Discussion on the Application of Interdisciplinary Integration in Postgraduate Education from the Perspective of All-round Education

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Abstract: Based on the educational concept of "all-round education", this paper explores the application and value of interdisciplinary integration in the postgraduate education system, emphasizing its important role in cultivating compound talents in the new era and promoting the overall improvement of higher education quality, aiming to cultivate more high-level talents with innovative spirit and practical ability, contribute more wisdom and strength to the country's scientific and technological progress and the prosperity and stability of society.

Keywords: All-round education; Interdisciplinary integration; Graduate education

1. Introduction

Postgraduate education, as a key link in building the nation's high-level talent echelon, exploring and implementing efficient postgraduate education strategies to cultivate postgraduate students' innovative thinking and practical abilities has become a topic worthy of exploration in the field of postgraduate education at present. Liu and Wang et al. discussed common problems in postgraduate education management and the transformation of educational management models in the context of the new era [1–2]. This study put forward countermeasures to improve the management level of postgraduate education by formulating a scientific and reasonable postgraduate training program, strengthening secondary management and building a stable management team, establishing an incentive mechanism for talent cultivation, implementing personalized psychological intervention, and clarifying the responsibilities and assessment of supervisors. In the process of cultivating and managing postgraduates, implementing the fundamental task of fostering virtue and nurturing talent in higher education, and running higher education that satisfies the people, is an important part of promoting the "all-round education" work in colleges and universities [3]. It is necessary to deeply understand that ideological and political

education work is not an accessory or subsidiary work of management, but should be the basic guiding ideology in postgraduate education work. It should be combined with management work and professional training [4]. The relevant literature analyzed that within the framework of the graduate student education model, the synergy of all levels of subjects (including counselors, ideological course teachers, graduate student supervisors, and other managers, etc.) should be fully exerted, and the time span should be emphasized in constructing the education model [5–7]. Control the reform of postgraduate education and teaching, improve the training of teachers, promote social practice education, build campus culture, etc. [8]. Build an all-round education space including connotation construction, education subject and education method, promote all-round education of postgraduates, give full play to the infiltration role of professional course teaching and academic activities, give full play to the "three self" role of postgraduates, and give full play to the expansion role of social practice activities [9–10]. Coordinate internal and external education subjects, improve the role positioning of all-staff education, hold onto key training stages, promote the entire process of education throughout, integrate industry ideological and political resources, and deepen the creation of an all-around education atmosphere [11].

The "all-round education" concept, as a brilliant pearl and important guiding ideology for the development of higher education in the new era, all staff, the entire process and all aspects are the three elements that support the whole, forming an organic whole that is interrelated and interconnected, opening up a new perspective and path for ideological and political guidance in the management of postgraduate education [12]. Interdisciplinary integration, by ingeniously integrating the knowledge systems and resource advantages of different disciplines, breaks down the barriers of traditional disciplines, promotes the collision and integration of academic ideas, and provides a broad platform for knowledge exploration and practical innovation for postgraduates.

Based on the concept of "all-round education", this paper explores the application path of interdisciplinary integration in the training of postgraduate students. By integrating and constructing interdisciplinary research platforms, building a team of mentors with diverse disciplinary backgrounds, and mobilizing various educational resources, graduate students can receive guidance and support from different disciplinary backgrounds throughout their training and learning. Build a reasonable interdisciplinary curriculum system to cultivate the correct value orientation of graduate students and enhance their personal research exploration ability; Through self-exploration and research practice in the postgraduate stage, give full play to the "three self" role, achieve all-round development in morality, intelligence, physical fitness, aesthetics and labor, break through the limitations of single discipline or skill training, build a comprehensive and multi-angle training system covering all fields of postgraduate training, and inject impetus into the development of postgraduate education in the new era [4].

2. The significance of multi-disciplinary integration in cultivating postgraduates from the perspective of "all-round education"

In recent years, with the expansion of postgraduate enrollment and the tough employment situation, more and more undergraduates have chosen to apply for postgraduate studies. However, before and after being admitted to postgraduate studies, many students do not realize what postgraduate education really means and remain confused about their future after entering postgraduate studies, as if pursuing a postgraduate degree merely slows down the process of entering society. The transition from passive imparting of knowledge to active exploration and research, from "how to solve problems" to "how to pose valuable research questions", and from classroom-based learning to research training based on literature reading and experimental design requires the

joint efforts of the graduate students themselves, their supervisors, the college, and even the university.

