Factors Affecting Students' Talent Model in Product Design Major in Universities of Zhuhai City, Guangdong Province

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ABSTRACT

The objectives of this research were: (1) To study the components of the students' talent of the Product major design in universities of Zhuhai City; (2) To development the model of factors affecting students' talent model in the Product major design in universities of Zhuhai City; and (3) To verify the mediators affecting on the relationship between the educational policy factor and the students' talent in the Product major design in universities of Zhuhai City, People's Republic of China.

The population for this research were teachers working in the academic year 2023 at five higher education institutions in Zhuhai city, Guangdong Province, totaling 3,622 teachers. The sample determined by G*Power software total 567 teachers and obtained by proportional stratified random sampling method. The data collection by a five score rating questionnaire. The statistic analyzed by Confirmatory Factor Analysis and Structural Equation Modeling techniques.

The research found that:(1) the components of the students' talent of the Product major design in universities of Zhuhai City were 4 components namely; multidisciplinary knowledge, teamwork and communication skills, problem-solving abilities and creative thinking skills, there were at moderate to high level. (2) The model of factors affecting students' talent model in the product major design in universities of Zhuhai City was fit well with empirical data (Chi-square=405,944, df=163, chi/df=2.490, TLI=.969, GFI=.929, CFI=.974, RMSEA=0.051); the educational policies, curriculum settings, teaching resources, and teacher competence there were significantly effect to students' talent in the Product major design ($p<.01$). and (3) The

educational policy factor had positive direct effect to the students' talent in the product major design in universities of Zhuhai city and had indirect effect through curriculum settings, teaching resources, and teacher competence, there were mediating variables effected.

Keywords: Product major design, Mediating effect, Educational policies, Students' talent

1. Introduction

Over the past few decades, higher education has shifted from a simple knowledge transfer approach to prioritize holistic student development, emphasizing practical skills to meet diverse societal needs. This shift is especially critical in fields like design, where students require not only theoretical knowledge but also problem-solving abilities and innovative thinking. However, traditional educational models often struggle to adapt to rapidly evolving societal and industrial demands. Therefore, thorough investigation and reform were necessary to address these emerging challenges. Among various design disciplines, product design programs receive significant attention due to their broad applicability and practical nature. The core objective of product design education is to cultivate students' capacity to translate creativity into viable products, encompassing skills like innovative thinking, technological application, market analysis, and user experience design. Higher education institutions need to explore more hands-on pedagogical approaches to better align with the needs of product design programs.

The central aim of this study was to deeply analyze and understand the key factors influencing the student talent model in product design programs in Zhuhai's higher education institutions. By comprehensively considering factors such as educational policies, teaching resources, faculty capabilities, and curriculum design, this research aims to reveal the interrelationships among these elements and their impact on the holistic development of student competencies. This study holds implications not only for academic endeavours but also for practical outcomes, directly affecting the effectiveness of higher education talent cultivation and its societal influence. Through this extensive investigation, insights will be gained on how to cultivate individuals equipped with interdisciplinary skills and innovative thinking, there by contributing to innovation in society.

Drawing upon researcher had seventeen years of experience as a senior educator in the field of higher education product design, the importance of nurturing exceptional design talents. Therefore, the value of this research lies in its in-depth exploration and systematic analysis of factors affecting the students' talent model, providing more scientific and rational guidance for higher education talent cultivation. Through this comprehensive investigation, the

research will offer valuable guidance for the reform of teaching and talent cultivation in higher education on product design programs. Additionally, the outcomes of this study will provide a fresh perspective on talent cultivation in the academic realm, bridging existing research gaps and offering valuable insights for related research endeavours. While the study primarily focuses on higher education product design programs in Zhuhai city, its results will undoubtedly have a positive impact on a broader range of higher education talent cultivation initiatives.

2. Research Questions

1. What are the components of the students' talent in the product design major in universities of Zhuhai City?

2. What is the model of factors affecting students' talent in the product design major in universities of Zhuhai City?

3. What are the mediating factors effect to the relationship between the educational policy factors and the students' talent in the product design major in universities of Zhuhai city?

3. Research Objectives

1. To study the components of the students' talent model in the product design major in universities of Zhuhai city.

2. To development the model of factors affecting students' talent model in the product design major in universities of Zhuhai city.

3. To verify the mediating effect on the relationship between the educational policy factor and the students' talent in the product design major in universities of Zhuhai city.

