

# Building Professional Capacity of Graduate School and Its Students

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**Abstract:** In the modern society, postgraduate education plays an important role in cultivating professional talents and promoting scientific research. However, in the study plan of the graduate school, cultivating students' professional ability becomes an urgent problem to be solved. This article aims to explore how to strengthen the learning plan of graduate schools to cultivate students' professional abilities. Firstly, we will analyze the current situation and existing problems in graduate education. Then, taking Yichun University as an example, we will survey 200 graduate students to investigate their situation in current preparation and readiness, research publication and awareness, quality of post performance and practices, independent study, research content practices, master in the area of specialization. Based on the survey results, methods and strategies for improving the learning plan will be proposed, including three levels: graduate school, mentors, and individual students, in order to provide valuable suggestions for the graduate school.

**Keywords:** Professional Capacity, Graduate School, Professional Abilities.

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## 1. Introduction

With the increasing demand for higher education, graduate schools play a crucial role in preparing students for their careers and providing them with the skills and knowledge necessary to succeed in their respective fields<sup>[1]</sup>. However, the effectiveness of graduate school learning programs in building students' professional abilities has become a noteworthy area.

Graduate schools play a crucial role in shaping the personal future of pursuing advanced degrees. Here, students can delve deeper into their chosen field of study and acquire the knowledge and skills necessary to stand out in their careers<sup>[2]</sup>. However, people are increasingly concerned about the professional abilities of graduate students and their preparedness for future challenges. This concern stems from the constantly changing job market and the increasing demand for individuals in their respective fields<sup>[3]</sup>. Therefore, it is very urgent to cultivate the professional abilities of graduate students.

The urgency of cultivating graduate students' professional abilities stems from two aspects: national development and personal development. With the accelerated development of economic globalization and technological informatization, new technologies, theories, and concepts are constantly emerging<sup>[4]</sup>. Specialization has become an important driving force for social progress and economic development. Graduate students are an important component of high-level talents in the country and an important source of specialization<sup>[5]</sup>. Therefore, the professional abilities of graduate students are crucial. Only by continuously cultivating and improving their professional abilities can they meet the country's demand for high-level talents and provide strong support for national construction. In addition, professional abilities are also crucial for the personal development of graduate students. The graduate stage is a critical period for a person to delve deeply into their professional field. Only by continuously improving their

professional and research abilities through the process of discovering and solving problems can graduate students achieve better results in academic research, innovation and entrepreneurship, and other aspects. Graduate students also need strong professional abilities to cope with various opportunities and challenges in their future career<sup>[6]</sup>.

Cultivating the professionalism of graduate students is a long-term and complex task, which requires the support and joint efforts of society, universities, consultants and graduate students. The purpose of this study is to assess and determine the professional competence of graduate students. It is also the intent of the investigator to develop a study plan to enhance and better build the capacity of the graduate students.

## 2. Methodology

### 2.1. Research Design

This study will employ a non-experimental quantitative design which will naturally measure the occurrence of variables. Specifically, the descriptive research design and cross-sectional assessments will be used to describe the significant relationship among the variables under study. The professional building capacity employ by the school to the graduate school students in terms of curriculum preparation, research publication, and quality reviews of practices will be evaluated. The assessment of the respondents of their professional capacity as graduate school students in terms of independent study, research practices, and expertise in the area of study will also be determined.

### 2.2. Sampling Method

The respondents will be the graduate students from Yichun University, they are 200 graduate school students and their totality will be the sample.

### 2.3. Research Instrument

The researcher will use a self-made questionnaire to assess the variables stated in the statement of the problems. The professional building capacity employed by the school to the

graduate school students in terms of curriculum preparation, research publication and the quality reviews of practices will be determined. The assessment of the respondents of their professional capacity as graduate school students in terms of independent study, research practices and curriculum preparation will also be assessed.

Significant difference on the professional building capacity employed by the school to the assessment of the respondents of their professional capacity as graduate students as well as the relationships will also be under investigation.

The analysis of the hypotheses will be carried out using the 0.05 level of significance. The null hypothesis will be accepted when the computed significance value is greater than the set value at 0.05. Otherwise, it will be rejected.

To satisfy the validity of the self-made questionnaire, the panel of experts will evaluate the questionnaire. The reliability will be tested using Cronbach's alpha coefficient that measures the internal consistency, or reliability, of a set of survey items. This will be used statistically to help determine whether a collection of items consistently measures the same characteristic. Cronbach's alpha quantifies the level of agreement on a standardized 0 to 1 scale.

## 2.4. Data Gathering Procedure

Prior to the conduction of the study, the ethical clearance is obtained from the ethical Board.

Firstly, the researcher selects participants who fulfil the criteria for the study, they are welcomed, and a rapport is established within the participant. Secondly, a consent form is taken from the participants keeping to all the ethical guidelines and code of conduct. Lastly, the participant is also given a brief detailing about the rationale of the study and the procedures and brief introduction about the questionnaires are introduced.

