



Research on Cultivation of Postgraduate Students of Humanities and Social Sciences under the Background of Digitalization and Discipline Integration

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Abstract. This study takes postgraduate students of journalism and communication as an example, focusing on the educational reform of postgraduate students of humanities and social sciences under the background of subject integration in digital era. The key factors that influence the effect of postgraduate education and the relationship between their internal paths are discussed. First of all, the paper applies the grounded theory to the case analysis, and extracts four core dimensions: Discipline fusion, theory practice, teaching evaluation and international training. The study found that the factors of subject fusion had the greatest influence, among which the factors of course fusion quality, students' accomplishment and college barriers had significant influence on the effect of postgraduate education. The factors such as the proportion of curriculum, the level of adaptation between school education and industry demand and the motivation of tutors play a key role. The influence of internationalization training and teaching evaluation is not significant. There is a path fault between the teaching evaluation level and the training effect of postgraduates.

Keywords: Humanities and social sciences; Information dissemination; Postgraduate training; Discipline integration; Digitalization

1 Introduction

Under the background of digital era, new technologies such as big data, cloud computing and 5G are developing rapidly, especially artificial intelligence represented by DeepSeek as the core force of a new round of technology revolution, which is reshaping the pattern and ecology of news communication industry. The new social environment makes the demand for talents more and more diversified, and the traditional education mode is difficult to adapt to the requirements of the new era. Thus, Through the construction of multi-dimensional training environment and mechanism, it has become the industry consensus to train the complex innovative talents who can solve comprehensive problems.

Interdisciplinary integration is a mode of integrating two or more disciplines, crossing a single discipline through discipline integration and resource sharing, and cultivating high-level talents with complex cross-border integration ^[1]. Under the

background that the single subject can not solve the social problems in an all-round way, the interdisciplinary training mode provides new ideas and methods for the postgraduate education of journalism and communication.

The purpose of this study is to deeply analyze the main factors that affect the postgraduate education in humanities and social sciences and to verify the hypothesis based on the structural equation model. Through this methodological framework, this paper discusses the reform path of postgraduate education under the background of digital era, and puts forward concrete reform strategies and suggestions.

2 Literature Review

In the aspect of subject integration, Fan Mingxian^[1] and others think that postgraduate education should adhere to the cultivation concept of cross-subject integration, construct the cross-subject integration curriculum system, cooperate with the internal and external scientific research resources and industrial resources, and establish the model of liberal arts postgraduate education with cross-subject and coordinated integration. Ma Mei^[2] and others also emphasized that we must solve the problems in reality by interdisciplinary, while strengthening the foundation of the disciplines, actively expand the boundary to meet the needs of cross-disciplinary talents in the era of artificial intelligence. At the same time, Xiong Yin^[3] and others also emphasized that the data ability is the core competitiveness of the news communication practitioners. Wang Xinqing^[4] and others, put forward the digital reform path of "intelligent screening and optimization of enrollment process, data-driven communication of multiple subjects, and accurate depiction of linked employment market."

In the aspect of theoretical practice course setting, Quan^[5] found through research that there are problems in the postgraduate course system of communication science in China's university of science and engineering, such as inaccurate training objectives and low degree of course matching. Zhu Xiuling^[6] also found in his research that there are some problems in the process of postgraduate education of news communication, such as the unclear orientation of postgraduate education and the uneven quality of students. Meng Fansheng^[7] and others put forward the cultivation mode of new liberal arts postgraduate based on the thinking ability of big data from two aspects: Theory course and practice course. He Genmin^[8] and others also think that the training mode of communication postgraduate should promote the traits of "platform plus specialty" and build a cooperative training mechanism relying on the practice education base outside the school.

In the aspect of teaching evaluation, Jia Yuping,^[9] et al., studied the management mode of postgraduate training process, and considered that a benign feedback mechanism should be established from three aspects of student feedback, school feedback and social feedback to improve the course feedback and evaluation system. Zhang Kun^[10] and others emphasized the importance of teacher evaluation in the teaching evaluation system, and considered that the training of high-level talents must begin with the construction of high-level teachers. In the study, Fan Mingxian^[11] and others found that there are some drawbacks in the process of academic education, which

affect the students' experience and feedback evaluation of college education. In the research, Ren Mengshan ^[12] pointed out that the evaluation of graduate students should not only rely on the thesis, but also add news works, design works, cases, etc. in line with the form of the professional field, and fully show the practical and diversified orientation.

