

Teachers' Competency Model of Art Design Universities in Shenyang City Liaoning Province

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Abstract

Background:As the nation increasingly values the management of art and design education in universities, research has helped to clarify and formulate propositions and suggestions for teacher competence in the field of art and design education, as well as the scope of capacity improvement and judgment in art and design education.

Aims:The objectives of this research were: (1) To examine the components of the teachers' competency of art design universities in Shenyang city, Liaoning Province; (2) To develop the teachers' competency model of art design universities in Shenyang city, Liaoning Province. (3) To propose guidelines for improving teachers' competencies of art design universities in Shenyang city, Liaoning Province.

Methodology: The research was mixed methodology design which were comprised of quantitative and qualitative research. The population of this research were 1729 teachers in 16 art design universities located in Shenyang city, Liaoning Province. The sample were 459 teachers which was determined by G*Power program at power of test .80, and using proportional stratified random sampling. The statistics used for data analysis were descriptive statistics, Confirmatory Factor Analysis and Structural Equation Model Analysis (SEM).

Results:The research findings revealed that: (1) there were 5 components of teachers' competency of art design universities located in Shenyang city, Liaoning Province: Professional knowledge capabilities, Skills operation capabilities, Professional innovation capabilities, Social practice capabilities, and Potential capabilities of individual variables; (2) the teachers' competency model of art design universities fit well with empirical data ($X^2/df=1.738$, GFI=0.959, AGFI=0.942, NFI=0.964, IFI=0.984, CFI=0.984, TLI=0.980, RMSEA=0.040).

Conclusion: There were 16 guidelines for improving teachers' competencies of art design universities in Shenyang city, Liaoning Province: 1. Teachers had actively shared their teaching experiences and exchanged insights, continuously updating their knowledge systems. 2. Emphasis had been placed on identifying potential shortcomings in teaching and self-assessment, continuously optimizing classroom teaching practices. 3. New teaching methods and strategies had been tried in the classroom. 4. Study history, find the cultural core more suitable for the national design from the historical evolution, so that the design can show more regional forms. 5. Establish mentorship programs where experienced teachers can guide less experienced colleagues. Encourage collaborative projects among students and faculty to foster a collaborative learning environment. 6. Understand and incorporate diverse cultural perspectives into their teaching to prepare students for a globalized art world. Promote inclusive practices that respect and reflect the diversity of the student body and the art community. 7. Teachers had aimed to enhance their information-based teaching abilities. 8.

Create a constructive judgment environment to judge regular teaching and practical cross-disciplines, and provide and receive feedback on innovative ideas.9. The cultivation of innovative capabilities among young teachers had been of vital importance.10. The cultivation of teachers' innovative thinking, the creation of a positive campus atmosphere, and the enhancement of comprehensive quality and professional level had been emphasized. 11. Teachers had developed personal plans to improve their practical teaching abilities and cultivate a mindset of lifelong learning.12. Schools had optimized the mechanism for school-enterprise cooperation, leveraging the strengths of both entities for effective collaboration.13. Include diverse cultural perspectives in the curriculum and encourage students to consider these in their design work. Study and address global design issues, such as poverty, health, and education, from a design perspective. 14. By reflecting on teaching before, during, and after class, teachers were better able to identify issues in their teaching and seek solutions, thereby improving their individual teaching abilities.15. Teacher participation in educational action research had been an effective way to enhance individual teaching and research capabilities.16. Teachers had combined their knowledge with teaching practice to continuously improve their personal abilities.

Keywords: The Competency Model; Art Design; Universities in Shenyang City; Liaoning Province

Introduction

Educational workers are managerial personnel with management skills, and their leadership abilities are key aspects in operating well-functioning educational institutions. They play important roles in the overall operation and success of schools or educational organizations. Their combined educational and managerial capabilities are crucial for the development of higher education, the creation of a conducive learning environment, and the achievement of institutional goals.

As the nation increasingly values the management of art and design education in universities, research has helped to clarify and formulate propositions and suggestions for teacher competence in the field of art and design education, as well as the scope of capacity improvement and judgment in art and design education.

The management of art and design education competencies is a tool for improving the guidance of education systems or university management talents. (Wang Mingzhi, 2019) explored the concept of design education integrating art and science. He indicates that the reform of art and design education in our country has guiding significance. Based on the strategic goals of higher art education, the development of human resources for design education and their application to human resource management have been emphasized. Therefore, according to the author's conceptual framework, integrating relevant literature and research, exploring the abilities that art and design education managers should possess and how to improve their abilities and educational management levels can facilitate positive social change.

Currently, educators in the art and design education industry in Liaoning Province are mainly selected based on qualifications, with performance evaluations focusing on teaching and research capabilities. This has greatly limited the overall quality improvement of art and design education teachers. Therefore, research on higher art and design education is conducive to comprehensively describing the competency characteristics of high-performance teachers,

providing a scientific basis for teacher recruitment, selection, training, assessment, and access to higher art education, and improving the overall level of art and design faculty at universities under the administration of Liaoning Province, Shenyang City. (Yang Dongjiang, 2024) emphasizes the importance of design education adapting to the times in the era of artificial intelligence. This includes the concept of integrating art and technology and exploring new educational models in professional courses and practical projects; (Li Baomin, Qu Manqi, Zhou Bin, 2024) has built a teacher innovation ability index system with innovation willingness, innovation preparation, and innovation practice as the core. This research emphasizes the importance of teacher innovation in the context of technological empowerment; in addition, (Charalampos Dervenis, Panos Fitsilis, Omiros Iatrellis, 2023) has proposed a multidimensional method for higher education teacher competence, which consists of six main dimensions with their own characteristics. This research emphasizes that teachers' digital capabilities and other specific abilities have become very important globally due to the impact of the COVID-19 pandemic.