**Table B.** Reliability Measurement for Professional Building Capacity (Cronbach's Alpha)

Construct	Cronbach's Alpha	No. of Item/s Deleted	No. of Items
Curriculum Preparation and Readiness	0.88	0	8
Research Publication and Awareness	0.91	0	8
Quality of Post Performance and Practices	0.91	0	8

**Table C.** Reliability Measurement for Professional Capacity (Cronbach's Alpha)

Construct	Cronbach's Alpha	No. of Item/s Deleted	No. of Items
Independent Study	0.92	0	8
Research Content Practices	0.91	0	8
Mastery in the Area of Specialization	0.92	0	8

Table B and C present the reliability measurement, particularly the Cronbach's alpha of the scales, professional building capacity and professional capacity. Cronbach's alpha, abbreviated as CA, is a statistic used to assess construct reliability or internal consistency<sup>[7]</sup>. For Cronbach's alpha to be able to determine whether or not a measurement is reliable, the value of the measurement being analyzed must be equal to or greater than 0.70<sup>[8,9]</sup>. The analysis of the data showed

## 2.5. Statistical Treatment

In analyzing the data to be gathered, the following statistical treatments will be used in the study at 0.05 level of significance using Statistical Package for Social Sciences or SPSS software:

### Frequency Count and Percentage

This is used by the researcher in its analysis of the profile of the respondents.

### Weighted Mean

This is used in giving different weights to the individual values as indicated in the demographics of the participants as well as to the assessment of the professional capacity of the graduate students in relation to the sub variables.

### T-test /ANOVA

The T-test and/or Analysis of Variance or F-test is used by the researcher to determine if there are significant differences in the member respondents as assessed by themselves when their profiles are taken as factors.

### Table A. The results are interpreted as follows:

Weight	Scale/Range	Description/Interpretation
4	3.51-4.00	Highly Extent
3	2.51-3.50	Moderately Extent
2	1.51-2.50	Less Extent
1	1.00-1.50	None of all

### Pearson's r Correlation Analysis

The researcher used Pearson's r correlation analysis to determine the significant relationship among the variables.

## 2.6. Decision Criteria

The analysis of the hypotheses will be carried out using the 0.05 level of significance. The null hypothesis will be accepted when the computed significance value is greater than the set value at 0.05. Otherwise, it will be rejected.

that all of the domains for professional building capacity, namely curriculum preparation and readiness (CA = 0.88), and quality of post performance and practices (CA = 0.91), as well as professional capacity based on independent study (CA = 0.92), research content practices (CA = 0.91), and mastery in the area of specialization (CA = 0.92) satisfied the criterion for reliability and were considered to be good items with good internal consistency.

**Table D. Normality Test**

	N	Shapiro-Wilk	
		W	p
Curriculum Preparation and Readiness	200	0.99	0.081
Research Publication and Awareness	200	0.96	0.056
Quality of Post Performance and Practices	200	0.96	0.053
Independent Study	200	0.97	0.078
Research Content Practices	200	0.97	0.067
Mastery in the Area of Specialization	200	0.97	0.066

**Table E. Homogeneity of Variances Test (Levene's)**

	F	df	df2	p
Curriculum Preparation and Readiness	0	1	198	0.998
Research Publication and Awareness	2.72	1	198	0.101
Quality of Post Performance and Practices	0.6	1	198	0.438
Independent Study	0	1	198	0.982
Research Content Practices	1.16	1	198	0.282
Mastery in the Area of Specialization	1.11	1	198	0.294

Note. A low p-value suggests a violation of the assumption of equal variances

Since the generated p-values from the Shapiro-Wilk test are greater than 0.05, this indicates that the scores are regularly distributed. Similarly, the p-values of the Levenes' test are also greater than 0.05, which implies that the data achieved homogeneity of variance. Hence, to determine if there are significant differences and relationships among the variables, parametric tests such as the independent sample t-test, one-way analysis of variance, and Pearson correlation will be utilized.

## 2.7. Ethical Considerations

The investigator fully considered the following ethics: conflict of interest, privacy and confidentiality, informed consent process, recruitment/assent, risks and benefits, incentives or compensation, community considerations.

## 3. Results and Analysis

### 3.1. Profile of the Respondents in Terms of Sex and Age.

**Table 1. Frequency and Percentage of Demographic Profile**

Sex	Counts	% of Total
Female	143	72%
Male	57	28%
Age		
21-23 years old	49	25%
24-26 years old	112	56%
27-29 years old	28	14%
30 years old and older	11	6%

Table 1 presents the descriptive information regarding the frequencies and percentages of the respondents' demographic profile in terms of sex and age. Based on the tabulated data, 72% of them were female, while 28% were male, implying that the majority of the graduate students from Yichun University are female. The 24-26 age group is 67% of the total population, the largest age group. The age group of 21-23 accounts for 34.5% of the total, with a relatively large proportion. The number of people over 30 years old accounted for 5.5% of the total, and the number was small. It shows that the graduate students of Yichun University are getting younger in age.