4. Research Hypothesis

H1: Educational policies had a positive direct effect to students' talent in the product design major in universities of Zhuhai city.

H2: Teaching resources had a positive direct effect to students' talent in the product design major in universities of Zhuhai city.

H3: Teacher competence had a positive direct effect to students' talent in the product design major in universities of Zhuhai city.

H4: Curriculum settings had a positive direct effect to students' talent in the product design major in universities of Zhuhai city.

H5: Educational policies had a positive direct effect to teaching resources in the product design major in universities of Zhuhai city.

H6: Educational policies had a positive direct effect to teacher competence in the product design major in universities of Zhuhai city.

H7: Educational policies had a positive direct effect to curriculum settings in the product design major in universities of Zhuhai city.

H8: Educational policies had an indirect effect to students' talent via teaching resources in the product design major in universities of Zhuhai city.

H9: Educational policies had an indirect effect to students' talent via teacher competence in the product design major in universities of Zhuhai city.

H10: Educational policies had an indirect effect to students' talent via curriculum settings in the product design major in universities of Zhuhai city.

Conceptual Framework

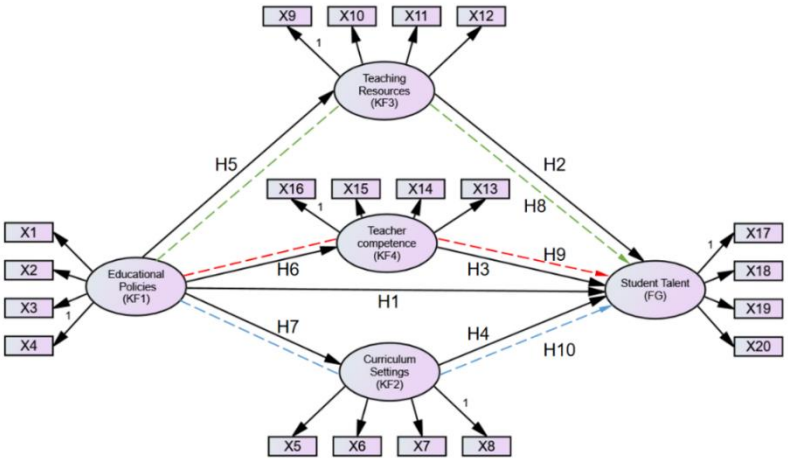

Figure 1 Conceptual framework of this research

5. Methodology

Research Design

This research was divided into three parts based on the research objectives:

Part One: Investigating the components of the students' talent model in the product design major in universities of Zhuhai City. In this part, extensive literature review and content analysis will be conducted to identify the constituent elements of the students' talent model in the product design major and study the factors that affecting the students' talent.

Part Two: Developing the model of factors affecting the students' talent in the product design major in universities of Zhuhai City, including educational policies, teaching resources, curriculum settings, and teacher competence. This part researcher used five rating scale questionnaires for correction data with the teachers in the product design major. the data analyzed by confirmation factor analysis and structural equation model.

Part Three: decompose on the factors affecting the students' talent model in the product design major in universities of Zhuhai City, and hypothesis testing for the effect of educational policies, teaching resources, curriculum settings, and teacher competence on the students' talent, and verified direct and indirect effect or mediating effect of factors affecting the students' talent model in the product design major in universities of Zhuhai City.

Population and sample

The population for this research were the teachers working in academic year 2023, from five higher education institutions in Zhuhai city, Guangdong Province. The total number was 3,622 teachers. The sample was 567 teachers which calculated by G*power software and used proportional stratified random sampling technique.

Instruments

The instrument for this research was a rating 5-point questionnaire. The questionnaire was divided into main 2 parts:

Part I: For the basic information of the respondents on 5 items; includes gender, age, educational background, position tittle and work experience.

Part II: A total of 60 questionnaires about component of students' talent in product design major, including the factor of educational policies, teaching resources, curriculum settings, and teacher competence. There were validity (IOC) of each item between 0.60 - 1.00, and reliability by Cronbach alpha coefficient of each factors between .89 - .97

Data Collection

This research conducted data collection through a questionnaire star application survey on the teachers involved in the Product Design major at five higher education institutions in Zhuhai City, Guangdong Province, during the 2023 academic year. The questionnaire was distributed to teachers through various channels, including online survey websites, email, and WeChat.