Conclude the research problems

(1) How had the competencies of teachers in the field of art and design education been defined?

(2) How had the overall level of art and design education teachers in universities under the jurisdiction of Liaoning Province, Shenyang City, been improved, especially in terms of teacher recruitment, selection, training, evaluation, and promotion?

(3) How had art and design education adapted to the changes of the times in the era of artificial intelligence, and how had new educational models been explored with the integration of art and technology?

(4) In the context of technology empowerment, how had an indicator system for teachers' innovative capabilities been constructed, and how had the role of teachers in innovation been emphasized?

Therefore: The management of higher art and design education in Liaoning Province also explores five dimensions of capability variables, including professional knowledge capabilities, skills operation capabilities, professional innovation capabilities, social practice capabilities, and individual potential capabilities. Based on the analysis results of the teacher competence model in art and design education management in Liaoning Province, the author has created a method model for teacher competence management through the analysis results.

Research Objective

(1) To examine the components of the teachers' competency of art design universities in Shenyang city, Liaoning Province.

(2) To develop the teachers' competency model of art design universities in Shenyang city, Liaoning Province.

(3) To propose guidelines for improving teachers' competencies of art design universities in Shenyang city, Liaoning Province.

Literature Review

Since 2014, the research on the competence of university faculty had increasingly become a focal point in the field of education. (Zhang Hongxia and Li Ming, 2014) had indicated in their seminal study that the competence of university faculty referred to the comprehensive qualities displayed by teachers in educational and teaching activities, encompassing a wide array of areas such as professional knowledge, teaching ability, research capability, and interpersonal skills. They had emphasized that with the deepening of higher education reforms, the importance of teacher competence had become increasingly prominent, serving as a crucial indicator for measuring a teacher's overall abilities. (Wang Li and Liu Hongtao, 2016) had further underscored the core role of competence in the construction of university faculty teams, firmly believing that the development of teacher competence was key to enhancing educational quality.

In their groundbreaking work, (Chen Xiaohui and Zhang Xiaohui, 2018) had proposed a comprehensive five-dimensional model of university faculty competence, which included professional literacy, teaching literacy, research literacy, interpersonal literacy, and psychological literacy. They had argued that this model provided an exhaustive summary of the abilities required of university teachers. According to their framework, professional literacy laid the foundation, teaching literacy formed the core, research literacy served as the enhancement, interpersonal literacy offered the guarantee, and psychological literacy provided the support. Building upon this model, (Zhao Min and Zhang Wei, 2015) had conducted empirical research and found that these five dimensions significantly impacted the competence of university faculty, thereby providing a theoretical basis for the cultivation of teacher competence.

The exploration of research methods in studying university faculty competence had been diverse and enlightening. (Li Dan and Liu Chang, 2017) had utilized interviews to delve deeply into the competence of university faculty, revealing teachers' actual performance in teaching, research, and management. Their findings had highlighted the multifaceted nature of faculty competence. (Wu Xue and Yang Li, 2019) had employed a questionnaire survey method to conduct empirical research on university faculty competence. Their study had indicated that while the overall level of competence was high, there was still considerable room for improvement in certain specific abilities. The application of these research methods had provided a wealth of empirical data for the study of university faculty competence, promoting the development of theory and practice in the field.

The factors influencing the competence of university faculty had been numerous and complex. (Liu Tingting and Wang Fang, 2018) had believed that organizational factors such as organizational climate, leadership style, and colleague support played a pivotal role in shaping teacher competence. Drawing on this understanding, (Chen Zhiqia, Yang Hui, He Meixian, 2022) had compared to previous research in the field of education, there has been a brand new exploration direction in terms of interpersonal relationships, with a broader and more extensive scope. This research can be applied to various aspects of university faculty recruitment, selection, training, employee management, and salary management, thereby establishing a massive human resource system with significant strategic importance for the organizational development of Chinese higher education institutions, and comprehensively enhancing the overall strength of Chinese universities.

In summary, from 2014 to 2024, significant achievements had been made in the research on the competence of university faculty. Scholars had conducted a comprehensive exploration of university faculty competence, ranging from the development of concepts to the structure of content, from research methods to influencing factors. However, with the continuous deepening of educational reforms, the competence of university faculty had still faced numerous challenges. Future research should have focused on further exploring the connotation and extension of university faculty competence, innovating research methods, paying attention to the cultivation of competence in special groups of teachers, and studying teacher competence from an interdisciplinary perspective. Such endeavors would have aimed to provide theoretical support and practical guidance for the construction of university faculty teams in China, ensuring that the education system remained dynamic and responsive to the evolving needs of society.

