifications and experience have a positive impact on the provision of quality education and management effectiveness.	4.09	0.898	High	-0.911	0.595
Q35.Teaching methods contribute to the improvement of students' academic performance and management effectiveness.	3.91	0.910	High	-0.787	0.442
Q36.Decision-making and implementation capacities play a key role in the effectiveness of educational management	3.99	0.941	High	-0.526	-0.572
Q37.A leader's management style is crucial to the effectiveness of educational management.	4.17	0.860	High	-0.697	-0.417
Q38.Salary and incentive policies help motivate faculty and staff and improve management effectiveness	4.03	0.937	High	-0.696	-0.240
Q39.The administrative structure has had a positive impact on the management of education.	4.02	0.949	High	-0.892	0.456
Q40.Employee satisfaction significant to the effectiveness of educational management	4.01	0.954	High	-0.685	-0.240
Q41.Development planning has a positive impact on the long-term success of schools or educational institutions.	3.93	0.899	High	-0.612	0.080

Variables	$\bar{X}$	S.D.	Level	SK	KU
Q42.Budgetary and supervisory systems contribute to improving the quality of educational management.	4.10	0.910	High	-0.774	-0.228
Q43.The school leadership team play an important role in the effectiveness of educational management	4.20	0.866	High	-1.096	1.171
Q44.The quality of education assessment indicators have had a positive impact on improving the effectiveness of education management.	4.08	0.933	High	-0.794	-0.076
Q45.Alumni and social resource support have a positive impact on the effectiveness of educational management.	4.05	0.933	High	-0.840	0.249
Q46.Addressing educational legal issues has a key impact on the effectiveness of educational administration.	4.10	0.929	High	-0.829	-0.012
Q47.The tuition policy has had a positive impact on the effectiveness of educational administration.	4.11	0.899	High	-0.932	0.604
Q48.The school governance structure contributes to improving the effectiveness of educational management.	4.13	0.910	High	-1.058	1.130
Q49.The setting of long-term development goals critical to the success of educational management	4.18	0.845	High	-0.781	0.028
Q50.Educational policies contribute to improving the effectiveness of educational management.	4.12	0.909	High	-0.771	-0.185
Q51.Learning engagement affects the effectiveness of educational management.	4.13	0.807	High	-0.599	-0.303
Q52.Leadership performance evaluation contributes to improving the quality of educational management.	4.06	0.930	High	-0.783	0.026
Q53.Transformational leadership contribute to driving change and innovation in education?	4.14	0.820	High	-0.545	-0.579
Q54.Organizational culture play a key role in educational management.	4.15	0.858	High	-0.732	-0.227
Q55.Staff performance evaluation contributes to improving the quality of educational administration.	4.08	0.941	High	-0.759	-0.204

Variables	$\bar{X}$	S.D.	Level	SK	KU
Q56.Funding for academic projects has a significant impact on the promotion of educational research and management effectiveness.	4.10	0.905	High	-0.767	-0.233
Q57.Educational innovation support has a positive impact on improving the effectiveness of educational management.	4.02	0.959	High	-0.826	0.107
Q58.Investment in infrastructure development and improvement has had a positive impact on the provision of appropriate learning environments and the management of educational facilities.	4.16	0.801	High	-0.752	0.289
Q59.Annual expenditure on education has a positive impact on the provision of quality education and the maintenance of the effectiveness of education management.	3.98	0.981	High	-0.794	0.090
Q60.The allocation of teaching materials and educational technology resources contributes to the provision of educational resources required by students and to the improvement of management effectiveness.	4.19	0.798	High	-0.714	-0.075
Q61.How does the school ensure that funds for collaborative projects are allocated and managed effectively	4.20	0.801	High	-0.742	-0.058
Q62.There is a data management system or tool for tracking student progress and achievement	4.16	0.804	High	-0.657	-0.199
Total	62				