### 3.2. Assessment of the Respondents on the Professional Building Capacity Employ by the School to the Graduate School Students in Terms of:

#### 3.2.1. Curriculum Preparation and Readiness

**Table 2. Assessment of the Respondents on the Professional Building Capacity Employed by the School for Graduate School Students in terms of Curriculum Preparation and Readiness**

Indicators	Mean	SD	Verbal Interpretation	Rank
1. I attend training program for curriculum capacity building.	2.45	0.73	Low Extent	7
2. I apply in my instruction emerging trends and practices.	2.65	0.74	High Extent	5
3. The school allows us to create positive improvement in our teaching.	3.09	0.68	High Extent	1
4. The school send us to international training for benchmarking.	2.17	0.81	High Extent	8
5. I always make learning real and relevant.	2.98	0.62	High Extent	2
6. I employ proper assessment in the class.	2.73	0.71	High Extent	4
7. I join my department for the evaluation of the curriculum.	2.48	0.83	Low Extent	6
8. I am confident that I am an effective educator.	2.89	0.69	High Extent	3
<b>COMPOSITE MEAN</b>	<b>2.68</b>	<b>0.53</b>	<b>High Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50; Often (High Extent); 3.51-4.00: Always (Very High Extent)

Table 2 presents the descriptive information regarding the respondents' assessment of the professional building capacity employed by the school for graduate school students in terms of curriculum preparation and readiness. It received a composite mean of 2.68 and a standard deviation of 0.53, indicating that the respondents have a high assessment and

frequently agree that school allows them to make positive improvements in their teaching, that they always make learning real and relevant, and that they are confident that they are an effective educator.

### 3.2.2. Research Publication and Awareness

**Table 3.** Assessment of the Respondents on the Professional Building Capacity Employed by the School for Graduate School Students in terms of Research Publication and Awareness

Indicators	Mean	SD	Verbal Interpretation	Rank
1.I join in presenting my research internationally.	2.06	0.86	Low Extent	7
2.I got incentives for a research publication.	2.02	0.89	Low Extent	8
3.I am used to publicly sharing my research output.	2.46	0.82	Low Extent	5
4.I am confident communicating my research.	2.62	0.81	High Extent	3
5.I present my paper in the most professional way.	2.69	0.77	High Extent	2
6.I provide solution to a difficult gap in education.	2.21	0.82	Low Extent	6
7.My data gathering is comprehensive.	2.61	0.71	High Extent	4
8.My research findings can be verifiable.	2.87	0.74	High Extent	1
<b>COMPOSITE MEAN</b>	<b>2.44</b>	<b>0.63</b>	<b>Low Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50: Often (High Extent); 3.51-4.00: Always (Very High Extent)

Table 3 Shows how respondents rated the assessment of the professional building capacity employed by the school for graduate school students in terms of research publication and awareness. The variable's composite mean was 2.44, with a standard deviation of 0.63. This indicates that respondents have a low evaluation and believe that they are rarely

rewarded for a research publication, participate in presenting their research internationally, and provide a solution to a difficult educational gap.

### 3.2.3. Quality of Post-Performance and Practices

**Table 4.** Assessment of the Respondents on the Professional Building Capacity Employed by the School for Graduate School Students in terms of Quality of Post-Performance and Practices

Indicators	Mean	SD	Verbal Interpretation	Rank
1.My research is relevant and comprehensive enough.	2.62	0.73	High Extent	8
2.I am accurate and authentic in my research task.	2.99	0.67	High Extent	4
3.I accept feedback to improve.	3.13	0.67	High Extent	2
4.Both positive and negative aspects of the reviews on my research are all welcome.	3.12	0.65	High Extent	3
5.I always give honest information.	3.22	0.64	High Extent	1
6.I don't give reviews that are too short.	2.77	0.66	High Extent	7
7.I give as many details as possible in my reviews and practices.	2.91	0.68	High Extent	6
8.I update myself with the use of proper spelling, grammar and citations.	2.97	0.67	High Extent	5
<b>COMPOSITE MEAN</b>	<b>2.96</b>	<b>0.52</b>	<b>High Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50: Often (High Extent); 3.51-4.00: Always (Very High Extent)

Table 4 Shows how respondents rated the school's professional development capacity for graduate students in terms of quality of post-performance and practices. Based on the tabulated data, it generated a composite mean of 2.96 and a standard deviation of 0.52, indicating that respondents have a high rating on this domain and specifically agree that they often always give honest information, accept feedback to improve, and welcome both positive and negative aspects of

research reviews.