Research Methodology

Including qualitative and quantitative research Population of the research was consisted of 1,729 full-time teachers who are from 16 art design faculty of universities in Shenyang City under Liaoning province. The sample size was determined by the G- power, obtained by proportional stratify simple random sampling method, to tolling 459 teachers. First, 10 key informants with over 10 years of experience at the School of Art and Design, Shenyang University were selected for semi-structured interviews. In the second step, 459 full-time teachers were chosen from the 1729 full-time teachers at the School of Art and Design of 16 universities in Shenyang, Liaoning Province as the sample. In the third step, 9 key informants were selected for focus group discussions. The instruments used foe data collection were data record form, semi-structured interview form and five-point rating scale questionnaire. Questionnaires have been received at the response rate of 100%.. Statistics used for data analysis included frequency, percentage, mean, Standard Deviation, Exploratory Factor Analysis (CFA), content analysis and Multiple Regression Analysis was employed.

Population and Sample

The population of this research were 1729 teachers in 16 art design universities located in Shenyang city, Liaoning Province. The sample were 459 teachers which was determined by G*Power program at power of test .80, and using proportional stratified random sampling.

Research Instruments

The instruments using for collectting data were the data record sheets, the interview form and questionnaire.

The questionnaire was 5-points rating scale, which was validity (IOC test) and reliability (Try out)

Data Analysis

First, from about basic information of the respondent. Using an exploratory factor analysis (CFA) model to verify the data from the questionnaire.. Secondly, in terms of the qualitative method, the data analysis uses the content analysis by bring the experts' opinions to distinguish, categorize and prioritize ways to propose managerial guidelines for improving teachers' competency of art design in Shenyang city, Liaoning Province.

Research Conceptual Framework

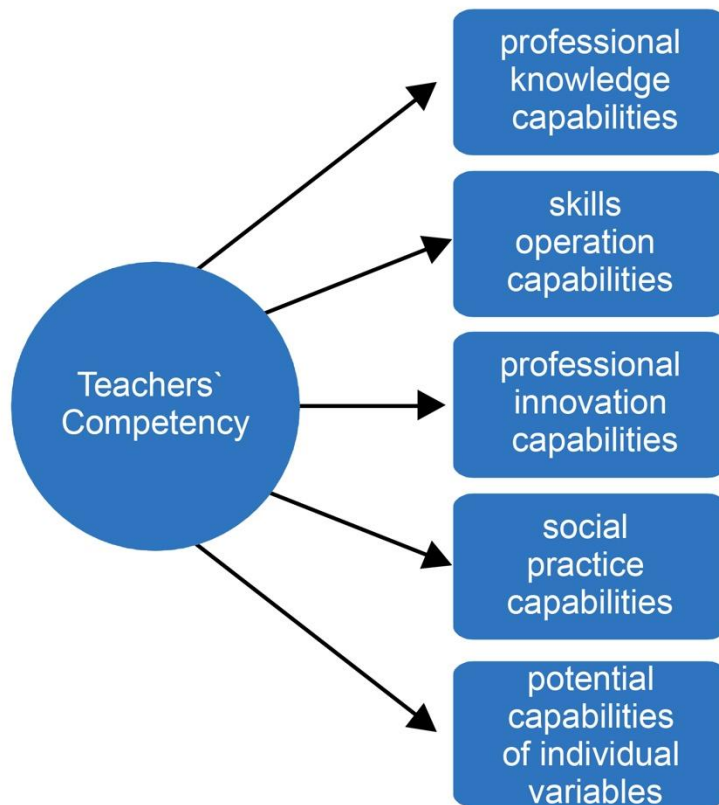


Figure 1. Research Conceptual Framework

Research Results

Research Results of Objective 1

Examining components and indicators of teachers' competency of art design universities in Shenyang city, Liaoning Province. It was qualitative research. The researcher has studied related literature about the concept, principles, theories, and related research on teachers' competency. In addition, Semi-Structured Interviews were conducted with 10 highly experience educational Key informants (experts) who were deans, department directors and professors more than 10 years of work experience from art universities in Shenyang City, Liaoning Province. These 10 key informants were selected through the purposive sampling method. The researcher used a Semi-Structured Interview Form to collect the content of the interviews and conducted content analysis on the collected data. The results showed that through literature research and Semi-Structured Interviews, a total of 5 components and 59 indicators of empowering leadership were identified, and the results were presented in Table 2.

Table 1. Components of Teachers' Competency Based on Review of Literature Research and Semi-structured Interview