In the aspect of international cultivation, Wang Fangru ^[13] and Xiong Ting ^[14] proved that cultivating postgraduates with international vision, international communication ability and international work ability plays an important role in promoting the competitiveness of all aspects of our country. Li Jianxin ^[15] and others think that the training of international communication talents in China must actively promote the "workshop" teaching mode oriented by practice practice and special subject teaching, and at the same time develop the new practical teaching mode of joint training between schools and media platforms, government and enterprises, and foreign universities.

Although the importance of interdisciplinary training is emphasized, there is no concrete practice path and operational scheme, especially in the aspect of integrating resources, breaking barriers and perfecting curriculum system. The research on the dimension of theoretical and practical courses mainly focuses on the optimization of the course system, and there is no systematic scheme for the problems such as the accurate matching of theoretical and practical courses and the evaluation of the quality of practical courses. The research of teaching evaluation focuses on the system construction, but the feedback mechanism and application effect of evaluation results are not deeply discussed. it fails to study whether international cultivation has direct influence on postgraduate cultivation.

3 Research Design

This study first explores the influencing factors of postgraduate education in journalism and communication through grounded theory, then uses Structural Equation Modeling (SEM) to verify the hypotheses, and finally analyzes the current dilemmas and reform paths of postgraduate education based on the results of empirical analysis.

Grounded theory is a qualitative research method integrated with quantitative techniques, which aims to organize and summarize collected interview data, extract universal theoretical categories through a step-by-step coding process, and construct systematic and independent theories. This study follows the coding procedures of grounded theory to mine original interview data, so as to accurately identify the influencing factors and their complex interactions in postgraduate education.

Structural Equation Modeling is an empirical research method based on path analysis, which comprehensively applies various statistical methods to establish, evaluate and test the correlations among variables, and appropriately assesses the model. This model can examine causal relationships between variables and analyze the impact of individual variables on the whole.

Since the exclusive use of grounded theory to construct a model of influencing factors on postgraduate education may lead to a certain degree of subjectivity, this

study, on the basis of extracting influencing factors and dividing dimensions via grounded theory, designs questionnaires to collect data and conducts hypothesis testing through Structural Equation Modeling, so as to more accurately identify the key points of reform in postgraduate education in journalism and communication.

4 Identification of Influencing Factors of Postgraduate Cultivation Effect Based on Grounded Theory

4.1 Data Collection

This study adopted a semi-structured interview approach dominated by offline interviews supplemented by online interviews, and conducted in-depth interviews with 5 teachers and 10 students majoring in journalism and communication. The interviews mainly focused on exploring the key factors currently affecting the training effectiveness of postgraduate students. The interview were conducted in December2024. Each interview lasted 50 to 90 minutes, and the entire interview process was recorded to ensure the authenticity and reliability of the data.

The interviewees in this study were from various types of higher education institutions, including universities of science and technology, normal universities, universities with specialized disciplinary focuses, and comprehensive universities, so as to ensure the diversity and representativeness of the sample. The aim was to obtain comprehensive insights into the factors influencing the training effectiveness of postgraduate students in journalism and communication from different educational backgrounds and disciplinary characteristics.

4.2 Result Encoding

The interview was recorded throughout to ensure accuracy, and the recorded content was corrected by the interviewees after transcription to accurately reflect their views. After the recording content is converted into text, the interview content is coded by NVivo14 software according to the three-level coding process of the theory.

Open Coding.

Open coding is the process of comparing, classifying and summarizing the original data of interview. It transforms the original data into conceptualization and abstraction, develops new concepts and abstracts the initial concept, which can abandon the concept of low frequency and focus on interview. In the initial open coding stage, this paper keeps an open attitude, browses the original interview data level by level, extracts 96reference points, and finally obtains 143 initial concepts after the preliminary conceptualization, further classifies the initial concepts, and obtains 21basic categories such as form fusion and undergraduate education. Examples of open coding are shown in Table 1.