## 3.3. Assessment of the Respondents of Their Professional Capacity as Graduate School Students in Terms of:

### 3.3.1. Independent Study

**Table 5.** Assessment of the Respondents of their Professional Capacity as Graduate School Students in terms of Independent Study

Indicators	Mean	SD	Verbal Interpretation	Rank
1.I always have my timescale in my studies.	2.88	0.7	High Extent	3.5
2.I am organized and proficient in the use of research applications.	2.87	0.68	High Extent	6
3.I am always updated to the trends and issues needed in research.	2.88	0.69	High Extent	3.5
4.I budget my time for library use and academic /scholarly management.	2.73	0.77	High Extent	7
5.I focus on relevant and sound research practices.	2.88	0.66	High Extent	3.5
6.I ask and always consult my adviser in researches.	2.89	0.69	High Extent	2
7.I am very professional when giving my remarks and queries.	2.68	0.69	High Extent	8
8.Feedback is my source of improvement.	3.05	0.65	High Extent	1
<b>COMPOSITE MEAN</b>	<b>2.86</b>	<b>0.55</b>	<b>High Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50; Often (High Extent); 3.51-4.00: Always (Very High Extent)

Table 5 summarizes respondents' evaluations of their professional capacity as graduate students in terms of independent study, yielding a composite mean of 2.86 and a standard deviation of 0.55. This implies that graduating students have a high rating and frequently agree that feedback

is a source of improvement, that they ask and always consult their adviser in researches, and that they focus on relevant and sound research practices.

### 3.3.2. Research Content Practices

**Table 6.** Assessment of the Respondents of their Professional Capacity as Graduate School Students in terms of Research Content Practices

Indicators	Mean	SD	Verbal Interpretation	Rank
1.I foster integrity in my research.	3.14	0.68	High Extent	5.5
2.I engage to more collaboration and discussion on issues and relevant research topics.	2.85	0.67	High Extent	8
3.I submit myself to high standards of academic pursuit and scientific credibility.	3.15	0.65	High Extent	4
4.I allow myself to a rigorous confirmation of findings.	3.14	0.62	High Extent	5.5
5.I am open to both negative and positive feedback.	3.2	0.64	High Extent	3
6.I give credit to colleagues who helped.	3.44	0.67	High Extent	1
7.I am committed to research endeavors.	3.14	0.7	High Extent	5.5
8.I am always open to suggestions and criticism.	3.26	0.67	High Extent	2
<b>COMPOSITE MEAN</b>	<b>3.16</b>	<b>0.52</b>	<b>High Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50; Often (High Extent); 3.51-4.00: Always (Very High Extent)

The evaluations of the respondents' professional capacity as graduate students in terms of research content practices are summarized in Table 6, which results in a composite mean of 3.16 and a standard deviation of 0.52. This indicates that graduating students have a high rating and that the majority

of them agree that they give credit to colleagues who helped, that they are open to suggestions and criticism, and that they are open to both positive and negative feedback.

### 3.3.3. Mastery in the Area of Specialization

**Table 7.** Assessment of the Respondents of their Professional Capacity as Graduate School Students in terms of Mastery in the Area of Specialization

Indicators	Mean	SD	Verbal Interpretation	Rank
1.I share to others whatever good practice I do in the classroom.	3.05	0.73	High Extent	5.5
2.I practice what I found best.	3.16	0.65	High Extent	2
3.I am fair and at the same time generous in helping	3.12	0.64	High Extent	4
4.I am open to disagreement but not to the point of being disagreeable.	3.05	0.64	High Extent	5.5
5.I am responsible in data handling.	2.94	0.7	High Extent	8
6.I respect equal authorship to all who collaborated.	3.32	0.66	High Extent	1
7.I am always aware of possible biases in research.	2.99	0.71	High Extent	7
8.I am actively committed to openness in research.	3.15	0.69	High Extent	3
<b>COMPOSITE MEAN</b>	<b>3.09</b>	<b>0.54</b>	<b>High Extent</b>	

Legend: 1.00-1.50: Not at All (Very Low Extent); 1.51-2.50: Seldom (Low Extent); 2.51-3.50; Often (High Extent); 3.51-4.00: Always (Very High Extent)

Table 7 presents the respondents' professional capacity as graduate students in terms of mastery in the area of specialization, yielding a composite mean of 3.09 and a standard deviation of 0.54. This indicates that graduating students have a high rating and that the majority of them agree that they respect equal authority to all who collaborated, that they practice what they discovered to be the best, and that they are actively committed to openness in research.

### 3.4. Significant Differences on the Professional Building Capacity Employed by the School to the Assessment of the Respondents of Their Professional Capacity as Graduate Students When They Are Grouped Based on Their Demographic Factors

#### 3.4.1. Sex

**Table 8.** Group Descriptives

	Group	N	Mean	Median	SD	SE
Curriculum Preparation and Readiness	Female	143	2.69	2.63	0.53	0.04
	Male	57	2.64	2.63	0.55	0.07
Research Publication and Awareness	Female	143	2.49	2.5	0.66	0.06
	Male	57	2.33	2.25	0.54	0.07
Quality of Post Performance and Practices	Female	143	3	3	0.51	0.04
	Male	57	2.88	3	0.55	0.07
Independent Study	Female	143	2.88	2.88	0.56	0.05
	Male	57	2.78	2.88	0.52	0.07
Research Content Practices	Female	143	3.19	3.13	0.49	0.04
	Male	57	3.08	3	0.57	0.08
Mastery in the Area of Specialization	Female	143	3.12	3	0.56	0.05
	Male	57	3.02	3	0.52	0.07