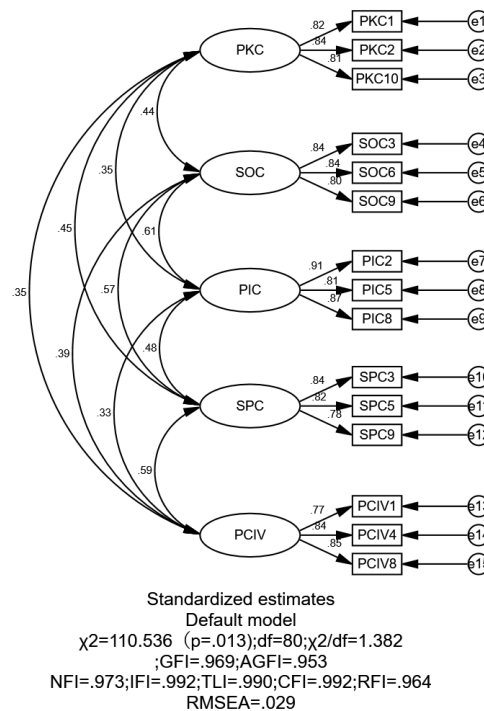
Variable List	Data Record Form - Document Number																							Data Record Form Expert										Frequency	Rate			
	Lin	Hillary	Ramon	Rakibin	Amrjic	TIAN	Mohanna	Jahkili	Pamozhi	Glenny	Faya	Norfarahin	Hillary	Chen	Wang	Dwi	Pitri	Pamozhi	Nikola	Junfeng	Mirza	Olga	Xiaoqi	Chunxia	Yaday	1	2	3	4	5	6	7	8			9	10	
1.Adaptability and control ability																		1							1	1									1	1	7	20%
2.Double teacher double ability		1																									1										5	14%
3.Emotional Intelligence										1																	1	1							1	1	5	14%
4. Research and development																				1							1										4	11%
5.Interpersonal and support														1												1									1		5	14%
6.Creativity										1																	1								1	1	4	11%
7.Cooperation and communication										1			1													1									1	7	20%	
8.Leadership Skills														1												1										5	14%	
9.Teamwork							1																			1									1	1	6	17%
10.Building a Strong Network															1																						4	11%
11. Inter disciplinary approach								1											1			1						1							1	8	23%	
12.Teaching Interest																		1				1				1										5	14%	
13.Self-growth ability						1													1								1						1	1		7	20%	
14.Global Awareness																	1										1	1							1	6	17%	
15. Self-evaluation and criticism							1																				1	1							1		6	17%
16.Bringing Theory and Practice Together						1									1											1	1								1		6	17%
17.Environmental Competencies							1																														3	9%
18.Engaging the community																			1									1							1		5	14%
19.Professional knowledge capabilities	1			1			1	1									1	1	1	1						1	1		1	1	1	1	1	1	1	1	17	49%
20Pedagogical Competence Indicator							1		1																			1									6	17%
21.Classroom Management Skills																			1								1										5	14%
22.Skills operation capabilities	1			1	1	1						1						1			1						1	1	1	1					1	15	43%	
23Assessment and Evaluation										1			1	1													1		1							1	6	17%
24.Service Orientation		1												1												1											4	11%
25.Communication Skills		1	1					1					1															1									7	20%
26.Technology Integration																			1									1									2	6%
27.Cultural Competence																																					2	6%
28.Social practice capabilities						1						1			1					1		1					1	1	1	1	1			1	1	12	34%	
29.collaboration ability				1	1	1																1							1	1							7	20%
30.Professional Development																				1																	3	9%

Variable List	Data Record Form - Document Number																							Data Record Form Expert										Frequency	Rate				
	Lin	Hillary	Ramon	Rakibin	Amrjic	TIAN	Mohanna	Jahkili	Pamozhi	Glenny	Faya	Norfarahin	Hillary	Chen	Wang	Dwi	Pitri	Pamozhi	Nikola	Junfeng	Mirza	Olga	Xiaoqi	Chunxia	Yaday	1	2	3	4	5	6	7	8			9	10		
29.collaboration ability					1	1	1														1																7	20%	
30.Professional Development																				1																	3	9%	
31.Reflective Practice														1																							3	9%	
32.Student Engagement															1	1																					5	14%	
33.Knowing and understanding		1																																		1	3	9%	
34. Effective moral education competency						1																															2	6%	
35.Time Management																1																					4	11%	
36.Potential capabilities of individual variables							1							1	1					1		1				1	1	1						1	13	37%			
37.Emotional Intelligence																		1	1																		3	9%	
38.Classroom Environment																																						3	9%
39.Parental Involvement																							1														2	6%	
40.professional innovation capabilities	1			1	1									1	1					1							1		1	1	1	1	1	1	1	1	13	37%	
41.Adaptability																		1																			3	9%	
42 Self-Direction Skills						1																																3	9%
43.Critical Thinking Skills				1	1						1																											5	14%
44 Cross-border cooperation		1																				1																3	9%
45Self-growth ability																																						3	9%
46Human-computercollaborationcompetency							1																			1												5	14%
47.Curriculum development and teaching competency																										1		1										3	9%
48.Pedagogical Competence Indicator																										1												4	11%
49.Evaluation of Student Output																										1		1	1									4	11%
50.Research and Publication																										1												5	14%
51.Teacher-student relationship		1								1																												4	11%
52.Complex problem solving											1																											2	6%
53.Creativity																										1		1										5	14%
54.persuasiveness																										1		1										6	17%
55.Emotional maturity																			1									1	1									6	17%
56.Helping students learn			1																																			4	11%
57.Oreanization and Plannine																						1							1	1	1							5	14%