Table 1. Examples Of Open Coding

Original statement	Initial concept	Basic category
A1: The quality of subject fusion course is not high, but the form fusion, the content fusion degree is not enough, the content is too thin, and the depth of knowledge is not enough.	Low quality, form fusion, thin content and insufficient depth of knowledge	Form fusion
A2: At present, the subject integration course does not open the training level of undergraduates and postgraduates, and the postgraduates are still in the course of undergraduates, and there is no ideological elevation.	Cultivating level does not pull open, lack of thought uplift	Under-graduate education

Spindle Coding.

The main-axis coding is the key link of further mining, analyzing and comparing the interview results. In the stage of main-axis coding, this paper abstracts from 21 basic categories, and finally obtains 12 main categories such as the lack of cross-course quality. The main shaft encoding contents are shown in Table 2.

Table 2. Examples of Spindle Coding

Main category	Basic category	Conceptual interpretation
Insufficient quality of course integration Students' learning attainment is weak Barriers to College Integration Curriculum	Form fusion	The lack of effective integration of different disciplines leads to formal integration and content renewal, which affects the quality of courses
	Content lag	
	Undergraduate education	Some graduate students lack diversified subject background and their overall learning attainment is weak
	Students have a single disciplinary background	
Imbalance between theoretical and practical courses	It is difficult to identify teachers' workload	The lack of flexibility in the institution's internal curriculum, the difficulty in identifying teachers' workload and approving the integration curriculum
	Difficult to approve integration courses	
	The overall proportion of practice courses is less	In the course structure, the proportion of practice course is low, the effect of stuffing theory course is not good, and the matching degree between practice resources and students' needs is low, which leads to the imbalance between theory and practice teaching
	Poor effect of duck filling theory course	
Unbalanced demand between school education and industry	Old laboratory equipment	The content of school education is disjointed with the demand of the industry, the students' ability fails to meet the demand of the enterprise, and the education adaptation level is low
	Low matching between practice resources and demand	
	School education is disconnected from industry demand	
	Students' ability is disconnected from the needs of enterprises	

Selective Encoding.

Selective coding is the process of integrating and condensing the main category, extracting the core category, and defining the story and theoretical framework around the core category according to the relationship between the main categories. By analyzing the principal axis of 12 main categories and combining with the original data, this paper abstracts four core categories, which are subject fusion, theory practice, teaching evaluation and international cultivation, as the four main dimension factors that influence the effect of postgraduate education in journalism and communication. The selective encoding contents are shown in Table 3.

Table 3. Selective Coding Content

Main dimensions (Core category)		Main category
Influencing factors of postgraduate training effect	Subject fusion	Insufficient quality of course integration
		Students' learning attainment is weak
		Barriers to College Integration Curriculum
	Theoretical practice	Imbalance between theoretical and practical courses
		Unbalanced demand between school education and industry
		Unbalanced effort and reward of tutors in the industry
		It is difficult to balance the guiding relationship
	Teaching evaluation	Dislocation Cultivation of Specialized Students
		Uneven teaching staff professionalism
	International cultivation	International community environment
		College management level Student economic conditions

5 Test of Influencing Factors of Postgraduate Cultivation Effect Based on Structural Equation Model

5.1 Model Construction and Hypothesis Proposal

After completing the root theory analysis and extracting 4 core categories and 12 main categories of subject fusion, theoretical practice course setting, teaching evaluation and international training, this paper constructs a preliminary model that affects the effect of postgraduate education in journalism and communication. The specific model diagram is shown in Figure 1.