As can be seen from table 2, in general, 62 questions are all about arithmetic the average value ( $\bar{X}$ ) is between 3.91-4.35, indicating that the respondents have opinions on this level variable value from arithmetic mean ( $\bar{X}$ ), from medium to high, standard the deviation (S.D.) is between 0.777- 0.981, indicating that there are great differences among respondents' views on variables. The variable with the largest arithmetic value ( $\bar{X}$ ) is variable Q59. Whether annual expenditure on education has a positive impact on the provision of quality education and the maintenance of the effectiveness of education management. Its the arithmetic mean

$(\bar{X})$  is 3.98, and the standard deviation (S.D.) is 0.981, which shows that the acceptance of this item is relatively consistent among all investigators, and the acceptance is high. It shows that the performance similarity of the surveyed schools in this item is high.

Descriptive statistical analysis was performed on all scale questions Maximum.

The minimum value is between 1-5, indicating that there is no extreme value, and the average value is between 3.91-4.35, indicating that the protocol is high. standard deviation 0.981, indicating that it basically conforms to the normal distribution.

Skewness was a measure of the direction and degree of skewness of statistical data distribution, and a digital feature of the degree of asymmetry of statistical data distribution. Skewness is also known as skewness and skewness coefficient. The characteristic number characterizing the degree of asymmetry of the probability distribution density curve relative to the average value. Intuitively, it is the relative length of the tail of the density function curve. An index describing the distribution state is the skewness coefficient, which can help judge whether the distribution shape of the data set is symmetrical. We generally think that the Skew value is acceptable between- 2

As can be seen from table 4-9, in general, 62 questions are all about arithmetic the average value  $(\bar{X})$  is between 3.91-4.35, indicating that the respondents have opinions on this level variable value from arithmetic mean  $(\bar{X})$ , from medium to high, standard the deviation (S.D.) is between 0.777- 0.981, indicating that there are great differences among respondents' views on variables. The variable with the largest arithmetic value  $(\bar{X})$  is variable Q59. Whether annual expenditure on education has a positive impact on the provision of quality education and the maintenance of the effectiveness of education management. Its the arithmetic mean  $(\bar{X})$  is 3.98, and the standard deviation (S.D.) is 0.981, which shows that the acceptance of this item is relatively consistent among all investigators, and the acceptance is high. It shows that the performance similarity of the surveyed schools in this item is high

Kurtosis is a characteristic number that represents the peak value of the probability density distribution curve at the average value. Describe the kurtosis and steepness of the unimodal distribution curve. Intuitively, kurtosis reflects the sharpness of the peak. The kurtosis of the sample is a statistic compared with the normal distribution. We usually think that Kurtosis values between - 10 and 10 are acceptable. The Kurtosis values in this study are between 0.187 and 1.171. The Kurtosis statistical curve in this study is relatively flat, acceptable, and statistically significant.

**Table 3:** Shows KMO Meyer Olkin and bartlett's test

KMO and Bartlett's test		
Kaiser Meyer Olkin measure of sampling efficiency		0.922
Bartlett's test of sphericity	Approx. chi square	33973.272
	DF	1891
	Sig	0.000

The KMO test result of the data collected from the study was 0.922.

Kaiser and rice studied KMO (Kaiser Meyer Olkin sampling adequacy measure) Measuring whether the data is suitable for using factor analysis technology when using factor analysis to test validity, the premise of factor analysis is first of all, it needs to be satisfied, that is, there is a strong correlation between projects, which is reflected in two test indicators: 1. Kmo value, 2. Bartlett sphere test value. Among them, KMO Value is used to compare simple correlation coefficient and partial correlation coefficient items, and the value is between 0 and 1. The criteria of factor analysis are: Greater than 0.90, very suitable; 0.70-0.90 is appropriate; 0.60-0.70 is not appropriate; Less than 0.6 is not appropriate. Bartlett sphere test values for testing. The correlation coefficient between items is significant. If significant (i.e. sig.<0.05), then It is applicable to factor analysis. The analysis at this stage uses the principal component extraction factor.

