Discussion on the Training Mode of Postgraduates Majoring in Electronic Information under the Background of Breaking the "Five Only"

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Abstract: As China's educational reforms deepen, the policy to break the "Five Only" evaluation mechanism has emerged, aimed at overcoming the over-reliance on single evaluation indicators such as publications, projects, and awards. This study focuses on the training modes for postgraduate students in electronic information disciplines. By comparing and analyzing existing training modes both domestically and internationally, it proposes pathways to optimize the training modes for postgraduate students majoring in electronic information under the context of breaking the "Five Only" policy. The results indicate that diversified training objectives, innovative course settings, and teaching methods, enhanced scientific research training and practical components, a diversified and scientific evaluation system, and the construction and development of the teaching staff are effective ways to improve the quality of training for postgraduate students majoring in electronic information fields.

Keywords: Breaking the "Five Only"; Electronic information; Postgraduate training modes; Diversified evaluation; Educational reform

1. Introduction

With the rapid development of information technology in recent years, disciplines related to electronic information have become crucial supports for China's technological innovation and industrial upgrading. However, traditional graduate training modes have overly emphasized the number of academic achievements, neglecting the cultivation of students' comprehensive qualities and innovative abilities. To address this issue, the Ministry of Education has introduced a policy to break the "Five Only" evaluation system, aimed at enhancing the overall quality of postgraduate education through a diversified evaluation system. This study aims to analyze the current state and compare the training modes for postgraduate students in electronic information disciplines both domestically and internationally. By doing so, it proposes specific pathways to optimize these training modes under the context of breaking the "Five Only" policy, thereby providing theoretical support and practical guidance for the reform of postgraduate education in electronic information disciplines.

2. The essence and implementation background of the "Break the Five Only" policy

2.1. Introduction of the "Break the Five Only" policy

The "Break the Five Only" policy is an important initiative put forth by the Ministry of Education to improve the quality of higher education and promote reforms in the educational evaluation system. The term "Five Only" refers to an overemphasis on "only publications, only professional titles, only degrees, only awards, and only affiliations." These criteria have long dominated the evaluation systems in higher education, leading to a one-sided and simplistic assessment framework that overlooks a comprehensive evaluation of educational quality and overall capabilities. This evaluation method excessively emphasizes quantitative indicators, neglecting the essence of education and the fundamental mission of cultivating individuals, which has led to a tendency toward superficiality in academic and professional development among universities and postgraduate students [1].

In response to these issues, the Ministry of Education of China issued the "Opinions on Deepening the Reforms of Project Evaluation, Talent Evaluation, and Institutional Assessment" in 2018, which explicitly called for breaking away from the "Five Only" phenomenon and advocated for establishing a diversified and scientific evaluation system. This document emphasizes establishing a scientific educational evaluation orientation by improving methods of project review, talent evaluation, and institutional assessment, promoting categorized evaluations that focus on quality, capability, and contribution, and avoiding a one-size-fits-all approach to evaluation. The policy also notes the importance of process-oriented evaluation to enhance the comprehensiveness and fairness of assessments, encouraging universities to shift from an over-reliance on quantitative indicators to a comprehensive quality evaluation.

The introduction of this policy marks a new development stage for China's educational evaluation system, aiming to return education to its roots and promote the holistic development of students. By breaking the "Five Only" norms, universities can focus more on the intrinsic construction of education, emphasizing the cultivation of students' innovative and practical abilities, and social responsibility, thus promoting a comprehensive enhancement of educational quality. Moreover, this policy provides universities with greater autonomy and flexibility in innovating talent training modes, helping to stimulate their intrinsic motivation and creativity.

In the specific implementation process, the "Break the Five Only" policy requires each university to develop scientific and reasonable evaluation standards based on its actual conditions, covering aspects such as teaching quality, research level, social service, and cultural heritage. Furthermore, the policy encourages universities to explore various evaluation methods, such as peer review, expert review, and social evaluation, to ensure the objectivity and fairness of the evaluation results.