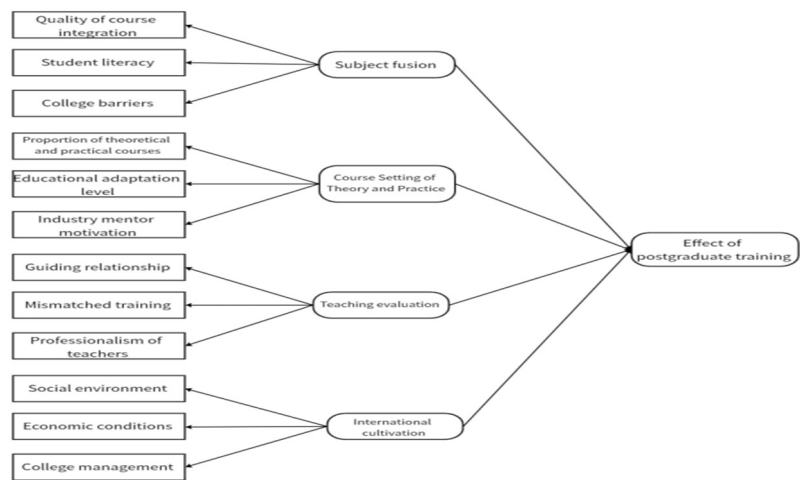


Fig. 1. Study Model Diagram

Based on this research model, a series of assumptions are proposed:

Subject Fusion.

Subject fusion can not only cultivate students' ability to analyze and solve problems from a multi-disciplinary perspective, but also broaden the perspective of post-graduate students and improve their overall literacy. Therefore, the following assumptions are proposed:

- H1: Subject Fusion Significantly Influences Postgraduate Cultivation
- H1.1: The quality of course integration significantly affects discipline integration
- H1.2: Student Literacy Significantly Influences Discipline Integration
- H1.3: College barriers significantly affect discipline integration

Course Setting of Theory and Practice.

Theory course can provide systematic knowledge framework and methodology guidance for practice, while social practice can verify and deepen theory through the application of real situation. Therefore, the following assumptions are proposed:

- H2: Theoretical and Practical Curriculum Setting Significantly Influences Post-graduate Training Effect
- H2.1: The proportion of courses significantly affects the theory and practice
- H2.2: Educational Adaptation Level Significantly Influences Theoretical Practice
- H2.3: Industry Mentor Motivation Significantly Influences Theoretical Practice

Teaching Evaluation.

Fair and accurate teaching evaluation can provide reasonable feedback for post-graduates, help them improve learning methods and improve learning effect, at the

same time, good guiding relationship can promote effective communication between teachers and students, improve the accuracy and impartiality of teaching evaluation, teachers' professional level will also directly affect the teaching quality and students' learning experience, and thus affect teaching evaluation. Therefore, the following assumptions are proposed:

H3: Teaching evaluation significantly affects the effect of postgraduate training

H3.1: The relationship of guidance has significant influence on teaching evaluation

H3.2: Dislocation Cultivation Significantly Influences Teaching Evaluation

H3.3: Teachers' Professional Degree Significantly Influences Teaching Evaluation

International Cultivation.

International education not only provides graduate students with access to cutting-edge knowledge, but also enhances their cross-cultural adaptability and global vision. However, the international social environment and students' personal economic level directly affect the degree of postgraduate internationalization training, and whether the management of the college is reasonable, whether it provides appropriate visiting colleges and clear training programs will also affect postgraduate internationalization training. Therefore, the following assumptions are proposed:

H4: International cultivation significantly affects the effect of postgraduate cultivation

H4.1: Social environment significantly affects international cultivation

H4.2: Economic Level Significantly Influences International Cultivation

H4.3: College Management Significantly Impacts International Training

5.2 Data Collection

The measurement scale is prepared according to the research model obtained from the grounded theory. The questionnaire was measured by Likert Five-Level Scale, designed and published by Questionnaire Star Platform. Data collection lasted for two weeks, 324 questionnaires were collected (online and offline), 311 valid questionnaires were finally collected after invalid questionnaires were eliminated, and the effective rate was 95.98%. It shows in Table 4 for specific demographic data.

Table 4. Demographic Data

Category		Number	Proportion
Gender	Male	109	35.1%
	Female	202	64.9%
	Yi	70	22.5%
Grade	Research II	153	49.5%
	Yan San	50	16.2%
	Doctor	16	5.4%
	Graduated	22	6.4%
	Not yet	47	15.3%
Working hours	1-3 Months	53	17.1%
	4-6 Months	106	34.3%

School level	7-12 Months	58	18.9%
	More than one year	47	14.4%
	985	62	20.2%
	211	60	19.3%
	Double first-class	94	30.3%
	Other	95	30.2%
Rank of New Discipline of School	A	58	18.9%
	B	165	53.2%
	C	88	27.9%

5.3 Validation Analysis

Reliability And Validity Analysis.