**Table 4:** Data analysis result on questionnaire: Eigenvalues, Percentage of Variance, Percentage of Cumulative Variance

Component	Rotation sums of squared Loadings		
	Eigenvalues	% of Variance	% of Cumulative
1	33.853	54.602	24.671
2	3.822	6.165	40.785
3	2.928	4.723	55.197
4	1.865	3.007	64.897
5	1.332	2.149	69.984
Extraction method: principal component analysis			

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

It can be concluded from table 3 that effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province. When the rotation axis explained 69.984% of the total difference. Part 1 has a the maximum eigenvalue is 33.853, which can explain 54.602% of the total variance of each component, and it can explain 24.671% of the total variance. The maximum characteristic value of component 2 is 3.822. It can explain that the total variance of each component is 6.165%, that is, the total variance can be explained by 40.785%. The maximum characteristic value of component 3 is 2.928, It can explain that the total variance of each component is 4.723%. It can explain the total the difference of each component was 55.197%. The maximum characteristic value of component 4 is 1.865, which can explain 3.007% of the total variance of each component, and it can explain 64.897% of the total variance.

**Table 5:** Shows the factor loads and variables described in each major component after rotating the shaft.

Factor loading					
Variable	Component				
	1	2	3	4	5
Q37	.813				
Q55	.804				
Q50	.804				
Q42	.799				
Q56	.796				
Q54	.789				
Q59	.777				
Q57	.768				
Q39	.744				
Q30	.742				
Q52	.740				
Q40	.729				
Q38	.724				
Q43	.710				
Q41	.693				

Factor loading					
Variable	Component				
	1	2	3	4	5
Q47	.680				
Q49	.623				
Q26	.620				
Q51	.588				
Q25	.564				
Q46	.544				
Q44	.542				
Q53	.523				
Q45	.518				
Q48					
Q12		.779			
Q11		.763			
Q20		.755			
Q14		.755			
Q19		.749			
Q23		.726			
Q17		.721			
Q18		.711			
Q10		.708			
Q16		.645			
Q13		.636			
Q15		.610			
Q24		.550			
Q36			.824		
Q27			.782		
Q29			.781		
Q31			.762		
Q34			.746		
Q28			.737		
Q21			.726		



Factor loading					
Variable	Component				
	1	2	3	4	5
Q22			.710		
Q32			.668		
Q33			.645		
Q35			.573		
Q8				.746	
Q2				.705	
Q3				.684	
Q5				.634	
Q6				.620	
Q1				.617	
Q9				.555	
Q4				.547	
Q7					
Q61					.708
Q62					.692
Q58					.674
Q60					.560

Table 5 Shows the factor loads and variables described in each major component after rotating the shaft.

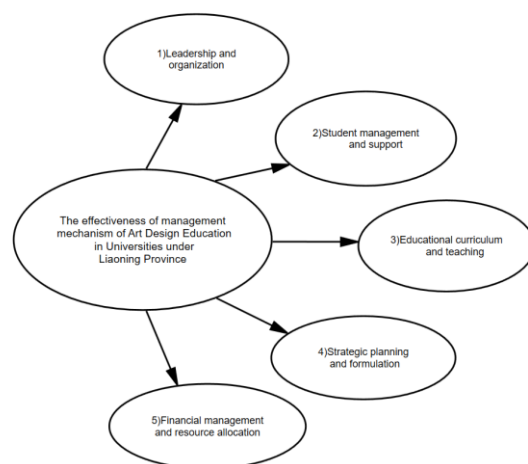
According to the research criteria, When the number of variables contained in a dimension is less than 3, the dimension will not be used. Also remove entries with factor loading scores below 0.5 and retained the items with scores higher than 0.5. The elements and related factors of effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province are based on the criteria of selecting components. There are 5 components in total; The first part: 24 variables; The second part: 13 variables; The third part: 11 variables; The fourth part: 8 variables ; The Fifth part: 4 variables. It shows the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

**Table 6 :** Components of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province

Order	Assembly	Number of variables	Factor load
1	Component 1	24	0.518-0.813
2	Component 2	13	0.550-0.779
3	Component 3	11	0.573-0.824
4	Component 4	8	0.547-0.746
5	Component 5	4	0.560-0.708
	All	60	0.518-0.824

According to table 6, there are 5 qualified components as follows; Component 1 contains 24variables that describe the component. Coefficient load is between 0.518-0.813; Component 2 with 13 variables, the coefficient load of the component is between 0.550-0.779; The third part contains 11 variables describing the components, and the factor load is between 0.573-0.824; Component 4 contains 8 variables, describing the load between components and factors of 0.547-0.746. Component 5 contains 4 variables, describing the load between components and factors of 0.560-0.708. The total number of variables describing these five variables is 60 variables, and the factor load is between 0.518-0.824.