2.2. Implementation background of the "Break the Five Only" policy

The background for the implementation of the "Break the Five Only" policy can be analyzed from multiple perspectives. First, from an international perspective, global higher education is at a crucial period of transformation and innovation. Countries around the world are committed to reforming their educational evaluation systems to enhance educational quality in response to increasingly fierce global competition and rapidly changing technological environments. For example, some well-known universities in the United States and Europe are exploring more comprehensive evaluation criteria that focus on fostering students' innovative abilities and sense of social responsibility. As the world's second-largest economy, China's higher education plays an increasingly important role in global competition and urgently needs to reform its evaluation system to enhance its educational competitiveness. This context has prompted China to adjust its educational evaluation system promptly to align with international educational development trends and enhance the international competitiveness and influence of Chinese higher education [2].

Secondly, from the perspective of the domestic educational situation, Chinese universities have long been

overly dependent on the "Five Only" evaluation standards, leading to a prevalence of academic superficiality and a focus on quantity over quality. Under the pressure to pursue a high quantity of academic achievements, many teachers and postgraduate students tend to publish a large number of low-quality papers, neglecting the depth and practical value of research. This not only wastes a significant amount of educational resources but also hinders the healthy development of education. The introduction of the "Break the Five Only" policy is a reflection on and response to this situation, aiming to guide universities and researchers to shift from a quantity-oriented to a quality-oriented approach, thereby improving the overall level of education and research.

Lastly, as an important support for the nation's strategic emerging industries, the quality of postgraduate training in electronic information disciplines directly affects the effectiveness of national technological innovation and industrial upgrading. Electronic information technology has widespread applications in defense, economy, and social life and is a vital force in driving national modernization. However, some issues in the current postgraduate education in electronic information, such as a singular focus on training objectives and insufficient practical abilities, severely impact the development of the discipline and the training of talents. The implementation of the "Break the Five Only" policy provides an opportunity for educational reform in electronic information disciplines. Promoting diversified evaluation standards encourages universities to pay more attention to students' practical abilities, innovative capabilities, and overall qualities during the training process, thereby enhancing the quality of postgraduate education and meeting the national demand for high-quality innovative talents.

3. Current state and comparison of postgraduate training modes for electronic information disciplines globally

3.1. Current state of postgraduate training modes for electronic information disciplines in China

In China, the training modes for postgraduate students in electronic information disciplines primarily revolve around coursework, scientific research training, and thesis writing. Currently, many universities' training modes for postgraduate students majoring in electronic information exhibit the following characteristics and issues.

Firstly, the training objectives are relatively singular, with an excessive emphasis on academic research capabilities. Although the training programs include some practical courses, these courses are often marginalized in actual implementation, failing to fully meet students' needs for practical and innovative abilities. Moreover, when setting training objectives, some universities still primarily rely on the number of publications and research projects, neglecting the cultivation of students' comprehensive qualities and practical application skills [3].

Secondly, the curriculum is relatively outdated and struggles to keep up with the forefront of disciplinary development. As electronic information technology evolves rapidly, the pace of curriculum updates in universities is comparatively slow, leading to a gap between the knowledge students acquire and industry demands. The course settings in some universities are overly theoretical and lack content that is closely integrated with practical applications, making it difficult for students to quickly adapt to industrial development needs after graduation.

Additionally, the design of scientific research training and practical components also has certain deficiencies. Although most universities offer research training and practical courses, the effectiveness of these programs varies greatly. Some universities' research training remains at the theoretical discussion level, lacking substantial experimental operations and project practices. In terms of practical components, students often lack opportunities to collaborate with enterprises, making it difficult to enhance their practical abilities and

innovation skills through actual projects.

Lastly, the evaluation system still primarily focuses on quantitative indicators. Despite the "Break the Five Only" policy calling for the establishment of a diversified and scientific evaluation system, many universities' assessment systems in practice still emphasize quantitative indicators, such as the number of publications and project applications, overlooking the evaluation of students' learning processes and comprehensive qualities. This mode of evaluation can lead students to chase quantity over quality, impacting the development of their overall capabilities.

3.2. Current state of postgraduate training modes for electronic information disciplines internationally

Internationally, particularly in developed countries like the United States and Europe, the training modes for postgraduate students in electronic information disciplines are more mature, exhibiting high flexibility and innovation. The training modes in these countries typically have the following characteristics.

Firstly, the training objectives are diversified, focusing on the cultivation of comprehensive qualities and practical abilities when setting training goals, in which the student's accomplishments such as innovative capabilities, critical thinking, teamwork skills, and sense of social responsibility are emphasized. In addition to completing academic research, students are also required to participate in various practical projects, internships, and social services to comprehensively enhance their overall qualities.

