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SATISFACTION ANALYSIS WITH CURRICULUM OF PROFESSIONAL GRADUATE DEGREE PROGRAMS AT LOCAL UNIVERSITIES IN CHINA

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Abstract

This paper focuses on the evaluation of the curriculum of professional graduate degree programs. A questionnaire survey and statistical analysis are conducted on eight majors from aspects such as curriculum design, objectives, content, structure, and course learning. The current problems in the construction of the professional graduate degree curriculum system are analyzed and corresponding countermeasures for improvement are proposed, efficiently perfecting the curriculum system for professional graduate degree programs.

Keywords: *Professional graduate degree programs; Curriculum system; Evaluation*;

Introduction

Graduate education has cultivated a large number of talents for the economic and social development in China. However, due to the rapid growth in the number of graduate students, some issues have emerged in graduate education and teaching, attracting significant attention from the government and widespread concern in society. Courses constitute the fundamental unit of graduate teaching; therefore, enhancing the quality of graduate courses is a crucial measure to ensure the quality of graduate talent development.

The design of graduate courses has evolved and developed within the formation and evolution of the graduate education training model. Different training models in graduate education correspond to variations in course design and teaching methods (Luo 2007). Graduate courses possess characteristics such as depth, research orientation, specialization, refinement, and dynamism (Xue 2001). The quality of graduate courses in China still lags significantly behind developed countries (Wang and Xia 2015). Therefore, it is imperative to establish a new talent perspective, aligning with the requirements of the graduate education innovation plan. This involves placing core emphasis on enhancing graduate students' problem awareness, critical thinking, and innovation capabilities, thereby driving profound reform in talent development models.

Within graduate education, professional graduate degree programs (PGDPs) refer to high-level applied talents with strong professional capabilities in a specific field, differing from the training objectives of academic graduate degree programs. Consequently, it is necessary to establish a curriculum system that aligns with the training objectives of professional graduate degree programs. However, due to the late initiation of professional graduate degree programs, currently, teaching in various universities for professional graduate degree programs is mostly similar to that of academic graduate degree programs (AGDPs), lacking dedicated curriculum systems tailored for professional degree students (Fan 2012). Measures such as updating curriculum philosophies, strengthening curriculum development, optimizing curriculum structures, reforming curriculum content, and reinforcing curriculum management have not been widely implemented, let alone considered.

In developed countries, PGDPs exhibit a pronounced emphasis on practicality and vocational

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orientation. Such programs typically incorporate a rich array of practical courses, including internships, project work, and collaboration with industries, aiming to cultivate students' practical skills within specific professional domains (Zahl, Jimenez, Huffman 2019). This approach facilitates meeting the demands of the job market for skilled professionals and enhances students' competitiveness in the workforce. On the other hand, the structure of PGDPs is more flexible, prioritizing real-world application. This system permits students to select courses of personal interest within certain parameters while emphasizing interdisciplinary learning experiences (Whalen 2006). Also, PGDPs place a stronger emphasis on close collaboration with industries. These programs often establish close ties with industry partners, ensuring the alignment of course content with practical workplace needs (Koh, Kim, McRoy 2017). This collaborative approach provides students with additional practical opportunities and prompts timely adjustments to course content to accommodate industry changes.

In contrast, AGDPs place greater emphasis on academic research and theoretical exploration. Academic degree curricula usually encompass more courses in research methodologies and academic paper composition to develop students' proficiency in in-depth academic research and innovation. This system underscores a profound understanding of the discipline, prompting students to carve out their own research trajectories within the academic sphere (Chin 2001). On the other hand, AGDPs tend to be more rigorous, demanding deep specialization within the discipline. Academic degree curricula have more rigidly defined course structures, requiring students to delve into core knowledge areas of the discipline and complete specified academic research projects. This rigidity contributes to cultivating students' professional depth within the academic field, laying the groundwork for their future academic careers. Moreover, AGDPs lean towards collaboration with academic institutions. AGDPs are more inclined to establish close partnerships with research institutions, academic journals, and the like, fostering the advancement of academic research. Such collaborations contribute to cultivating students' profound academic backgrounds and supporting their future development within the academic realm.