Table 8 shows the ratings of respondents of different genders on the options, with a total of 200 participants, including 143 female and 57 male. The mean female rating for Curriculum Preparation and Readiness is 2.69; 2.64 for male. The ratings for Research Publication and Awareness are 2.49 for female and 2.33 for male, respectively. The ratings for Quality of Post Performance and Practices are 3.00 and 2.88 for female and male, respectively, and 2.88 and 2.78 for

Independent Study, respectively. The mean scores for Research Content Practices are 3.19 and 3.08, respectively. The mean scores for Mastery in the Area of Specialization are 3.12 and 3.01, respectively. To further investigate whether gender has a significant impact on evaluation, a significance analysis was conducted on the survey results data, as shown in Table 9.

**Table 9.** Difference between the Assessment of Professional Building capacity Employed by the School and Assessment of their Professional Capacity as Graduate Students

	t	df	p	Interpretation	Decision
Curriculum Preparation and Readiness	0.65	198	0.519	Not Significant	Accept H0
Research Publication and Awareness	1.62	198	0.107	Not Significant	Accept H0
Quality of Post Performance and Practices	1.42	198	0.158	Not Significant	Accept H0
Independent Study	1.2	198	0.231	Not Significant	Accept H0
Research Content Practices	1.4	198	0.163	Not Significant	Accept H0
Mastery in the Area of Specialization	1.19	198	0.236	Not Significant	Accept H0

Table 9 presents how the assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students differ when they are classified based on their assigned. Since all the generated p-values for the assessment of professional building capacity employed by the school in terms of curriculum preparation and readiness ( $t = 0.65$ ;  $df = 198$ ;  $p = 0.519$ ), research publication and awareness ( $t = 1.62$ ;  $df = 198$ ;  $p = 0.107$ ), and quality of post performance and practices ( $t = 1.42$ ;  $df = 198$ ;  $p = 0.158$ ) as well as the the respondents' professional capacity as graduate students based on independent study ( $t =$

$1.20$ ;  $df = 198$ ;  $p = 0.231$ ), research content practices ( $t = 1.40$ ;  $df = 198$ ;  $p = 0.163$ ), and mastery in the area of specialization ( $t = 1.19$ ;  $df = 198$ ;  $p = 0.236$ ) are higher than the 0.05 level of significance, this means that the researcher will not reject the null hypothesis. Hence, it can be concluded that regardless of their assigned sex, their assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students are the same.

#### 3.4.2. Age

**Table 10.** Group Descriptives

	Age	N	Mean	SD	SE
Curriculum Preparation and Readiness	21-23	49	2.71	0.55	0.08
	24-26	112	2.68	0.52	0.05
	27-29	28	2.56	0.48	0.09
	30-older	11	2.84	0.69	0.21
Research Publication and Awareness	21-23	49	2.48	0.59	0.08
	24-26	112	2.41	0.61	0.06
	27-29	28	2.36	0.74	0.14
	30-older	11	2.82	0.77	0.23
Quality of Post Performance and Practices	21-23	49	2.88	0.62	0.09
	24-26	112	3	0.46	0.04
	27-29	28	2.94	0.53	0.1
	30-older	11	3.07	0.64	0.19
Independent Study	21-23	49	2.86	0.62	0.09
	24-26	112	2.85	0.49	0.05
	27-29	28	2.79	0.62	0.12
	30-older	11	2.99	0.7	0.21
Research Content Practices	21-23	49	3.11	0.6	0.09
	24-26	112	3.18	0.46	0.04
	27-29	28	3.15	0.5	0.09
	30-older	11	3.23	0.7	0.21
Mastery in the Area of Specialization	21-23	49	3.03	0.62	0.09
	24-26	112	3.11	0.5	0.05
	27-29	28	3.08	0.52	0.1
	30-older	11	3.2	0.74	0.22

Table 10 shows the results of a total of 200 participants from four age groups, including 49 participants aged 20-23, 112 participants aged 24-26, 28 participants aged 27-29, and 11 participants aged 30 and above. The survey results show that people aged 30 and above have a higher rating for

Mean in all 6 survey items among the 4 groups. To further investigate whether there is a difference in evaluation due to age, a one-way analysis of variance was conducted on the survey results data, as shown in Table 11.