Data analysis

1.Descriptive statistics

In this research, the data analyzed by SPSS software for descriptive statistical, including frequency, percentage, mean, standard deviation, coefficient of variation (%CV), Skewness, Kurtosis, Madia's coefficient, and Pearson correlation.

2. Measurement model analysis

The measurement model analysis was conducted using the AMOS software. Model evaluation involved the chi-square test to assess the fit of the models to the empirical data, included chi-square, degrees of freedom, standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), p-value close, and structural equation model.

6. Results

1) Demographic statistics

Table 1 Demographic statistics for samples:

Information		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Female	269	47.4	47.4	47.4
	Male	298	52.6	52.6	100.0
	Total	567	100.0	100.0	
Age	25-34	152	26.8	26.8	26.8
	35-44	205	36.2	36.2	63
	45-54	101	17.8	17.8	80.8
	More than 55	109	19.2	19.2	100
	Total	567	100	100	
professional title	Teaching assistant	166	29.3	29.3	29.3
	Lecturer	251	44.3	44.3	73.5
	Associate Professor	92	16.2	16.2	89.8
	Professor	58	10.2	10.2	100.0
	Total	567	100.0	100.0	
education background	Undergraduate	40	7.1	7.1	7.1
	Master	268	47.3	47.3	54.3
	Doctor	163	28.7	28.7	83.1

Information		Frequency	Percent	Valid Percent	Cumulative Percent
	Others	96	16.9	16.9	100.0
	Total	567	100.0	100.0	
Experience	< 5 Years	136	24.0	24.0	24.0
	5 – 10 Years	186	32.8	32.8	56.8
	10 – 15Years	193	34.0	34.0	90.8
	>15 Years	52	9.2	9.2	100.0
	Total	567	100.0	100.0	

Table 4.1; the basic information of respondents on gender majority was male at 52.60%; Age between 35-44 years as 36.20%, Professional tittle was lecturer at 44.30%, Educational background was master degree at 47.30% and Experience was 10-15 years at 34.0%

2) Multivariate normality assessment

Tables 2 Descriptive data for all observed variables

Variable	indicator	$\overline{X}$	S.D.	CV	skewness	kurtosis	Shapiro-Wilk W	Shapiro-Wilk p.
KF01	X1	3.24	0.944	29.14%	-.076	-.936	.965	<.001
	X2	3.16	1.007	31.84%	-.021	-.956	.964	<.001
	X3	3.31	0.922	27.86%	.050	-1.045	.956	<.001
	X4	3.39	0.883	26.07%	-.069	-.898	.964	<.001
KF02	X5	3.37	0.891	26.43%	-.101	-.895	.958	<.001
	X6	3.33	0.890	26.74%	-.084	-.812	.966	<.001
	X7	3.37	0.905	26.83%	-.120	-.789	.959	<.001
	X8	3.30	0.899	27.26%	-.016	-.759	.965	<.001
KF03	X9	3.25	0.873	26.83%	.068	-.740	.967	<.001
	X10	3.18	0.933	29.32%	.075	-.684	.970	<.001
	X11	3.26	0.856	26.27%	-.026	-.807	.966	<.001
	X12	3.28	0.840	25.57%	.048	-.788	.963	<.001
KF04	X13	3.47	0.832	24.01%	-.188	-.712	.963	<.001
	X14	3.26	0.941	28.91%	.069	-.796	.965	<.001
	X15	3.43	0.859	25.03%	-.098	-.759	.962	<.001

Variable	indicator	$\overline{X}$	S.D.	CV	skewness	kurtosis	Shapiro-Wilk	
							W	p.
	X16	3.44	0.820	23.87%	-.072	-.883	.958	<.001
	X17	3.63	0.910	25.09%	-.668	-.155	.941	<.001
FG05	X18	3.63	0.826	22.73%	-.424	-.194	.965	<.001
	X19	3.48	0.901	25.90%	-.363	-.546	.964	<.001
	X20	3.46	0.853	24.65%	-.240	-.749	.967	<.001

Tables 2 presents descriptive statistics for all observed variables used in the research, labeled as X1 through X20. There were mean between 3.16-3.63 at moderate to high level, the skewness were between -.098 to -.668, kurtosis were between -.155 to -1.045 and shapiro-wilk was significant at .001, that show on the indicators distribution with normal curve patterns.