According to the practical situation, some Chinese scholars have also explored reforms in the curriculum system of PGDPs. Some researchers have investigated avenues for optimizing the curriculum design related to enhancing the innovation capabilities of professional graduate students (Yu and Liu, 2009). Others have approached the optimization of professional graduate degree programs from the perspective of constructing a rational and feasible system for practical training courses. This includes clarifying goals for courses and practical training segments, establishing a three-stage engineering master's degree system, and advocating for personalized flexible training plans and diverse thesis topics (Cai, 2015). Furthermore, some argue that, unlike natural sciences, the optimization of graduate programs in the humanities must carefully balance depth and breadth, as well as the interplay between societal needs and content updates (Pan, 2014).

From the existing research, it is evident that many universities recognize the necessity of optimizing the curriculum of PGDPs. However, in terms of specific reform designs and the justification of measures, there is a lack of analysis tailored to the distinctive characteristics of different disciplinary backgrounds. Suggestions are often proposed in response to policy guidance, with limited reliance on thorough surveys and evidence collection involving teachers (instructors), students (knowledge recipients), and relevant institutions. In this paper, based on preliminary investigations and theoretical research, we conducted a questionnaire survey with graduate students from eight engineering, science and arts departments at Hunan University of Technology. This survey aims to explore the current issues within the curriculum system of professional graduate degree programs, providing empirical insights for the reform of the graduate course evaluation system.

ISSN 1512-1801

Research Methodology

Research objects

The purpose of this survey is to understand and grasp the basic conditions of graduate course learning at local comprehensive universities such as HUT in China.

The survey targets full-time professional graduate students. Eight professional graduate programs at Hunan University of Technology were selected for the survey, with a total of 150 questionnaires distributed. Out of the distributed questionnaires, 146 were collected, and 137 were deemed valid, resulting in a questionnaire validity rate of 93.8%.

The specific details of the selected university and the distribution of valid questionnaires are presented in Table 1.

Table 1 *Distribution of majors for different students*

Major	Category	Eff. Ques.	Percent
Math	Science	22	16.0%
Chemistry	Science	8	5.8%
Engineering	Engineering	24	17.5%
Physics	Science	12	8.8%
Foreign Language	liberal arts	19	13.9%
Journalism	liberal art	17	12.4%
Computers	Engineering	19	13.9%
Chinese literature	liberal art	15	11.7%

The basic overview of the collected valid questionnaires is as follows: Out of the respondents, 78 were female, constituting 56.9% of the total, while 59 were male, representing 43.1%. Regarding academic levels, first-year graduate students accounted for 66 individuals, making up 48.1%, second-year graduate students were 45, constituting 32.8%, and third-year graduate students totaled 35, comprising 19.1%. Among the participants, 107 individuals, equivalent to 73.7%, pursued undergraduate majors closely related or identical to their graduate majors, while 30 individuals, making up 26.3%, pursued undergraduate majors that were neither similar nor identical to their graduate majors. Regarding the perception of the university's categorization of curriculum systems for professional and academic graduate students, 62 respondents, representing only 45.2% of the surveyed population, believed that the institution had implemented a differentiated structure. Contrarily, more than 54.8% of students felt that the university had not categorized the curriculum systems for professional and academic graduate students. They perceived that the training for professional graduate students continued to follow the curriculum structure designed for academic graduate students, which they believed hindered the realization of the high-level applied talent cultivation goals for professional graduate education.

Results Analysis and Discussion

Survey results on the fundamental attitude towards course design

Course learning stands as the primary task for students; however, ensuring that each student can enroll in satisfactory courses, fostering enthusiasm for attending classes, improving learning efficiency, and achieving maximum benefits within a reasonable timeframe all hinge on the key factor of rational curriculum design. The satisfaction survey results regarding the current curriculum

ISSN 1512-1801

system, as perceived by graduate students, are presented in Table 2.