**Table 11.** Difference between the Assessment of Professional Building Capacity Employed by the School and Assessment of their Professional Capacity as Graduate Students

	f	df1	df2	p	Interpretation	Decision
Curriculum Preparation and Readiness	0.82	3	196	0.483	Not Significant	Accept H0
Research Publication and Awareness	1.62	3	196	0.186	Not Significant	Accept H0
Quality of Post Performance and Practices	0.71	3	196	0.55	Not Significant	Accept H0
Independent Study	0.32	3	196	0.809	Not Significant	Accept H0
Research Content Practices	0.24	3	196	0.866	Not Significant	Accept H0
Mastery in the Area of Specialization	0.43	3	196	0.732	Not Significant	Accept H0

The one-way analysis of variance was employed to determine how the assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students differ when they are classified based on their age group. Based on the tabulated data, it generated p-values of greater than the 0.05 level of significance for assessment of professional building capacity employed by the school that will be measured based on curriculum preparation and readiness ( $F = 0.82$ ;  $df = 3, 196$ ;  $p = 0.483$ ), research publication and awareness ( $F = 1.62$ ;  $df = 3, 196$ ;  $p = 0.186$ ), and quality of post performance and practices ( $F = 0.71$ ;  $df = 3, 196$ ;  $p = 0.550$ ) as well as the respondents' professional capacity as graduate students based on independent study ( $F = 0.32$ ;  $df = 3, 196$ ;  $p = 0.809$ ),

research content practices ( $F = 0.24$ ;  $df = 3, 196$ ;  $p = 0.866$ ), and mastery in the area of specialization ( $F = 0.43$ ;  $df = 3, 196$ ;  $p = 0.732$ ), which implies that the null hypothesis will not be rejected. Hence, the assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students do not vary across the age.

### 3.5. Significant Relationship Between the Professional Building Capacity Employed by the School to the Assessment of the Respondents of Their Professional Capacity as Graduate School Students

**Table 12.** Correlation Matrix

		Independent Study	Research Content Practices	Mastery in the Area of Specialization
Curriculum Preparation and Readiness	Pearson's r	0.74	0.6	0.65
	p-value	< .001	< .001	< .001
Research Publication and Awareness	Pearson's r	0.71	0.5	0.54
	p-value	< .001	< .001	< .001
Quality of Post Performance and Practices	Pearson's r	0.78	0.75	0.73
	p-value	< .001	< .001	< .001

*Legend: .00-0.19: Very Weak; 0.20-0.39: Weak; 0.40-0.59: Moderate; 0.60-0.79: Strong; 0.80-1.00: Very Strong*

The correlation matrix summarizes the measurement of the relationship between the assessments of professional building capacity employed by the school and the respondents' professional capacity. The analysis of Pearson correlation revealed p-values of <.001, which are lower than the 0.05 level of significance for all the domains, suggesting that the null hypothesis will be rejected and that there is a significant relationship between the variables. Specifically, the assessment of professional building capacity employed by the school in terms of curriculum preparation and readiness, research publication and awareness, and quality of post performance and practices are correlated with the assessment of the respondents' professional capacity based on

independent study, research content practices, and mastery in the area of specialization, with correlation coefficients that range from 0.50 to 0.78 (moderate to strong relationship). The correlation coefficients are positive, indicating that as the level of assessment of professional building capacity employed by the school increases, so does the assessment of the respondents' professional capacity, and vice versa.

### 3.6. Issues And Concerns That Affect Their Professional Capacity as Graduate School Students

**Table 13.** Coding and Frequency Responses

Theme	How many participants mentioned the theme	How many times it was mentioned across the interview
Theme 1: Academic Literacy Sub-theme 1: Academic Integrity	2	5
Theme 2: Research Ability Sub-theme 1: Lack of research competencies	3	8
Theme 3: Academic Pressure Sub-theme 1: Time management problem Sub-theme 2: Mental Health Concern	3 3	5 6

For the 5 teachers and 5 graduate students interviewed, three themes have been discussed multiple times, namely Academic Literacy, Research Ability, and Academic Pressure. The most frequent one is Lack of research competencies, mentioned 8 times, indicating that teachers and students generally value research abilities. Graduate education not only requires the cultivation of scientific research knowledge and practical abilities, but also the improvement of professional capacity such as innovative thinking in scientific research, promoting unity and cooperation. The issue of academic pressure on students is also frequently mentioned, and finding the source of pressure and alleviating it is very important.

## 4. Discussion

### 4.1. Summary of Findings

The following are found based on the research problems and parameters of the study:

1. In terms of gender, the majority of respondents were female, accounting for 72% of the total number of

respondents. In terms of age, the 24-26 age group accounts for 67% of the total population, making it the largest age group.

2. In terms of Assessment of the respondents on the professional building capacity employ by the school to the graduate school students —Curriculum Preparation and Readiness, Research Publication and Awareness, Quality of Post-Performance and Practices—reveals intriguing insights, with respective means of 2.68, 2.44 and 2.96, all indicative of effectiveness.

3. In terms of assessment of the respondents of their professional capacity as graduate school students —Independent Study, Research Content Practices, Mastery in the Area of Specialization—reveals intriguing insights, with respective means of 2.86, 3.16 and 3.09, all indicative of effectiveness.