Research Results of Objective 2

To achieve Research Objective 2, the researcher conducted a quantitative analysis. An analysis of the validity of the questionnaire was first conducted. The validity of the questionnaire was assessed using the Item-Objective Congruence (IOC) analysis method. The results indicated that, out of the 59 questionnaire items, 51 items had IOC values ≥ 0.6 , indicating good consistency with their corresponding components. Next, the reliability of the questionnaire was analyzed. The results showed that Cronbach's alpha for the 5 components and 51 items was all above 0.9. This indicated that the scale had high reliability and excellent internal consistency. Therefore, these 51 items were retained as the question items in the final questionnaire. The researchers designed a Five-Level Rating Scale questionnaire containing 51 items to collect data from samples to develop a model of empowering leadership for administrators in public normal universities under Liaoning Province. The population consisted of 1729 who were administrators and full-time teachers. They came from 16 art design universities in Shenyang City under Liaoning Province. The researcher determined the sample size of sample were 459 full-time teachers which was consulted by with the G*Power program and determined the sample sizes for 16 art design universities in Shenyang City under Liaoning Province respectively through a stratified sampling technique. The researcher employed a questionnaire composed of 3 parts; Part I: General Information of the Respondents, Part II: Questionnaire about the Teachers' Competency Model of art design universities in Shenyang city under Liaoning Province. (Five-Points Rating Scale), consisting of 51 questions, and Part III: Additional Comments (Open-ended). The questionnaire was distributed online by the researcher using software called "Wisdom Star". Descriptive statistics analyzed the data of demographic variables.

Table 2: Measurement results of indicator combinations for each variable



The analysis of factor loading coefficients concluded that the Teachers` Competency Model consisted of 5 components and 15 indicators. Additionally, through Confirmatory Factor Analysis (CFA) , it was concluded that this model was consistent with the empirical data.

Table 3: Teachers' Competency Level 2 CFA

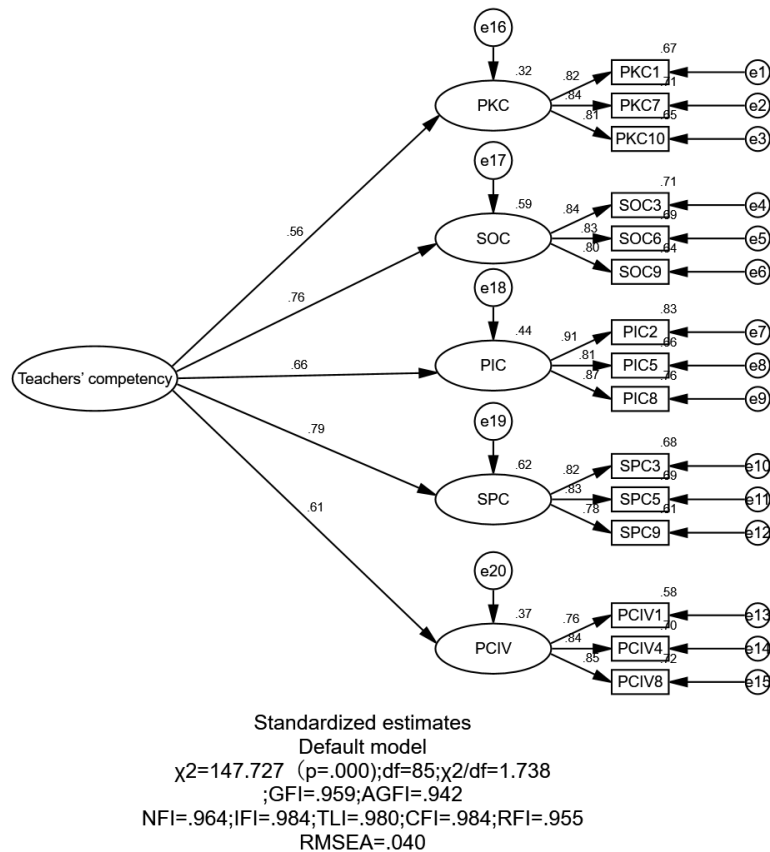


Table 4. The table is displayed as the statistical value of the model

Variate/Item	Std. Estimate	R ²	S.E.	C.R.	P	CR	AVE
PKC (0.564)							
PKC1	0.82						
PKC7	0.843	0.318	0.053	18.762	***	0.864	0.679
PKC10	0.808		0.057	18.169	***		
SOC (0.765)							
SOC3	0.844						
SOC6	0.833	0.585	0.048	19.736	***	0.866	0.684
SOC9	0.803		0.046	18.972	***		
PIC (0.660)							
PIC2	0.913	0.436				0.901	0.753

PIC5	0.814		0.039	22.622	***		
PIC8	0.873		0.038	25.26	***		
SPC (0.787)							
SPC3	0.824						
SPC5	0.829	0.619	0.05	18.663	***	0.853	0.660
SPC9	0.783		0.05	17.662	***		
PCIV (0.605)							
PCIV1	0.761						
PCIV4	0.835	0.366	0.068	17.225	***	0.857	0.667
PCIV8	0.851		0.065	17.389	***		

The results of the overall confirmatory factor analysis and the second-order model output from the table above indicate that the standardized factor loadings of each measurement item in the questionnaire are all greater than 0.5, which meets the standard. Furthermore, the standard error values of each item are also all within the standard range of less than 0.5, indicating that each measurement item can well explain the dimensional structure in which it resides. Therefore, this proves that the validity of the questionnaire in this study is good.