Table 3 The Square Matrix of Intercorrelation Between Latent Variables

Latent Variables	KF01	KF02	KF03	KF04	FG05
KF01	1				
KF02	.364**	1			
KF03	.379**	.335**	1		
KF04	.348**	.442**	.342**	1	
FG05	.571**	.586**	.550**	.563**	1

. Correlation is significant at the 0.01 level (2-tailed).

In this study, the latent variables had the intrecorrelation among latent variables: KF01, KF02, KF03, KF04, and FG05. there were correlation between .335 to .586 with statistical significance at .01 level.

3) Measurement model

In the measurement models specification in this research, the researcher identified five factors: (1) Educational policies (KF01), (2) Curriculum Settings (KF02), (3) Teaching resources (KF03), (4) Teacher competence (KF04), and (5) Students' talent (FG05). Additionally, there were 20 observed variables: X1-X20. as figure 2

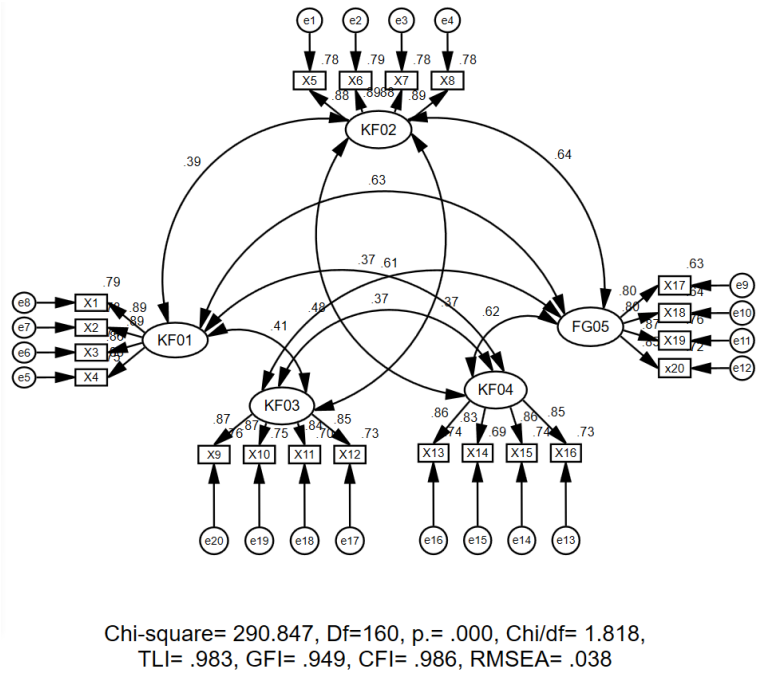

Figure 2 The Measurement Model in Standardized estimates.

The figure 2 the measurement model of factors affecting the students' talent model in the product design major in universities of Zhuhai City fit well with empirical data (Chi-square=405,944, Df=163, Chi/Df=2.490, TLI=.969, GFI=.929, CFI=.974, RMSEA=0.051).

Table 4 Measurement model fit valuation after modifying.

Measure	Estimate	Threshold	Interpretation
CMIN	290.847	--	--
DF	160	--	--
CMIN/DF	1.818	1-3 Excellent,3-5 Acceptable	Excellent
CFI	0.986	>0.95 Excellent, >0.9 Acceptable	Excellent
GFI	0.949	>0.95 Excellent, >0.9 Acceptable	Excellent
TLI	0.983	≥0.90 Excellent, >0.8 Acceptable	Excellent
RMSEA	0.038	<0.05 Excellent, <0.08 Acceptable	Excellent
P-Close	0.355	>0.05	Excellent

4) Test for the quality of measurement model

Table 5 The results of validity analysis

	CR	AVE	MSV	MaxR(H)	KF02	KF03	KF01	KF04	FG05
KF02	0.936	0.784	0.404	0.936	**0.885**				
KF03	0.917	0.734	0.368	0.918	0.365***	**0.857**			
KF01	0.929	0.766	0.398	0.930	0.394***	0.411***	**0.875**		
KF04	0.914	0.727	0.380	0.915	0.476***	0.369***	0.372**	**0.853**	
FG05	0.899	0.690	0.404	0.903	0.636***	0.606***	0.631**	0.617**	**0.831**

In order to identifying the latent variable composite reliability was between .899 to .936 (CR≥0.70), MSV less than AVE and the MaxR(H)>CR, and to identifying the convergent validity of the AVE≥0.50, to identify the discriminant validity by the method of Fornell & Larcker(1981,pp,39-50), the square root of AVE of latent variables must be more than its shared variance to other latent variables.