Based on the Exploratory Factor Analysis to extract variables to key component variables by Analyze the most likely conditions. The researcher summarized the 5 components as shown in Figure1.



**Figure 1** The factors influencing the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

**There are 44 guiding principles for the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province:**

**1. Leadership and organization** consist of 11 management mechanism

1) Set up a special art and design education management team composed of senior educators and art and design experts to ensure effective coordination and promotion of management work.

2) A clear vision and long-term goal for education to ensure that college art and design education is in line with industry needs and future trends.

3) Develop comprehensive educational quality standards to simplify and improve the quality of education, including teaching, academic research and student development.

4) Establish an interdisciplinary cooperation mechanism to promote collaboration between different disciplines and create interdisciplinary art and design education courses and research projects.

5) Ensure the transparency of decision-making, through an open decision-making process and consultation, so that all stakeholders have the opportunity to participate in management decisions.

6) Establish effective education system evaluations, including student performance evaluations, teacher evaluations, and graduate tracking, to provide quantitative data on the quality of education.

7) Hold regular faculty meetings, listen to teachers' opinions and suggestions, and promote communication and opinions.

8) Promote digital education and invest in modern educational technologies and online learning resources to meet different learning needs.

9) Develop teacher development plans and provide training and development opportunities to improve educational standards and skills.

10) Strengthen international cooperation, establish international exchange programs and partnerships, and provide students with international learning opportunities.

11) Regularly evaluate and update management policies to adjust and improve them according to school needs and best practices.

**2. Student management and support** consist of 9 management mechanism

1) A student counseling center was established to provide students with mental health counseling, career planning, and academic support.

2) Programs and bursaries are provided to support talented students and encourage them to pursue further opportunities in the field of art and design.

3) Encourage international exchange and provide international exchange programs to develop students' international perspective and cross-cultural communication skills

4) Create a student Art and Design association, promote exchanges and cooperation among students, and organize art exhibitions and events.

5) Implement student assessment and follow-up mechanisms to monitor students' academic progress and personal development, and provide timely intervention and support

6) Provide career counseling and internship opportunities to help students transition smoothly into their careers and build school-industry partnerships

7) Establish a mentor system where each student is assigned a mentor to provide academic and career guidance.

8) Establish a student innovation lab to provide students with places and resources for innovative and experimental projects.

9) Students are encouraged to participate in school decision-making, and student representative bodies are set up to allow students to express their opinions in school affairs.

### **3. Educational curriculum and teaching** consist of 12 management mechanism

1) Regularly evaluate course content to ensure that art and design courses are in line with industry trends and technological developments.

2) Introduce hands-on teaching, including workshops, project-driven teaching and field trips to provide students with hands-on experience.

3) Interdisciplinary teaching is encouraged, integrating art and design with other disciplines (such as science, engineering, business, etc.) to foster innovative thinking.

4) Adopt modern educational technologies such as virtual reality and online learning platforms to provide diverse learning resources.

5) Experimentation and innovation are encouraged, and students are involved in research projects and design activities that foster creativity.

6) Dedicated art and design laboratories and studios are set up to provide students with places and resources to create and experiment.

7) Regular art exhibitions and presentations are organized to encourage students to share their creations and be evaluated by peers and the public.

8) International education, providing foreign language courses and international academic support exchange opportunities to cultivate students' international perspective.

9) Establish teaching evaluation standards to improve teacher effectiveness, including student feedback and peer review

10) Students are encouraged to engage in social practice, working with industry and the community to apply art and design knowledge to solve practical problems.