Table 2 *Survey distribution of curriculum satisfaction*

	Very Satisfied	Satisfied	Fair	Dissatisfied	Very Dissatisfied
Total	14	48	53	14	8

From Table 2, it is evident that the majority of graduate students hold a positive attitude towards the current curriculum system. Specifically, 14 individuals express high satisfaction, 48 individuals are satisfied, together accounting for 45.2% of the total respondents. Those who perceive the current curriculum system as average amount to 53 individuals, constituting 38.6%. Dissatisfaction is indicated by 14 individuals, and 8 individuals express strong dissatisfaction, collectively representing 16.2% of the surveyed population. While a significant portion of students is satisfied with the current curriculum system, a minority still feels that it falls short of their expectations.

Survey results on the fundamental attitude towards course objectives

The objectives of graduate courses are established in accordance with the training goals, and clear course objectives are the key to the rational design of course content. The investigation into graduate course objectives includes two questions: "Understanding of training objectives" and "Consistency between course objectives and training goals." The survey results are presented in Table 3.

Table 3 *Survey distribution of curriculum objectives*

Items	Number	Percent
Understanding	105	76.6%
Not Understanding	32	23.4%
Consistent	51	37.2%
Not Consistent	85	62.8%

The statistical results from Table 3 indicate that the majority of students have an understanding of the training objectives for professional graduate degree programs. However, 23.4% of graduate students still chose to express a lack of understanding of these training objectives. Regarding the consistency between course objectives and training goals, student evaluations are relatively low. Among the 105 students who have an understanding of the training objectives, only 37.2% believe that course objectives align with the overall training goals. Course objectives serve as the concretization of training goals, and only when the two are aligned can the training objectives for professional graduate students be achieved, meeting the societal demand for high-level applied talents.

Survey results on the fundamental attitude towards course objectives content

The survey on course content settings primarily focused on four aspects: the depth and breadth of course content, as well as the cutting-edge and applicative nature of the content. The survey results are presented in Table 4.

Table 4 *Survey distribution of curriculum content*

Items	Very Satisfied	Satisfied	Fair	Dissatisfied	Very Dissatisfied
Depth	10.8%	18.6%	36.3%	32.9%	1.4%

ISSN 1512-1801

Range	13.6%	12.8%	40.4%	23.4%	9.8%
Cutting-edge	6.2%	25.2%	37.2%	28.2%	3.2%
Application	9.4%	17.4%	32.8%	30.8%	9.6%

From Table 4, it is evident that graduate students hold diverse views on the depth of current course content. The combined proportion of those who consider it very satisfactory and somewhat satisfactory is 29.4%. Notably, 71.6% of graduate students come from undergraduate majors that differ significantly from their graduate majors, making it challenging for them to grasp certain subjects not covered during their undergraduate studies. Conversely, students who find the course content somewhat satisfactory mostly pursued similar or identical undergraduate and graduate majors. Regarding the range of course, only 26.4% of graduate students believe that the content is very or somewhat extensive. Consequently, educational institutions should focus on enriching course content in future teaching to broaden the knowledge base of graduate students. An analysis of the cutting-edge and applicative aspects of course content reveals a general lack of consensus among students. Regarding cutting-edge aspects, only 31.4% of students selected options indicating the content as very cutting-edge or somewhat cutting-edge. In terms of applicability, students who perceive the content as very applicable or somewhat applicable constitute only 26.8% of the total respondents. Conversely, 40.1% of students feel that the applicability of the course content is somewhat poor or very poor. Therefore, future efforts should be directed towards enhancing the cutting-edge and applicative dimensions of course content to better align with the needs of graduate students.

Survey results on the fundamental attitude towards course objectives structure

The survey on course structure settings consists of two questions aimed at understanding students' level of agreement with the current course structure and their preferences for adjustments. The specific survey results are presented in Table 5.