Table 6 HTMT Analysis

	KF02	KF03	KF01	KF04	FG05
KF02					
KF03	0.36				
KF01	0.389	0.408			
KF04	0.478	0.371	0.373		
FG05	0.639	0.604	0.622	0.62	

the HTMT analysis results indicate that the latent factors in the study generally possess good discriminant validity, implying their conceptual independence and minimal susceptibility to substantial cross-factor contamination. These findings hold important implications for confirming the soundness and efficacy of the measurement model, further solidifying the reliability and validity of the study.

5) Structural Equation Model

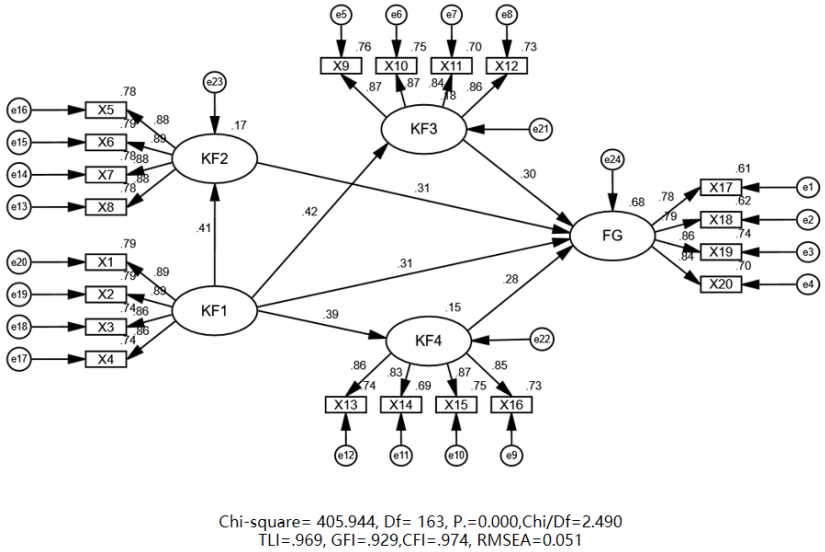

Figure 3 Structural Equation Models and Model Evaluation in Standardized

The assessment of the structural model's fit revealed the following goodness-of-fit statistics: the chi-square statistic resulted in a value of 405.944 with 163 degrees of freedom (Df), yielding a p-value of 0.000. The ratio of chi-square to degrees of freedom (Chi/Df) was calculated as 2.490. Additional fit indices included the Tucker-Lewis Index (TLI) at 0.969, the Goodness of Fit Index (GFI) at 0.929, the Comparative Fit Index (CFI) at 0.974, and the Root Mean Square Error of Approximation (RMSEA) at 0.051.The computed fit indices collectively indicated an acceptable level of fit for the structural equation model. And show the hypothesis testing as the table 7

Table 7 The hypotheses testing of direct effects

Relationship			Unstd.	Std.	S.E.	C.R.	P.	Hypothesis
FG	<---	KF1	0.284	0.313	0.035	8.161	***	H1
FG	<---	KF3	0.269	0.296	0.034	8.029	***	H2
FG	<---	KF4	0.276	0.280	0.037	7.52	***	H3
FG	<---	KF2	0.271	0.312	0.033	8.314	***	H4
KF3	<---	KF1	0.424	0.424	0.044	9.615	***	H5
KF4	<---	KF1	0.36	0.391	0.041	8.753	***	H6
KF2	<---	KF1	0.43	0.412	0.046	9.396	***	H7

Significance Indicators: ***p<0.010 (Gaskin& Lim, 2018)

The analysis of Table 7 reveals that all the direct hypotheses (H1 to H7) exhibit statistically significant effects based on their C.R. values and significance indicators. The standardized path coefficients further elucidate the strength and direction of these direct relationships among latent variables.

Table 8 The decomposition on the indirect effects

Indirect path	Std.	95% C.I		Hypotheses
		Lower	Upper	
KF1-->KF2-->FG	0.128	0.088	0.182	H8
KF1-->KF3-->FG	0.126	0.084	0.174	H9
KF1-->KF4-->FG	0.110	0.069	0.160	H10

Table 8 displays the indirect effects of educational policy factor (KF1) obtained through curriculum settings(KF2), teaching resources(KF3), teacher competence(KF4) to students' talent of Product Design majors in universities in Zhuhai City, The outcomes of these effect decomposition analyses provide pivotal insights into the mediation roles of various intermediary variables under different hypotheses.