Secondly, the curriculum is flexible and diverse, keeping pace with the forefront of the discipline. a modular course setup is often employed, allowing students to choose different course modules based on their interests and career development needs. The course content not only covers theoretical knowledge but also emphasizes integration with practical applications to ensure students are up to date with the latest technologies and industry trends. Additionally, many universities collaborate with companies, inviting industry experts to participate in course design and teaching, enhancing the practicality and forward-looking nature of the courses [4].

Furthermore, scientific research training and practical components place a high emphasis on real-world applications. Postgraduate students typically are required to engage in actual research projects and internships during their studies and are encouraged to apply theoretical knowledge to solve practical problems. Through cooperation with companies, students can access cutting-edge technologies and real application scenarios, enhancing their practical and innovative capabilities.

Lastly, the evaluation system is diversified and comprehensive. A variety of evaluation criteria are applied to assess students not only on academic achievements but also on students' performance in scientific research training, project practice, and social services. The assessment process combines formative and summative evaluations, employing various methods such as mentor evaluations, peer reviews, and self-assessments to comprehensively examine students' learning processes and overall abilities.

4. Pathways to optimizing postgraduate training modes for electronic information disciplines under the "Break the Five Only" context

4.1. Diversification of training objectives

In the context of breaking the "Five Only" norms, the primary task in optimizing the training modes for postgraduate students in electronic information disciplines is to diversify the training objectives. Traditional training modes often overemphasize academic research capabilities while neglecting students' overall quality and practical abilities. Diversified training objectives should include the following aspects.

Firstly, fostering students' innovative abilities. The field of electronic information technology is rapidly

evolving, and innovation is the core driver of continual progress in this area. Universities should stimulate students' innovative thinking and cultivate their problem-solving skills by offering innovative courses and organizing innovation competitions.

Secondly, focusing on students' practical skills. Disciplines in electronic information are closely related to practical applications, making the development of students' practical abilities crucial. Universities should strengthen industry-academia cooperation and increase internship opportunities to allow students to hone their skills and accumulate experience in real-world settings [5].

Thirdly, developing students' interdisciplinary collaboration skills. The complexity and wide application of electronic information technology require students to have interdisciplinary knowledge and collaboration skills. Universities should encourage students to take courses in related disciplines and organize interdisciplinary team projects to enhance their collaborative abilities and overall quality.

Lastly, enhancing students' sense of social responsibility and professional ethics. Universities should integrate social responsibility and professional ethics education into the training process, helping students to establish correct values and professional perspectives and to cultivate their sense of social responsibility and professional ethics.

4.2. Reform of curriculum and teaching methods

Reforming the curriculum and teaching methods is a crucial part of optimizing the training modes for postgraduate students in electronic information disciplines. Existing curricula are often too theoretical and fail to meet students' needs for practical application and innovation skills. To address this, the following measures should be implemented.

Firstly, update the curriculum content to keep pace with the forefront of the discipline. Universities should regularly review and update their course content to ensure it covers the latest technologies and research findings, meeting students' needs for cutting-edge knowledge.

Secondly, increase practical and project-based courses. Universities should add more practical and project-based courses to their curricula, encouraging students to apply their learned knowledge to real-world projects, thereby enhancing their practical and innovative skills.

Thirdly, adopt a variety of teaching methods. Traditional lecture-based teaching methods can fail to stimulate students' interest and initiative. Universities should employ diverse teaching methods such as case teaching, project-based learning, and flipped classrooms to improve teaching effectiveness and student engagement.

Additionally, strengthens collaboration between academia and industry to jointly develop courses. Universities should collaborate with industry to develop courses that meet industry needs and invite industry experts to participate in teaching, ensuring the practicality and foresight of the course content.

4.3. Strengthening scientific research training and practical components

Firstly, increase the practical application of scientific research training. Universities should encourage students to actively participate in real scientific research projects, especially those in collaboration with businesses. This not only allows students to apply their learned knowledge to solve real-world problems but also enhances their research and innovation capabilities. Specifically, schools can establish partnerships with high-tech companies, set up joint laboratories or research centers, and enable students to engage in the development of cutting-edge projects under the guidance of both academic supervisors and industry experts. Additionally, universities should regularly host scientific seminars and workshops, inviting renowned scholars and industry experts to share

the latest research findings and technological trends, helping students broaden their academic horizons and stimulate their research interests [6].