Table 5 *Survey distribution of curriculum structure*

Items	Very Satisfied	Satisfied	Fair	Dissatisfied	Very Dissatisfied
Rationality	15.6%	28.4%	30.7%	19.2%	6.1%

Desired Courses	Public Core Courses	Mandatory Major Courses	Elective Major Courses	Interdisciplinary Elective Courses	Others
Percent	6.5%	30.4%	32.4%	29.3%	1.4%

From Table 5, it is evident that students do not strongly agree with the current course structure settings. Specifically, individuals who find the course structure very reasonable or somewhat reasonable constitute 44% of the total, while those who find it somewhat unreasonable or very unreasonable make up 25.3%. Regarding the survey on the types of courses students wish to add, results show that over 60% of students express a desire to include more specialized elective courses and interdisciplinary public elective courses.

Survey results on the course aids in skill enhancement

The survey on the extent to which course learning contributes to skill enhancement comprises three questions, covering research abilities, innovation capabilities, and practical skills. The specific

ISSN 1512-1801

survey results are presented in Table 5.

Table 6 *Survey distribution of course aids in skill enhancement*

Items	Very effective	Effective	Fair	Ineffective	Very Ineffective
Research Capability	16.1%	24.5%	35.6%	22.4%	1.4%
Innovation Capability	14.5%	35.1%	29.5%	13.8%	7.1%
Practical Capability	8.5%	22.6%	31.9%	28.8%	8.2%

From Table 6, it is apparent that students perceive course learning as having the greatest impact on the enhancement of innovation capabilities, followed by research abilities, and lastly, practical skills. Those who believe that current course learning significantly or moderately contributes to the improvement of innovation capabilities constitute 49.6%. However, almost one-third of students feel that the current course learning has limited impact on the development of practical skills, with only approximately 8.5% stating that the impact is significant.

Conclusion and Suggestions

Current problems in the curriculum system for PGDPs

● Deviation from PGDPs educational objectives

In recent years, China has continuously expanded the enrollment scale of professional graduate students, shifting the focus of graduate education from primarily cultivating academic talents to balancing the development of both applied and academic talents. Therefore, it is essential to clarify the educational objectives for each type of graduate student and build the curriculum system accordingly. However, survey results indicate that nearly 80% of students who understand the educational objectives of professional graduate programs believe that the curriculum objectives in China do not comply with these objectives, making it difficult to meet the requirements for cultivating applied talents set by the nation.

● Lack of emphasis on applicability

The curriculum for PGDPs should adequately reflect advancement, comprehensiveness, and practicality. The survey investigated professional graduate students' evaluations of course content in terms of depth, range, cutting-edge, and applicability. The results indicate that opinions on the depth of current course content vary among professional graduate students, while evaluations of range, advancement, and applicability are generally low. Only 26.4% of students consider the course content to be very or fairly extensive, and merely 31.4% believe it is very or fairly cutting-edge. The assessment of applicability is even lower, with only 26.8% of students considering it to be very or fairly strong. In the current PGDPs in China, course content tends to be simple, with few courses covering interdisciplinary knowledge or cross-disciplinary subjects. Additionally, there is a lack of cutting-edge knowledge. The course content is relatively outdated (Sheng and Sun 2013), with some instructors teaching the same course every year and rarely updating teaching materials. This practice is not conducive to graduate students mastering and understanding the latest professional knowledge, impeding the improvement of graduate education quality.

ISSN 1512-1801

●Unreasonable course structure and insufficient elective courses

A reasonable course structure is essential to ensure the overall functionality of the curriculum system. The results of this survey indicate that only 44% consider the current course structure reasonable, while a high percentage of 25.3% find it unreasonable. In the survey on "which type of courses students desire to add," the majority of graduate students express the will for major courses. Specifically, 30.4% of graduate students wish to add mandatory major courses, and 32.4% express the wish to include elective major courses. Concerning the course setting in PGDPs, the overall structure overly emphasizes disciplinary characteristics and highlights professional features. However, there is a shortage of courses related to research methods, interdisciplinary, and cross-disciplinary subjects, lacking courses that can effectively enhance the comprehensive qualities of graduate students.