Table 5. Show the rank order of Squared Multiple Correlations

Components	Squared Multiple Correlations (R ²)	Rank order	% Explain
PKC	0.318	5	31.8%
SOC	0.585	2	58.5%
PIC	0.436	3	43.6%
SPC	0.619	1	61.9%
PCIV	0.366	4	36.6%

From the path coefficients of the second-order model, it can be inferred that:

The standardized path coefficient of professional knowledge and ability (PCK) on teacher competency was 0.564, indicating that professional knowledge and ability (PCK) has a significant impact on teacher competency and that the latent variable setting is reasonable.

The standardized path coefficient of skill operation ability (SOC) on teacher competency was 0.765, indicating that skill operation ability (SOC) has a significant impact on teacher competency and that the latent variable setting is reasonable.

The standardized path coefficient of professional innovation ability (PIC) on teacher competency was 0.660, indicating that professional innovation ability (PIC) has a significant impact on teacher competency and that the latent variable setting is reasonable.

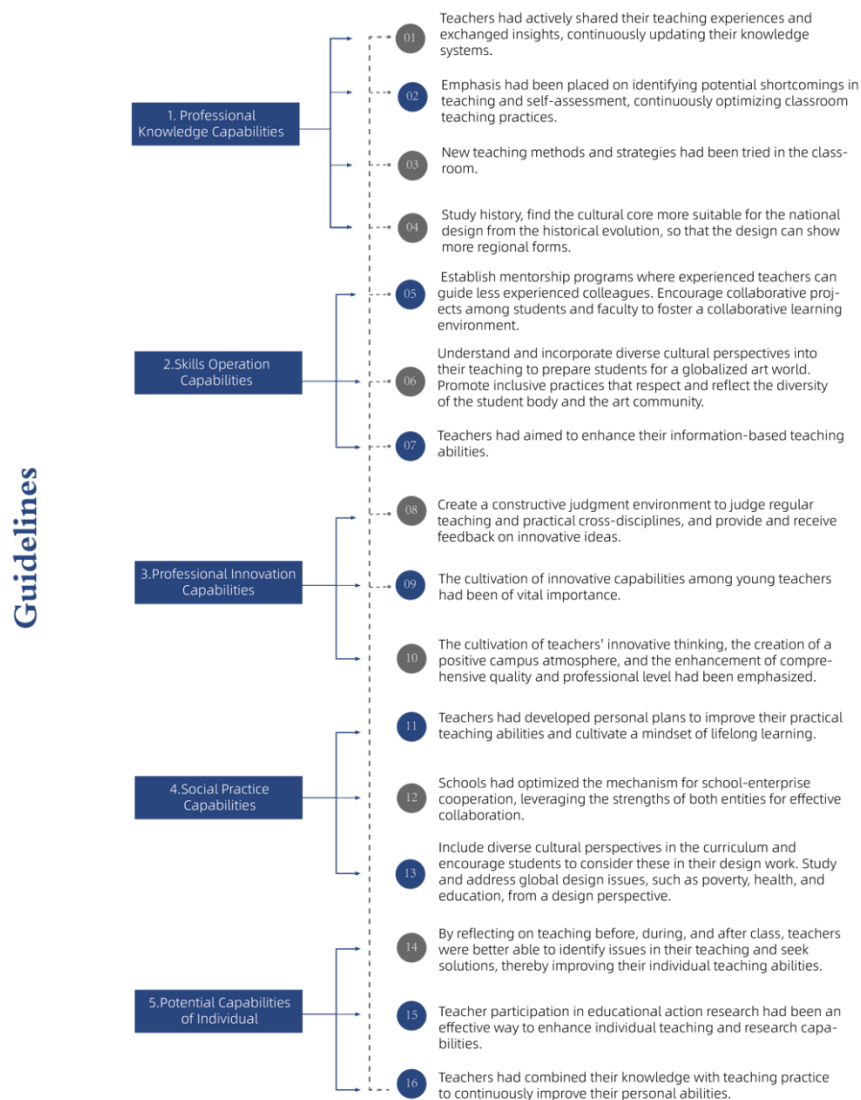
The standardized path coefficient of social practice ability (SPC) on teacher competency was 0.787, indicating that social practice ability (SPC) has a significant impact on teacher competency and that the latent variable setting is reasonable.

The standardized path coefficient of personal potential ability (PCI) on teacher competency was 0.605, indicating that personal potential ability (PCI) has a significant impact on teacher competency and that the latent variable setting is reasonable.

Research Results of Objective 3

By organizing a Focus Group Discussion around the 5 components of the teachers' competency model with 10 key informants.

Table 6 Guidelines for Improving the teachers' competency.



There were 16 guidelines for improving teachers' competency in art design universities located in Shenyang city, Liaoning Province.

Discussion

Discussion about Major Findings of Objective 1

As per this research finding, there were 5 components of the teachers' competency model which consisted of (1) Professional Knowledge Capabilities, (2) Skills Operation Capabilities, (3) Professional Innovation Capabilities, (4) Social Practice Capabilities, and (5) Potential Capabilities of Individual Variables. These findings were based on a comprehensive analysis of existing literature and the validation of field survey data. In the researcher's opinion, these elements contributed to fostering a Composition of the teachers' competency model of art design universities in Shenyang city under Liaoning Province. By improving the competence of teachers, students played a vital role in receiving quality education in art and design universities. It was essential to establish a solid basic knowledge of the design principles, techniques, and methods. This enabled university organizations to be more flexible and accurately adapt to the development and changes of the times, and obtain valuable social practice experience. Practical application skills were improved through the study of theoretical knowledge. Overall, these strategies supported a more flexible, responsive, and inclusive teaching style. This model was instrumental in enhancing the This model helped to improve the flexibility and adaptability of teachers' competency model of art design universities in Shenyang city under Liaoning Province. It helped create efficient and superior teaching methods, promoted open communication, personal creativity, and the development of professional abilities, enthusiasm for design, and interaction with positive peers. Additionally, it cultivated the ability of students to adapt and adhere to challenges, which was crucial in the dynamic educational environment.