11) Set up a professional tutor system to provide students with unique academic and career guidance.

12) Provide research opportunities, encourage students to participate in academic research projects, and develop independent research skills.

#### **4. Strategic planning and formulation** consist of 7 management mechanism

1) Strategic goals for art and design education are established, including specific goals for academic excellence, student development, and social impact.

2) Develop close links with industry and industry partners to ensure that art and design education is aligned with market needs and provides employment opportunities for students.

3) Encourage innovation and experimentation to provide space for new approaches and technologies in education to meet changing needs.

4) Ensure engagement and discussion of strategic planning, including broad participation from school leaders, teachers, students and industry representatives.

5) Develop resource allocation strategies to ensure that the strategic plan is supported by adequate financial and human resources.

6) Focus on innovation in education and research and ensure that strategic planning includes goals and programs that support education and research.

7) Promote international development, formulate international cooperation strategies, and expand opportunities for international exchanges and cooperation.

#### **5. Financial management and resource allocation.**

1) Establish a transparent financial management system to ensure the transparency and fairness of financial decisions, so that the majority of stakeholders can understand the allocation and use of resources.

2) Develop a detailed financial plan and budget, including spending on education, research, and student support, to ensure that resources are allocated in line with the school's strategic objectives.

3) Develop criteria for resource allocation to ensure that resource allocation is equitable and based on academic and educational needs.

4) Optimize the use of resources to ensure that limited resources are fully utilized by integrating resources, saving costs and improving efficiency.

5) Establish a transparent financial management system to ensure the transparency and fairness of financial decisions, so that the majority of stakeholders can understand the allocation and use of resources.

## 5. Conclusions

Through content analysis. After data collection, content analysis will be conducted to analyze the collected data. From the perspective of research objectives, the main findings are as follows:

1. The research findings were: there were five components effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province which consisted of Leadership and organization, Student management and support, educational curriculum and teaching, Strategic planning and formulation, and Financial management and resource allocation.

2. There are 44 guiding principles for the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province.

## 6. Discussion

### 1.Components in the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province

There are 5 components in the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province Researcher study is in line with Joseph M Juran. (2003), "quality planning, quality control, and quality improvement": "Quality is a kind of applicability, and the so-called applicability Fitness for use refers to making the product meet the user's needs during use. Quality management is the management in the production practice to meet this suitability. Researcher study in line with the theory or research findings of Chinese scholars Liu Wei and Liu Guoning (2005) pointed out in the book "Quality Management" is quality management is to determine the policy, objectives and responsibilities and make them in the quality system through such as quality planning, quality control, quality

assurance and quality improvement All activities of all management functions implemented

Researcher study in line with the theory or research findings of Wang Shunji (2014) the uniqueness of decision-making should be based on mobilizing the enthusiasm of teachers and students, and try our best to meet the needs of students, promote the development of teaching, and promote the development of students' personality Cultivate excellent socialist successors. There are many factors that determine the success or failure of education, and the development of students is also affected by many factors, which does not depend on the teacher's personal will. But in a college, there are rules to follow whether a teacher's educational work may succeed or fail. Success is like war. Successful education is predictable. Whether a university's educational management mechanism is effective or not can be observed from two aspects of education and teaching. However, the effectiveness of curriculum management is reflected in the causes of education and teaching. They are also multifaceted, complement each other and cannot be completely separated.

Researcher study is in line with Zhao Yang(2015) The effectiveness of teaching management refers to the process of optimizing teaching activities by utilizing the functions of teaching management, rationally allocating various teaching resource elements, innovating teaching management methods to improve teaching management level, so as to effectively manage and fully realize the teaching management of higher normal colleges target, and Zhu Zhonghua (2022) , the effectiveness of teaching management in colleges and universities refers to the use of decision-making, organization, coordination and other functions of teaching management to optimize the process of teaching activities, rationally allocate various resource elements in the process of teaching activities, stimulate the vitality of teaching management, and improve the efficiency and level of teaching management. "Effective management" to maximize the realization of the teaching management goals of colleges and universities. To measure the effectiveness of teaching management in colleges and universities is essentially to examine the degree of realization of teaching management goals in colleges and universities. For teaching managers at all levels in colleges and universities, it is an important prerequisite to improve the effectiveness of teaching management in colleges and universities to clarify the goals of their teaching management activities. The relationship between this goal and other goals in order to achieve relative coordination and balance between goals.