Suggestions to the construction of PGDPs curriculum system

●Targeted curriculum design

The construction of the graduate curriculum system should strictly adhere to the training objectives. Curriculum setting plays a pivotal role in this process. Targeted course arrangements, aligned with the diverse goals of different types of graduate students, are essential. For PGDPs candidates, the focus is on cultivating individuals with solid theoretical knowledge and strong professional and practical problem-solving skills. The curriculum should be structured to cater to societal and industrial demands, emphasizing practical skills over academic orientation. This approach ensures the production of highly qualified, application-oriented specialists for the workforce.

● Emphasis on cutting-edge knowledge

The introduction of research methodology, cutting-edge courses, and interdisciplinary subjects during the graduate education process significantly enhances research, innovation, and practical capabilities. Therefore, when selecting course content, local universities should emphasize dynamism, comprehensiveness, and relevance. Incorporating courses on research methodologies will strengthen students' understanding of research techniques within their respective fields. Additionally, the curriculum should include courses that reflect the latest developments in the field, ensuring continuous updates to align with industry trends. Regularly integrating the most recent research findings into the curriculum is crucial for students to stay informed about the forefront of their discipline, ultimately enhancing their ability to identify and solve problems.

●Optimization of course structure

An optimal course structure, while ensuring a foundational understanding of theoretical knowledge, should empower students with the autonomy to choose courses that align with their interests. This structure must be adaptable to meet the demands for applied talents in society. The current curriculum structure in PGDPs encompasses four modules: public core courses, mandatory major courses, elective major courses, and interdisciplinary elective courses. However, the proportionality within these modules is imbalanced. Adjustments should be made by considering the goals of each discipline and practical scenarios. Excessive emphasis on political theory and English courses should be reduced, and more attention should be given to foundational theoretical courses within each discipline. Universities should adhere to a holistic principle when designing courses, reduce lower-level courses, and promote elective courses, particularly those that span multiple disciplines, encouraging students to make choices based on their interests. Furthermore, dynamic management

ISSN 1512-1801

of the curriculum, adapting to societal needs, is vital. Outdated courses should be phased out, making room for the inclusion of cutting-edge content, thereby constructing a scientifically rational course system.

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References

1. Chin G. J., (2001). *Graduate Degree Programs*. Mich. J. Race & L., 7: 481.
2. Fan Z.-J., (2012). *Exploring the construction of academic and professional master's degree course systems*. University Education, 1: 31-33 ·
3. Koh B. D., Kim J. R., McRoy R., (2017). *Exploring adoption-specific curricula in undergraduate and graduate degree programs*. Adoption Quarterly, 20(3): 252-265.
4. Li M. X., (2017). *Issues and improvement strategies for master's graduate course design.* Journal of Henan University of Technology (Social Sciences Edition), 18, 111-114.
5. Luo Y.-H., (2007). *Research on the Reform and Innovation of Master's Graduate Course System in China and Talent Cultivation*. Chongqing University.
6. Sheng M., Sun S., (2013). *Factors influencing and solutions for graduate education satisfaction in China*. Monthly Journal of Science and Technology Entrepreneurship, 1,116-119.
7. Wang X., Bian Q., Sun J.-H., (2015), *On the construction of academic master's graduate course system*. Degrees and Graduate Education, 10:5.
8. Whalen M. L., (2006). *Graduate and professional education*. Cornell university, 7, 45-56.
9. Xue T.-X., (2001). Graduate Education. *Guangxi Normal University Press*
10. Yu G.-E., Liu H.-B., (2009). *Optimizing curriculum system design to enhance interdisciplinary research abilities of graduate students—A case study of Zhejiang Sci-Tech University*. Research on Chinese Higher Education, 6: 3.
11. Zahl S. B, Jimenez S., Huffman M., (2019). *Assessment at the highest degree (s): Trends in graduate and professional education*. Trends in Assessment, 6, 107-123.

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