7. Conclusion

1) The factor affecting model of the students’ talent of Product Design majors in universities in Zhuhai City, including educational policies, curriculum settings, teaching resources, teacher competence. The overall there were at moderate to high level.

2) The model of the students’ talent of Product Design majors in universities in Zhuhai City, when using structural equation model analysis, demonstrated a strong fit with empirical data.

3) The educational policies factor; curriculum settings factor, teaching resources factor and teacher competence factor had positive direct effect on students' talent with statistical significant ($p<.001$ level), and the educational policy factor had indirect effect on the students’ talent of product design major through curriculum settings factor, teaching resources factor and teacher competence factor, there were mediators variables or the mediating effects on path analysis.

8. Discussion

From the literature, it can be observed that research primarily encompasses various aspects of the students' talent model, such as curriculum settings, teaching resources, teacher competence, and educational policies. However, the cross-interactions and combined effects of these factors have been relatively underexplored. Existing literature emphasizes the significance of each individual factor in nurturing student talent according studies by Sun et al. (2023), Zhang and Jiang (2005), Huang and Wang (2009), among others, underscore the crucial role of educational policies in fostering an environment conducive to diverse student development. Moreover, investigations by Hou (2013) and Gao (2013) highlight the importance of curriculum settings and teaching resources in enhancing student engagement and learning experiences.

These research often concentrate on specific dimensions of the students' talent model, occasionally overlooking the overall interactions among influencing factors. In contrast, the present researchers have adopted a comprehensive approach by simultaneously investigating all relevant factors and their interrelationships. This holistic perspective enables a more comprehensive understanding of the factors influencing student talent development in the context of product design education. By comprehensively considering the relationships between educational policies, teaching resources, teacher competence, curriculum settings, and student talent, we construct more comprehensive students' talent model. Through this comprehensive research approach, we gain a better understanding of the interconnections among these influencing factors in practical applications. This research not only uncovers the direct impacts of each influencing factor on student talent but also reveals indirect pathways of educational policies influence on students' talent, the researcher identify the significant mediating roles of teaching resources, teacher competence, and curriculum settings. This finding enhances our comprehension of the intricate relationships between different influencing factors and provides substantial evidence for optimizing student talent development in the future.

9. Recommendations

Based on the conclusions drawn from the analysis of factors affecting the students' talent model in the Product Design major, the following targeted recommendations are proposed to further enhance the cultivation of students' talent in this field:

1. Enhance Support for Relevant Educational Policies:

Government and educational authorities should increase their support for Product Design education. Encouraging the establishment of dedicated funds, scholarships, and sponsorship programs, as well as innovative projects in collaboration with enterprises, can motivate students to engage actively in learning and innovation. Additionally, the implementation of monitoring and evaluation mechanisms for these policies is essential to ensure their effective execution and continuous improvement.

2. Optimize Teaching Resources:

Institutions should invest more in Product Design education by updating and upgrading teaching facilities and software/hardware equipment. Creating advanced laboratories and studios, providing abundant teaching materials and reference books, and offering opportunities for practical learning can enrich students' hands-on experience. Collaborating with enterprises to introduce cutting-edge technology and practical experiences into teaching enhances the practicality and applicability of the resources.

3. Foster Faculty-Student Exchange and Collaboration:

Organizing academic exchange activities between faculty and students and inviting industry professionals to guide student projects can increase students' exposure to real-world projects. This deepens their understanding of the Product Design industry, enhances their creative and presentation skills, and personalized mentorship by assigning teachers as mentors can help students develop their potential more effectively.

4. Strengthen Practical Course Components:

Schools should continuously optimize the curriculum based on market demands and industry trends, placing a strong emphasis on practical teaching. Incorporating hands-on project courses and internship components allows students to apply theoretical knowledge in practical contexts and cultivate problem-solving abilities. Collaborating with enterprises to introduce real-world projects into the curriculum enables students to learn and develop within authentic industry projects, boosting practical experience and work-related skills.

5. Elevate Faculty Professional Development:

Encouraging faculty participation in industry training and academic exchanges is crucial for improving teaching quality and design expertise. A skilled faculty team provides a conducive learning environment and academic guidance. Instituting a faculty reward system can incentivize excellence in teaching and research accomplishments.