Discussion about Major Findings of Objective 2

The research findings indicated that, based on theoretical and empirical data research, the teachers' competency model of art design universities in Shenyang city under Liaoning Province was consistent with the empirical data. The data analysis results presented the following confirmatory index values: $X^2/df = 1.738$, $df = 85$, $p\text{-value} = 0.000$, $GFI = 0.959$, $TLI = 0.980$, $CFI = 0.984$, $NFI = 0.964$, and $RMSEA = 0.040$. These indices satisfied the specified criteria: Relative Chi-square (X^2/df) < 2 (Diamantopoulos et al., 2000; Schumacker and Lomax, 2010), $p > 0.05$, GFI , TLI , $CFI \geq 0.95$, and $RMSEA \leq 0.05$ (Diamantopoulos et al., 2000; Fan and Sivo, 2009; Hair et al., 2010). All meeting the specified criteria demonstrated the model's excellent fit with the empirical data. Additionally, the analysis results indicated that the AVE values for all four components exceeded 0.5, and the CR values were all above 0.7 (Fornell and Larcker, 1981). These results suggested that the model, which included components like Professional knowledge capabilities, Skills operation capabilities, Professional innovation capabilities, Social practice capabilities and Potential capabilities of individual variables, was effective and practical for teachers' competency of art design universities in Shenyang city under Liaoning Province. The researcher believed that this model could significantly improve management efficiency and quality, addressing existing issues within these universities.

Based on the aforementioned research findings, the researchers believed that (1) Professional Knowledge Capabilities and ability referred to the development of teachers' professional knowledge and capabilities. It was proposed that the development of teachers' professional abilities should focus on the integration of personal knowledge and professional practice, which was crucial for both themselves and their teaching. This component helped address organizational and individual professional deficiencies. By ensuring the enhancement of teachers' capabilities and professional levels, a more professional and effective teaching

team could be created. These common points highlighted the collective understanding and consensus among the researchers at that time regarding the development of professional competencies among university educators. (2) Skills Operation Capabilities enhance the professional practice capabilities of art and design teachers in higher education, the following measures were taken: First, teachers were encouraged to actively participate in art and design practice through internships and part-time work to align with industry needs and enhance their practical skills. Secondly, interdisciplinary exchanges and collaborations were strengthened to promote the integration of art and design with related disciplines, broadening teachers' perspectives and thinking. Moreover, abundant practical teaching resources, including studios, laboratories, and practice bases, were provided to enable teachers to better apply their practical experience in the teaching process. Additionally, teachers were organized to attend professional training sessions and seminars to understand industry trends and cutting-edge technologies, thereby enhancing their professional quality. Lastly, a sound evaluation mechanism was established, incorporating teachers' practical capabilities into the assessment system to motivate them to continuously improve their professional practice capabilities. (3). Professional Innovation Capabilities Firstly, teachers were encouraged to participate in innovative art and design projects, based on practical experience, to explore new design concepts and methods. Secondly, interdisciplinary communication and collaboration were strengthened to promote the integration of art and design with related disciplines, broadening teachers' horizons and enhancing their thinking. Moreover, abundant innovative resources, including innovative studios, laboratories, and practice bases, were provided to allow teachers to better apply their innovative experiences in the teaching process. Additionally, teachers were organized to attend innovative training sessions and seminars to understand industry trends and cutting-edge technologies, thereby enhancing their innovative literacy. Lastly, a sound evaluation mechanism was established, incorporating teachers' innovative capabilities into the assessment system, to motivate them to continuously improve their innovative abilities. Through these measures, a favorable environment was created for enhancing teachers' innovative capabilities. (4) Social practice Capabilities enhance the social practice capabilities of art and design teachers in higher education, we encourage teachers to engage in various activities: Firstly, we advocate for teachers to actively participate in community projects and public art initiatives, fostering a deeper understanding of societal needs and cultural contexts. Secondly, we support the establishment of partnerships with local industries and organizations, allowing teachers to gain real-world experience and network with professionals. Thirdly, we provide platforms for teachers to showcase their work and engage with the public, enhancing their visibility and impact. Lastly, we foster a culture of reflection and critique, encouraging teachers to critically analyze their practice and seek continuous improvement. These initiatives aim to create an environment that nurtures and values teachers' social practice capabilities. (5) Potential Capabilities of Individual policy Personal potential was nurtured through professional development opportunities that fostered a culture of continuous learning and self-improvement. Teachers were encouraged to engage in creative problem-solving and innovation within their teaching practices. Support was provided for teachers to build strong interpersonal skills and emotional intelligence to foster positive relationships with students and colleagues. Lastly, work-life balance and wellness initiatives were promoted to enhance teachers' overall well-being and resilience. These strategies aimed to create an environment that would cultivate and enhance the personal potential of art and design teachers.