Interdisciplinary integration is the focus of cultivating innovative talents in engineering [13]. The multi-disciplinary integration model of postgraduate education, combined with the macro perspective of "all-round education", emphasizes the all-round development and improvement of comprehensive quality of students, adheres to the educational concept of full participation, full attention, and full coverage, and builds a training system covering all fields of postgraduate education. Through the synergy of multiple dimensions, multiple carriers and multiple scenarios, with the all-round development of morality, intelligence, physical fitness, aesthetics and labor as the core goal, breaking through the limitations of single discipline or skill cultivation, the multi-disciplinary integration of postgraduate education profoundly reflects the perfect combination of the richness, breadth and depth of postgraduate education content, and efficiently integrates multi-dimensional educational resources such as schools, society and even the network. Maximize the allocation and utilization of educational resources, build a comprehensive and in-depth framework of knowledge and skills for graduate students, and ensure that each graduate student can be fully nourished and exercised in multiple dimensions such as academic, moral, practical and psychological aspects, stimulate unprecedented innovative thinking and practical ability, and become a future leader with broad vision, profound background and outstanding talent.

3. Measures for cultivating graduate students through interdisciplinary integration from the perspective of "all-around education"

3.1. Integrate and build interdisciplinary research platforms and establish a team of mentors with diverse disciplinary backgrounds

The cultivation of postgraduate students relies on the research platform conditions of the discipline and the guidance of the supervisor. For a discipline, the integration and construction of interdisciplinary research platforms, the development of a good multi-disciplinary integrated training program, the implementation of interdisciplinary mentor skills training, and the improvement of teachers' interdisciplinary guidance capabilities are the basis for cultivating outstanding graduates.

Encouraging cross-disciplinary collaborative research among teachers across the university, promoting real-time sharing of experimental teaching platforms across the university, and building bridges for mentors' communication are key links in promoting knowledge sharing and resource integration. By organizing regular interdisciplinary seminars, workshops, and collaborative projects, not only can mutual understanding and trust among mentors be deepened, but also the collision of ideas and inspiration among different disciplines can be promoted, thereby enhancing the interdisciplinary teaching ability of teachers and providing more diverse and in-depth academic guidance for graduate students.

In addition, in the training path of interdisciplinary graduate education, the training personnel should not be limited to the close collaboration of mentors, counselors, administrators and graduate students themselves on campus, but should strengthen the awareness of education and responsibility, and provide direct or indirect ideological and value guidance to students in every link and direction, and broaden their horizons [14]. Recruit a faculty with a rich interdisciplinary background to join this great cause. By actively introducing and cultivating teachers with multi-disciplinary research experience and deep teaching experience, guiding various enterprise practice projects, innovation and entrepreneurship practice competitions, organizing graduate students to participate in innovation and entrepreneurship competitions of various disciplines, holding science and technology innovation competitions with interdisciplinary themes, providing valuable practical platforms for

graduate students, and providing financial support for approved innovation and entrepreneurship projects, Encourage students to apply with research achievements such as papers and invention patents [13]. Both inside and outside the school, educators will work together to spark practical innovation and achieve all-staff education through cross-disciplinary interaction.

3.2. Build a reasonable interdisciplinary curriculum system

Course teaching, as a solid foundation for the development of postgraduate students, is of paramount importance. To cultivate high-end talents with a multi-disciplinary perspective and innovative ability, efforts should be made to build a curriculum system that reflects the characteristics of multi-disciplinary integration as well as depth. Curriculum-based ideological and political education is the primary task and important measure of "all-round education" [15]. Postgraduate courses focus more on cultivating postgraduate students' critical thinking and practical problem-solving skills than undergraduate courses. Professional course teachers, in addition to having a solid theoretical knowledge foundation and professional background, should enhance their awareness of curriculum-based ideological and political education, strengthen the concept of curriculum-based ideological and political education, and make full use of their disciplinary background. Project-based learning and thematic teaching, combined with the current environment and current policies, through the organic integration and collision of knowledge from different disciplines, explore the ideological and political education elements in postgraduate professional courses to cultivate the correct value orientation of postgraduate students.

As a guide to graduate education, the supervisor should not only deepen their understanding and mastery of various interdisciplinary knowledge, but also keep up with the latest theoretical and practical developments in interdisciplinary fields and be courageous in exploring new research topics. The school has set up "mentor group courses" in the postgraduate curriculum system. After completing the concentrated teaching courses, through disciplinary topics, the mentors (groups) guide the postgraduate students to the cutting-edge technologies in the relevant fields of the topics, guide the postgraduate students to find the intersection points in extensive exploration, stimulate their interest in scientific research, cultivate their multi-disciplinary scientific research awareness, and enhance their mastery of the knowledge in the relevant fields of the topics. To prepare for the research project, the teaching methods are flexible and diverse, such as direct instruction by the supervisor, expert lectures, and online resource learning. During the subject project, students can report on the knowledge and the latest technology they have acquired through the mentor's teaching, video learning, expert lectures, and paper reading, and provide timely feedback and answers to questions through academic discussions. Finally, the supervisor introduces the research topic of the thesis in the form of practical projects, scientific experiments, etc., enabling the student to gradually establish a rigorous scientific research thinking and master scientific research methods as the experimental foundation for conducting the thesis research. The experimental/practical projects are set by the supervisor (group) themselves, which can be self-set topics, or jointly set with enterprises, or released by enterprises. Through the establishment of group courses, graduate students gradually transform from undergraduates to true graduate students in a subtle learning process, achieving multi-dimensional improvement in their personal research exploration ability.