4. When grouping the school's specialty-building capacity with demographic factors, it can be concluded that their assessment of the specialty-building capacity employed by the school and the assessment of the respondents' professional competence as graduate students were the same, regardless of

their assigned gender and age.

5. The correlation matrix summarizes the measurement of the relationship between the assessments of professional building capacity employed by the school and the respondents' professional capacity. The analysis of Pearson correlation revealed p-values of  $<.001$ , which are lower than the 0.05 level of significance for all the domains, suggesting that the null hypothesis will be rejected and that there is a significant relationship between the variables.

6. For the 5 teachers and 5 graduate students interviewed, three themes have been discussed multiple times, namely Academic Literacy, Research Ability, and Academic Pressure. The most frequent one is Lack of research competencies, mentioned 8 times.

## 4.2. Conclusions

Based on the findings of this study, the following are concluded:

1. This research offers a comprehensive understanding of the intricate interplay between demographic characteristics and graduate school learning program, and their implications on professional capacity of graduate students planning. The demographic analysis elucidates a diverse respondent profile, indicating a rich academic milieu fostering varied perspectives.

2. The assessment of the responses on the professional building capacity to the graduate school students dimension revealed in this study reflects effectiveness, with the average score indicating a positive impact.

3. The assessment of the respondents of their professional capacity as graduate school students dimension revealed in this study reflects effectiveness, with the average score indicating a positive impact.

4. Based on the result, regardless of the respondents' assigned sex, their assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students are the same. The assessments of professional building capacity employed by the school and the respondents' professional capacity as graduate students do not vary across the age.

5. The correlation matrix summarizes the measurement of the relationship between the assessments of professional building capacity employed by the school and the respondents' professional capacity. The correlation coefficients are positive, indicating that as the level of assessment of professional building capacity employed by the school increases, so does the assessment of the respondents' professional capacity, and vice versa. It only implicates that proficiency in research and other creative activities with advance knowledge in the discipline are both serious matters need to be addressed by the school and the graduate school students.

6. The interview results indicate that teachers and students generally value research abilities. Graduate education not only requires the cultivation of scientific research knowledge and practical abilities, but also the improvement of professional capacity such as innovative thinking in scientific research, promoting unity and cooperation. The issue of academic pressure on students is also frequently mentioned, and finding the source of pressure and alleviating it is very important.

## 4.3. Recommendations

Based on the conclusions of the study, the following are recommended:

1. Graduate schools should prioritize the implementation of learning plans that are in line with the strengthening of graduate schools. By integrating relevant content, teaching methods, and practical services, including training content and schedules for graduate students in academic research, project management, academic writing, etc., create an inclusive learning environment that resonates with all graduate students. This helps to establish a more diverse academic environment to enhance their professional abilities. In addition, this approach can better cultivate the professional abilities of graduate students and prepare them for future career endeavors in increasingly diverse workplaces.

2. Provide financial support and resource guarantee for graduate students participating in research projects, encourage them to participate in scientific research practice, and improve their professional and innovative abilities. We can establish research project funding programs, establish scholarship and scholarship systems, encourage graduate students to actively engage in research work, and set up some research awards to stimulate their academic enthusiasm.

3. Strengthen the evaluation and feedback mechanism: Regularly evaluate and provide feedback on the learning situation and professional abilities of students, and adjust learning plans and training programs in a timely manner.

4. Strengthen academic research guidance from adviser, such as providing guidance on research directions, providing discussions and suggestions for graduate students, closely guiding and communicating with graduate students, helping them develop reasonable research plans and goals, and providing relevant guidance and support.

5. Changes in teaching modes: Traditional classroom teaching often only imparts knowledge in a one-way manner, resulting in students being in a passive state of acceptance, making it difficult to fully understand abstract professional theories and their applications. In order to better cultivate graduate students' abilities in knowledge acquisition, academic identification, independent research, and problem-solving, heuristic, seminar based, participatory, and paradigm based teaching methods can be combined to promote positive interaction between teachers and students and achieve a close integration of teaching and learning.

6. Graduate students should also improve themselves through self-improvement, such as cultivating research interests, choosing research directions based on their own interests and goals, actively participating in scientific research activities, and cultivating professional abilities and interests. Actively participate in academic projects and activities, cultivate teamwork and communication skills, and face academic pressure correctly.

## 4.4. Output

### Enhanced Graduate School Learning Program

#### 4.4.1. Rationale

Against the backdrop of rapid economic development and increasing demand for talent in society, graduate education remains the main way to cultivate high-level and top-notch talents. Facing fierce social competition and constantly changing social demands, graduate education not only needs to cultivate scientific research knowledge and practical abilities, but also needs to improve professional abilities such as scientific research innovation thinking, promoting unity and cooperation. Recognizing this issue, it is necessary

to strengthen the learning plan of graduate schools, so that graduate students have the professional abilities required to

meet the educational environment needs of the 21st century. Therefore, solving this problem through comprehensive and targeted professional development measures is beneficial for the development of our graduate education system and the improvement of graduate students' professional abilities.