Discussion about Major Findings of Objective 3

The findings of Research Objective 3 were consistent with the existing literature, such as those found by Zhang Qian (2020). The study found that strategies such as conducting in-class dialogues, between-class dialogues, whole-class dialogues, and introducing authoritative teaching materials in knowledge construction teaching could effectively enhance college students' research abilities. The importance of skill operational capability was in line with the description by Li Yuan (2019), reflecting that the improvement of organizational members' practical operational levels was consistent with their own beliefs and values. Similarly, the research results of Wang Hongcai (2022) indicated that teacher competence could improve the self-efficacy of organizational members, including enhancing teachers' professional innovative capabilities. The emphasis was on the importance of innovative knowledge skills, innovative consciousness, innovative thinking, and innovative personality. Du Yanqiu and colleagues (2019) had discussed the competence of teachers, which enabled organizational members to develop through the process of engaging in social practice, a form of participatory skill enhancement. Zhu Yanjun (2021) had explored the manifestation and enhancement of individual potential in the field of teacher competence. It emphasized the importance of personal potential, including attributes such as adaptability, resilience, and a growth mindset, which made significant contributions to shaping the overall abilities of teachers.

The reasons for drawing these conclusions were that, first and foremost, the core of teacher competence lay in the enhancement of knowledge construction and skill teaching. Strategies such as conducting in-class dialogues, between-class dialogues, whole-class dialogues, and introducing authoritative teaching materials could effectively improve teachers' research capabilities. By strengthening communication and information sharing, administrators ensured that the goals and methods of all members remained consistent, which helped to enhance work efficiency and team collaboration. Secondly, there was an emphasis on improving teachers' professional innovative capabilities, highlighting the importance of innovative knowledge skills, innovative consciousness, innovative thinking, and innovative personality. Additionally, through participation in social practice and the enhancement and development of individual potential, the sustainable development of the organization was promoted. These research findings not only reflected the outcomes of theoretical research but were also validated through field surveys and focus group discussions in practical applications.

Synthesize the overall finding as the knowledge contribution

This study could explore how professional ability, innovation, and practice impact the effectiveness of teacher competency in art design universities in Shenyang city under Liaoning Province. These studies could help tailor methods that respect and incorporate teachers' efforts to enhance their competency, potentially increasing the efficiency of perspectives and teacher satisfaction.

To better understand the sustainability and long-term benefits of teacher' competency models, longitudinal research should have been conducted. This would involve tracking changes in classroom efficiency, teacher engagement, and student performance over several years following the implementation of teacher competency practices. Such research could provide valuable insights into the enduring impact of these models on the performance and resilience of art universities.

Further research may have involved comparative studies that focused on the outcomes of teacher' competency models in different regions and types of art and art design universities. By comparing the art and art design universities in Shenyang city under Liaoning Province

with institutions in other provinces or with different organizational structures, researchers could have identified best practices and potential challenges in implementing teacher competency models across different environments. This could have led to more general conclusions and recommendations that are applicable more widely within the education sector.

Suggestion

Based on the comprehensive research of the teachers' competency of art design universities in Shenyang city under Liaoning Province, t Three suggestions for further research:

(1) Policy Reforms for Professional Knowledge Capabilities: In response to the issue of insufficient individual professional and teaching abilities, it is recommended that art universities in Shenyang, Liaoning Province, formulate policies that emphasize the importance of comprehensive professional knowledge in design education. This includes a solid foundation in design principles, creative thinking, and the ability to innovate. The importance of quality education, a diverse perspective, and industry involvement is crucial for the cultivation of outstanding designers.

(2) Skills Operation Capabilities: Suggest the It was recommended that art universities strengthen their skill operation capabilities and reduce the traditional mode of written instruction. By enhancing skill training, teachers' abilities were elevated to a higher level of efficiency, allowing their ideas and skills to be clearly presented, thereby accelerating the improvement of teaching responsiveness.

(3) Professional Innovation Capabilities: Policies should be Emphasis and cultivation of both individual and collective creative abilities were placed, enabling teachers to become innovators in their respective fields, thus motivating students and providing guidance. Students were encouraged to engage in experimentation, take risks, and think beyond boundaries. In this manner, teachers were significantly enhancing students' innovative capabilities.

(4) Social Practice Capabilities: Policies were focused on establishing courses that emphasized social impact, community engagement, and social innovation design. These courses taught students how to apply design principles to solve real-world social problems and needs, enabling them to apply their skills in the real world. These experiences developed students' confidence and abilities in social practice. Different cultural perspectives were incorporated into the courses, and students were encouraged to consider these perspectives in their design work. Design perspectives were used to research and solve global design issues.

(5) Potential Capabilities of Individual Variables: Policies should have been developed to enhance the development of individual potential capabilities, focusing on nurturing teachers' skills in creativity, research abilities, and information sharing. This included the implementation of training programs aimed at fostering collaboration and interdisciplinary engagement in creative activities, enabling teachers to more likely transcend themselves and fully realize their potential.

These recommendations were aimed at expanding the understanding and application of teacher' competency in higher education management, addressing both the specificity of local circumstances and the generalizability of research findings across different environments.

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