3.3. The development of self-exploration and research practice skills during the postgraduate stage

As an individual graduate student, it is necessary to fully exert subjective initiative, play the "three self" role

of self-management, self-education, and self-development, actively participate in academic discussions and practical training, and make the graduate student stage a golden period for self-transcendence and growth [4]. For graduate students, it is important to fully recognize the significance of stepping off campus, participating in academic symposiums and salon forums of various disciplines, and broadening their academic horizons through face-to-face communication with scholars from different disciplinary backgrounds. At the same time, through participating in interdisciplinary research projects and practical activities, the students gain an in-depth understanding of the research methods and ideas of different disciplines and develop interdisciplinary thinking patterns and problem-solving abilities. The graduate education department of the college has organized a series of academic activities such as the "Seminar on Intelligent Computing and Smart Grid", "CCF Computer Application Committee Enters the School", and "Digital Intelligence Lecture Hall Series" to bring a wealth of cutting-edge information related to the new generation of network information technologies such as artificial intelligence, big data, and cloud computing to graduate students, broaden their academic horizons, and reveal future trends.

Graduate education and training should be comprehensive in dimensions, with emphasis on value guidance, ability enhancement, and personality shaping. The student affairs department of the college has emphasized the importance of research integrity by organizing activities such as the "Graduate Student Signature Activity on Scientific Ethics and Academic Integrity", the speech contest on the theme of research integrity education, and the "Afternoon Tea with Professors" theme activity, encouraging graduate students to conduct research with high moral standards and establishing a moral high ground for the research field. Be a practitioner of good academic ethics and a defender of a good academic atmosphere. By organizing sports activities such as fun sports meetings and rope skipping competitions, students can build up their bodies, relieve psychological stress, eliminate negative emotions, improve their ability to regulate emotions, and cultivate a positive mindset and good psychological qualities. By organizing activities such as lectures on safety education against telecom fraud and signatures on the theme of Cyber Security Week, educators aim to popularize knowledge about cyber security, promote the importance of cyber security, and enhance the cyber security awareness of graduate students.

In addition, moral education at multiple levels, including professional ethics and career planning, is also indispensable. At the undergraduate level, courses on career planning and employment, and entrepreneurship for college students are usually offered, but not in postgraduate courses. Moreover, postgraduate students show a lack of PPT making and presentation skills in related scholarship defenses, etc. Professional ethics education and employment guidance should be organized more often. Through various forms of activities such as lectures on professional ethics, moral lecture halls, advanced models in employment, salon discussions, and debate competitions, enhance the professional ethics awareness and professional ethics level of graduate students, strengthen their employability, and improve their personal abilities in all aspects, so that they can adhere to principles and move steadily and far in their future careers.

4. Conclusion

In conclusion, under the guidance of the educational concept of "all-round education", the application of multi-disciplinary integration in postgraduate education urgently needs to bring together the strengths of the school, teachers of various disciplines, postgraduate students, and all sectors of society to form a powerful

synergy. Efforts should be made to integrate and build interdisciplinary research platforms, build a team of teachers and mentors with diverse disciplinary backgrounds, and mentors should strengthen the frontiers of their own disciplinary backgrounds while keeping up with the latest theoretical and practical developments in interdisciplinary fields, attract teachers with rich interdisciplinary backgrounds, promote exchanges and cooperation among multiple disciplines, and achieve the sharing of disciplinary platforms. Both within and outside the university, educators aim to inspire practical innovation among graduate students; Build a curriculum system that combines the characteristics of interdisciplinary integration with depth, and through the organic integration of knowledge from different disciplines, explore the ideological and political education elements in professional courses to cultivate the correct value orientation of graduate students; Organize graduate students to participate in various interdisciplinary academic salons and seminars to broaden their academic horizons, as well as interdisciplinary research projects and practical innovation activities to transform theoretical knowledge into the ability to solve practical problems, and to exercise innovative thinking and practical operation skills; Focus on the value guidance, ability improvement and personality shaping of graduate students, cultivate good research integrity, psychological quality, professional ethics and employment competitiveness, promote the all-round development of morality, intelligence, physical fitness, aesthetics and labor, enhance the personal ability of graduate students in all aspects, and cultivate more high-level talents with innovative spirit and practical ability to promote scientific and technological progress and lead social development to contribute greater wisdom and strength.

Disclosure statement

The author declares no conflict of interest.

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