Secondly, strengthen practical components to enhance students' practical skills. Universities should significantly increase internship opportunities and practical training bases, allowing students to hone their skills and accumulate experience in real work environments. Through collaboration with enterprises, jointly developed practical projects can enhance students' overall qualities in practice. For example, enterprise internship courses can be set up, where students participate in long-term or short-term internships at partner companies, engage in actual project operations, and understand industry demands and workflows. Additionally, schools should build high-level on-campus laboratories and platforms for innovation and entrepreneurship, providing students with a supportive environment and resources to encourage them to independently undertake innovative experiments and start-up projects.

Moreover, organizing students to participate in various academic exchange activities is also an important way to enhance their research capabilities and academic levels. Universities should encourage and support students to attend domestic and international academic conferences, and research competitions, which broaden their perspectives and enhance their research and academic skills. By attending academic conferences, students can engage in in-depth discussions with experts in the field, stay updated with the latest research trends, and receive valuable academic advice. Research competitions provide a platform for students to showcase their innovative thinking and research outcomes, fostering their creativity and competitive spirit.

4.4. Diversification and scientific nature of the evaluation system

The diversification and scientific nature of the evaluation system is an important requirement of the "Break the Five Only" policy. To achieve this, the following measures should be taken.

Firstly, establish diversified evaluation criteria. Evaluation standards should cover multiple aspects, including academic achievements, research capabilities, practical skills, innovative abilities, and overall qualities, to avoid over-reliance on a single indicator.

Secondly, adopt a combination of formative and summative evaluations. Formative evaluations focus on students' performance and progress during the learning process, such as classroom participation and project completion, while summative evaluations focus on final learning outcomes, such as theses and research achievements. Combining both provides a comprehensive assessment of students' learning effectiveness.

Thirdly, introduce a multi-stakeholder evaluation mechanism. Evaluations should include feedback from supervisors, peer reviews, self-assessments, and social evaluations to ensure the comprehensiveness and fairness of the evaluation results.

Additionally, establish a scientific and reasonable evaluation mechanism. Universities should develop scientific and reasonable evaluation standards and procedures to ensure fairness and transparency in evaluations, avoiding subjective bias and unfairness.

4.5. Construction and development of the teaching team

The construction and development of the teaching team are key to optimizing the training mode for postgraduate students in electronic information disciplines. The following measures should be taken.

Firstly, improve the research and teaching levels of teachers. Universities should enhance teachers' research and teaching capabilities through training, further education, and academic exchanges, ensuring they can provide high-quality education to students.

Secondly, incentivize teachers to participate in teaching reform and innovation. Universities should

implement incentive policies to encourage teachers to engage in teaching reform and innovation, stimulating their enthusiasm and creativity through teaching awards and research incentives.

Thirdly, strengthen teachers' practical experience and industry background. Universities should encourage teachers to participate in collaborative projects with enterprises, enhancing their practical experience and industry background to provide students with guidance on practical applications and industry needs.

Additionally, establish a teacher evaluation and feedback mechanism. Universities should regularly assess teachers' teaching effectiveness and research achievements through student feedback, peer reviews, and other methods to comprehensively understand their performance and promote continuous improvement.

In conclusion, optimizing the training mode for postgraduate students in electronic information disciplines under the "Break the Five Only" context requires efforts in multiple areas, including diversifying training objectives, reforming curricula and teaching methods, strengthening research training and practical components, diversifying and scientizing the evaluation system, and developing the teaching team. Implementing these measures will help improve the quality of postgraduate training in electronic information disciplines and promote the reform and development of higher education in China.

5. Conclusion

The pathways proposed in this study for optimizing the training mode for postgraduate students in electronic information disciplines under the "Break the Five Only" context include diversified training objectives, innovative curriculum settings and teaching methods, strengthened research training and practical components, diversified and scientific evaluation systems, and the construction and development of the teaching team. Implementing these strategies will help comprehensively enhance the overall qualities and innovative capabilities of postgraduate students, promoting the sustainable development of electronic information disciplines. Future research should further explore the issues and solutions encountered by different disciplines and types of universities in implementing the "Break the Five Only" policy, providing more specific guidance for graduate education reform.

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