In this paper, SPSS26 software is used to test the reliability and validity. All tests are past as shown in Table 5 and Table 6 for details.

Table 5. Reliability And Validity Test Results

Variable	Alpha	KMO	AVE	CR
XK	0.881	0.839	0.539	0.683
LS	0.895	0.862	0.624	0.887
JX	0.821	0.794	0.676	0.820
GJ	0.876	0.829	0.573	0.713
PY	0.844	0.747	0.761	0.805

Table 6. Differentiated Validity Test Results

	XK	LS	JX	GJ	PY
XK	0.734				
LS	0.611	0.791			
JX	0.585	0.538	0.822		
GJ	0.612	0.703	0.616	0.757	
PY	0.463	0.348	0.254	0.346	0.872

Hypothesis Testing.

In this paper, AMOS 27 software is used to test the theoretical hypothesis of the research model. The results show that subject fusion, theoretical practice curriculum and international training all have significant influence on postgraduate training effect, and teaching evaluation has no significant influence on postgraduate training effect. In addition, each fitting index of the model conforms to the recommended value, showing that the model has good fitting degree in figure2 and table 7.

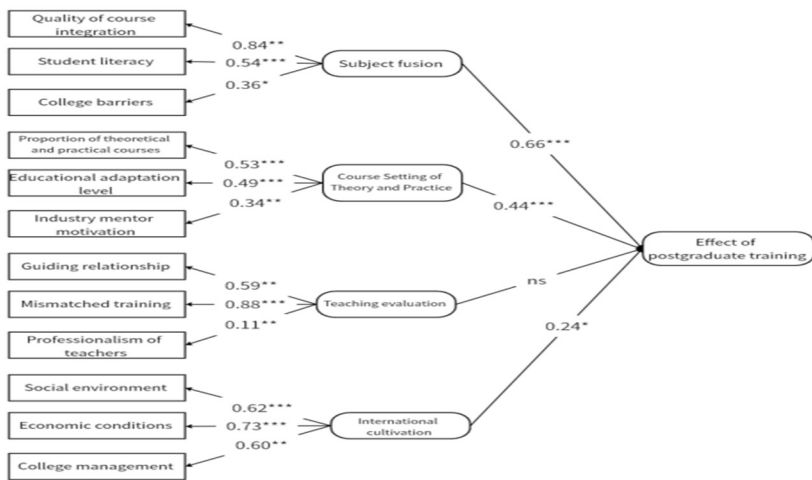


Fig. 2. Path Coefficient And Significance

Table 7. Model Fitting Index

Model fitting index	Recommended value	Actual value
CMIN/DF	<3	1.504
GFI	>0.8	0.872
AGFI	>0.8	0.809
RMSEA	<0.08	0.068

6 Analysis of Research Results

From the results of structural equation model, it can be seen that subject fusion, theoretical practice curriculum and international training will have a significant effect on postgraduate education. Inter-disciplinary cooperation and resource integration play a central role in postgraduate education. Among the influential factors of subject fusion, the quality of course fusion is the most influential, and the high-quality course system can provide systematic knowledge and promote the cultivation of students' interdisciplinary thinking. The influence of college barriers is minimal, which indicates that although administrative or organizational barriers exist among colleges, their influence on the degree of discipline integration is relatively controllable.

The effect of theory and practice on postgraduate education is second, which shows that the organic combination of theory and practice is an important means to improve the overall quality of postgraduates. Under this dimension, the proportion of the number of courses is the largest, which indicates that the balance of the number of theoretical courses and practical courses directly affects the degree of theoretical practice education. The second is the level of educational adaptation. The influence of

tutor motivation in the industry is small, which indicates that tutor motivation in the industry affects students' practical ability, but it is not the leading factor.

International cultivation can improve postgraduates' professional competence to the extent. But within this dimension, economic conditions stand as the most influential factor, which suggests that students' personal economic status directly determines their motivation for overseas study. This is followed by the social environment, demonstrating that the global social context and national policies also affect universities' international training quality.

The effect of teaching evaluation on postgraduate training is not significant. This may be attributed to the fact that although supervisor-student relationship and misplaced training orientation can reflect part of the quality of teaching evaluation, the evaluation results of these dimensions fail to translate into tangible outcomes of postgraduate training through effective feedback mechanisms and clear optimization paths, resulting in an insignificant direct impact of teaching evaluation on the overall effectiveness of postgraduate cultivation.