#### 4.4.2. Main Goal

The proposed program aims to enhance the graduate school learning program students. Faced with fierce social competition and constantly changing social demands, graduate education not only requires the cultivation of scientific research knowledge and practical abilities, but also

the improvement of professional capacity such as scientific research innovative thinking, promoting unity and cooperation. The professional capacity of graduate students is the result of multiple factors working together. In response to the problems faced in cultivating professional capacity for graduate students, schools, advisors, and individual graduate students should work together, actively take corresponding measures, change unfavorable situations, and gradually cultivate and improve their majors. Below are some suggestions on measures to cultivate and improve graduate professional capacity.

Areas of Concern	Objectives	Activities and Time Frame	Persons In Charge	Budget	Success Indicator
Research Ability, and Academic Challenges	To improve the capacity of the students as innovative thinker scientific research, promoting unity and cooperation. The issue of academic pressure on students is also frequently mentioned, and finding the source of pressure and alleviating it is very important.	Days Seminar Workshop on research capacity and Leadership with focus on Academic writing and publication Beginning of the semester	Human Resource Office Graduate School director and students leaders  Human Resource Office	10.000 RMB  10.000 RMB	Increased graduate school students participation in research and publication
Providing a good academic environment	To provide academic resources such as laboratories and libraries exclusively for graduate students, and encourage them to exchange and cooperate with mentors and peers, stimulating academic innovation vitality.	Provision for spaces and designated areas for graduate school students	Graduate school director/dean Graduate school faculty advisers and students	10.000 RMB	Increased teacher engagement in promoting students autonomous utilization of learning strategies
Incentives for a Research Publication	To give incentives to good researches.	Academic writing and publication ; International and Local Forum and Presentation All year round	Graduate school director/dean Graduate school faculty advisers and students	10.000 RMB  10.000 RMB	Increased teacher engagement in promoting students autonomous utilization of learning strategies
Research As Relevant and Comprehensive enough	To design best research agenda addressing the needs of the timeovation vitality.	Academic writing and publication; Benchmarking All year round	Academic writing and publication; Benchmarking All year round	10.000 RMB	Increased teacher engagement in promoting students autonomous utilization of learning strategies

#### 4.4.3. Plan of Implementation

In the process of implementing enhanced graduate school learning program and other activities, the specific tasks and focuses of each stage are as follows:

##### 1. Preparation phase:

Determine the goals and content for all areas of focus: Define the objectives of the graduate school students training and workshop activities and identify training priorities. At the same time, necessary resources including funds, venues, teachers, etc. are organized and fully prepared and implemented.

##### 2. Pre-training preparation stage:

Communicating with students who will participate training: Promote the goals, content and importance of workshops and training. Conduct seminars for tgraduate school students and solicit students' needs for this training and establish effective communication and dessimination.

##### 3. Implementation stage:

Conduct training activities: Carry out various activities

smoothly according to the plan: setting up learning theme activities, inviting expert lectures, and conducting workshops and simulationss.

##### 4. Summary stage:

Evaluate the effectiveness of the activity, collect feedback and listen to participants' suggestions to understand the actual effect of the activity and room for improvement. Summarize the process and analyze the strengths and weaknesses. At last, providing lessons learned for subsequent activities. Based on the evaluation results and summarizing experience and lessons, formulating an application plan for activity results to ensure the results can be effectively applied and promoted in schools.

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## References

- [1] Hartnett, R. T. , & Katz, J. . (2016). The Education of Graduate Students[J].The Journal of Higher Education, 2016.DOI:10.1080/00221546.1977.11776583
- [2] Wang,Y.H. and Chen,L. (2012). Experiential teaching and the cultivation of personal knowledge management abilities for graduate students. Graduate Education Research (02), 39-43.
- [3] Yang,J., Hu,Y.M. and Wang Y.M. (2023). Exploration and Practice of Professional Degree Graduate Training Model. China Higher Education (11), 58-60.
- [4] Xue, Y. Q.(2023).Problems existing in the cultivation of graduate student innovation ability and countermeasures. Modern vocational education.(21),149-152.
- [5] Huang,B.Y.,and Huang,H.J.(2020).Understanding and thinking of the strategic significance of accelerating the development of high-quality graduate education. China Higher Education Research.(04),37-43. doi:10.16298/j.cnki.1004-3667.2020.04.08.
- [6] Wang,D.Z.,and Hu.R.(2007).Analysis of environmental factors of graduate innovation ability cultivation. Academic Degrees & Graduate Education.(06),22-26. doi:10.16750/j.adge.2007.06.006.
- [7] Kock, N. . (2015). How likely is simpson's paradox in path models?. International Journal of e-Collaboration (IJeC), 11(1), 1-7.
- [8] Fornell, C. , & Larcker, D. F. . (1981). Structural equation models with unobservable variables and measurement error: algebra and statistics. Journal of Marketing Research, 18(3), 382-388.
- [9] Nunnally, J. . (1978). Fundamentals of factor analysis