Researcher study is in line with Zhu Zhonghua (2022), the effectiveness of the education management mechanism of art design in colleges and universities refers to the use

of decision-making, organization, coordination and other functions of teaching management to optimize the teaching activity process, rationally allocate various resource elements in the teaching activity process, stimulate the vitality of teaching management, and improve the efficiency and level of teaching management. , so as to maximize the realization of the teaching management goals of colleges and universities through "effective management". The essence of measuring the effectiveness of teaching management in colleges and universities is to examine the degree of realization of teaching management goals in colleges and universities. For teaching managers at all levels in colleges and universities, it is necessary to clarify the goals of their teaching management activities.

Researcher study is in line with Zhao Tingting. (2002), Zhao Tingting's article introduces three quality concepts of mass higher education in western countries, namely "suitability for purpose", "meeting consumers' wishes and needs", and "value added". It should be said that these three quality concepts have different degrees of internal connection with the adaptive quality concept. "Purpose suitability means that the standard for measuring the quality of education and teaching should be the corresponding behavioral goals set at the beginning." "Conforming to consumers' wishes and needs" is a typical adaptive quality concept. "Value appreciation" refers to "if the achievements and behaviors of students before entering higher education and after receiving higher education can be measured, then the greater the change between the two, the more value will be added, and the quality of education and teaching will also increase." the better

## **2.Guidelines to improve effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province**

The guidelines of the effectiveness of management mechanism of Art Design Education in Universities under Liaoning Province can be divided into 5 parts, a total of 44 guidelines. The guidance given by these five experts includes Develop comprehensive educational quality standards to simplify and improve the quality of education, including teaching, academic research and student development 、 encourage international exchange and provide international exchange programs to develop students' international perspective and cross-cultural communication skills 、 Interdisciplinary teaching is encouraged, integrating art and design with other disciplines (such as science, engineering, business, etc.) to foster innovative thinking 、 Focus on innovation in education and research and ensure that strategic planning includes goals and programs that support education and research 、 Establish a transparent



financial management system to ensure the transparency and fairness of financial decisions, so that the majority of stakeholders can understand the allocation and use of resources and so on. These opinions on management mechanism are consistent with Cai Keyong(2001), Zhao Tingting. (2002), Xiao Zong Liu (2001), Zhu Zhonghua (2022), and on the basic needs of management mechanism of Art Design Education in Universities under Liaoning Province are also highly consistent.

## 7. Recommendations

### Recommendation for Policies Formulation

1. Ensure efficient coordination of college art design education management system
2. Provide comprehensive support for students
3. Regularly update the curriculum, adopt diversified teaching methods, and provide teacher training
4. Make a clear long-term plan
5. Ensure financial support and establish transparent resource allocation policies

## 8. Limitations and Further Research

There are further studies on the management and application of art design education in colleges and universities in Liaoning Province. The contents are as follows:

1) Further expand the sample size in order to more accurately understand the work content of the leaders and organizations of colleges and universities in Liaoning Province.

2) Comparative study:

1. Compare the management of art design education in different colleges and universities in Liaoning Province, and understand their policies and implementation methods. Analyze the specific situation of each university, compare all aspects, from light to heavy, more accurately analyze the effectiveness of policies among universities and find the best policy plan.

2. Carry out comparative research on different provinces and cities, repeatedly compare colleges and universities of the same type, and verify and analyze similar research topics, so as to find out the optimal plan.

3) Expand the questionnaire survey area and target range, and master a large number of reliable data for analysis.

4) Based on the exploratory factor (EFA) analysis for the effectiveness of the management mechanism of art design education in colleges and universities in Liaoning Province.

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