7 Conclusion

This paper investigates the influencing factors, challenges, and reform paths of graduate education in Humanities and Social Sciences. Firstly, by employing the grounded theory's hierarchical coding, four core categories—interdisciplinary integration, theory and practice, teaching evaluation, and international cultivation—were distilled from semi-structured interview data. Subsequently, the structural equation model was utilized to validate the impact pathways of these core categories on graduate student training outcomes. The results indicate that interdisciplinary integration, theory and practice course settings, and international cultivation significantly impact graduate student training outcomes, while the influence of teaching evaluation was not significantly demonstrated. This study not only provides a new theoretical framework and analytical perspective for graduate education, but also offers specific reform recommendations, offering practical guidance for universities to optimize their curriculum systems, strengthen interdisciplinary integration, and enhance the level of educational internationalization.

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References:

1. Fan Mingxian, Xiao Xue. Interdisciplinary and Collaborative Integration: Reform of Graduate Student Training Model under the Background of New Liberal Arts. *China Higher Education*, 2022, (24): 53-55.

2. Ma Mei, Liang Wei. The Disciplinary Position and Interdisciplinary Status of Journalism and Communication under the Perspective of Interdisciplinary. *Education and Media Research*, 2024, (01): 57-64.
3. Xiong Yin. Teaching Practice and Exploration of "Data Ability" Training for Journalism and Communication Graduate Students. *Media Forum*, 2022, 5(13): 75-77.
4. Wang Xinqing, Pan Xing, Wang Yi, et al. Digital Empowerment of the Graduate Student Training "Chain" in Local Universities: A Case Study of China Jiliang University. *Degree and Graduate Education*, 2024, (12): 15-21.
5. Quan Keke. A Study on the Graduate Education Curriculum System of Communication Graduate Students in Chinese Science and Engineering Universities under the Intelligent Media Age. [D]. Chengdu University of Technology, 2021.
6. Zhu Xiuling. A Study on the Collaborative Training Model for Master's Degree in Journalism and Communication. *Youth Journalist*, 2022, (16): 111-114.
7. Meng F, Zhao Y, Li B. A Study on the New Liberal Arts Graduate Training Model Based on Big Data Thinking Ability. *Information Science*, 2023, 41(11): 36-41+140.
8. He Genmin. Compound Training: A Feasible Path for Media Convergence in Communication Graduate Education. *Journal of Shenyang Institute of Engineering (Social Science Edition)*, 2024, 20(02): 110-114.
9. Jia Yuping. A Study on the Management Mode of Graduate Training Process: A Case Study of the School of Culture and Media at Xinjiang University of Finance and Economics. *National General Language Teaching and Research*, 2023, (05): 25-26+44.
10. Zhang Kun. The Construction of Journalism and Communication Discipline Should Return to the Essence of Education: Reflections on the Five National First-Level Discipline Assessments. *Publishing Horizon*, 2021, (17): 28-32.
11. Fan Mingxian, Tan Huimei. Exploring the Interdisciplinary Training Model for Master's Degree in Journalism and Communication under the Background of New Liberal Arts. *China Publishing*, 2022, (16): 24-27.
12. Ren Mengshan. Journalism and Communication Education in the Era of Media Technology Change: Starting from the Comprehensive Reform of Graduate Education at Communication University of China. *Youth Journalist*, 2020, (28): 58-60.
13. Wang Fangru, Du Jingyi, Feng Ling, et al. An Initial Exploration of the International Training Model of Graduate Students under the Background of New Engineering: A Case Study of the School of Materials Science and Engineering. *Education and Teaching Forum*, 2025, (04): 175-178.
14. Xiong Ting, Zhang Wen, Li Ke. A Study on the International Training Model of Graduate Students under the Background of Building a Strong Transportation Country. *Education and Teaching Forum*, 2025, (02): 113-116.
15. Li Jianxin, Yao Wei. The Current Situation, Problems, and Strategies of International Communication Talent Training in the All-Media Era. *International Communication*, 2021, (07): 35-38.

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