6. Establish Industry-Academia Research Collaboration Platforms:

Actively collaborating with enterprises and research institutions to establish industry-academia research platforms is beneficial. Engaging in real-world projects through

collaboration with enterprises enhances students' understanding of industry demands and improves practical capabilities and professional knowledge. Establishing industry-academia research bases offers more practical opportunities and innovation platforms, promoting a deeper integration of academia, industry, and research.

7. Enhance Industry-Oriented Education:

Schools should closely monitor the evolving trends of the Product Design industry and adjust the curriculum accordingly to ensure alignment with industry practices. Introducing industry professionals to teach practical skills helps students adapt better to their careers. Involving industry experts in curriculum design and teaching deepens industry-oriented education in terms of depth and breadth.

8. Encourage Student Engagement in Social Practices:

Encouraging students to actively participate in social practice activities, such as engaging in enterprise project activities or social welfare initiatives, enhances their societal experiences and problem-solving abilities. Instituting a reward system for student engagement in social practices acknowledges and rewards their proactive involvement.

9. Provide Innovation and Entrepreneurship Platforms:

Establishing guidance and platforms for students with innovation and entrepreneurial aspirations encourages them to undertake innovative projects in the Product Design domain. Creating innovation and entrepreneurship incubation centers that offer resources and support fosters a conducive environment for student entrepreneurship.

10. Foster Industry Collaboration Mechanisms:

Schools should establish mechanisms for collaboration with enterprises and industry associations, strengthening industry-academia collaboration and achieving a close relationship between academia and industry. Enterprises provide practical platforms and project resources, while schools offer technical support and talent cultivation, fostering a win-win collaboration. These mechanisms promote a deeper integration of academia, industry, and research, enhancing student engagement in real-world projects and practical capabilities.

In conclusion, by strengthening policy support, optimizing teaching resources, enhancing faculty competence, and implementing industry-oriented education, the cultivation of student talent in the Product Design major can be significantly improved. Encouraging faculty-student exchange and collaboration, establishing industry-academia research collaboration platforms, enhancing the practicality of the curriculum, contributes to students' better integration into industry practices, laying a solid foundation for their future careers. Collaborative efforts among schools, government bodies, and enterprises are essential to

continuously innovate and enhance the student talent model in Product Design, making valuable contributions to industry development and societal progress. Only through continuous optimization and improvement of the educational system for Product Design can we cultivate more outstanding talents who can adapt to the rapidly changing market demands and technological advancements, contributing positively to societal innovation and progress.

10. Recommendation for Further Research

While this study has provided valuable insights into the factors affecting the student talent model in the Product Design major, there are several avenues for further research that can contribute to a deeper understanding of this field. The following recommendations highlight potential areas of research for future scholars:

1) Longitudinal Studies: Conducting longitudinal studies to track students' development and career trajectories in the Product Design field over an extended period. This would provide insights into the long-term impact of educational policies and curriculum changes on students' talent and career outcomes.

2) Cross-Cultural Comparative Studies: Exploring cross-cultural differences in the factors influencing student talent in Product Design. Comparative studies involving universities in different regions or countries can reveal how cultural and contextual factors affect talent development.

3) Impact of Technological Advancements: Investigating how emerging technologies, such as artificial intelligence and virtual reality, influence Product Design education and talent development. This research can assess the integration of these technologies into the curriculum and their impact on students' skill sets.

4) Assessment Methods: Developing and evaluating innovative assessment methods to measure student talent more effectively. Research in this area can contribute to the refinement of assessment tools tailored to the specific needs of Product Design education.

5) Industry-Academia Collaboration Models: Analyzing different models of collaboration between educational institutions and industry partners. Exploring successful collaboration models can provide insights into how to enhance students' exposure to real-world projects.

6) Impact of Pedagogical Approaches: Investigating the impact of different pedagogical approaches, such as project-based learning, on student talent development. This research can

assess the effectiveness of various teaching methods in preparing students for the Product Design industry.

7) Globalization and Internationalization: Studying the effects of globalization and internationalization on Product Design education. This includes analyzing the mobility of students and faculty, international collaboration, and the globalization of design trends.

These research recommendations offer a glimpse into the potential areas of study that can further enrich our understanding of the factors influencing student talent in the Product Design major. Addressing these topics can lead to improvements in education and talent development in this dynamic field. Researchers and educators are encouraged to explore these avenues to contribute to the continued advancement of Product Design education and practice.

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