Research on the Pathways to Enhance the Innovation and Practical Abilities of Postgraduate Students in Hainan's Free Trade Port Based on the OBE Concept

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Abstract: Innovative talent is an important force for China's economic driving development and social progress. To cultivate postgraduate students with strong innovation and practical abilities who meet the needs of the times, this study explores the theoretical background of talent demands in Hainan's Free Trade Port. in conjunction with the current situation of postgraduate education and training in this study Hainan universities. First, explains the necessity of the OBE educational concept for cultivating the innovation and practical abilities of postgraduate students in universities. Secondly, it clarifies the current state and challenges of cultivating innovation and practical abilities among postgraduate students in Hainan's universities. Finally, based on the OBE concept, this study explores the paths to enhance the innovative and practical abilities of postgraduate students in Hainan universities. This includes constructing a curriculum system oriented towards practical innovation with postgraduate students as the main body, building a chain of practice innovation ability cultivation with full participation from universities, enterprises, and social management, establishing and a collaborative platform for cultivating the innovative and practical abilities of postgraduate students. Additionally, relevant rationalization suggestions are provided.

Keywords: OBE Concept; Postgraduate Students; Innovation and Practical Abilities; Talent Cultivation; Enhancement Pathways

"Talent is the first resource and innovation is the first power", reflecting the important role of science and technology, talent and innovation in the development of modern society in the process of building "Chinese path to modernization". As an important component of the national innovation system, universities play a crucial role in cultivating innovative talent, enhancing innovation capabilities, serving economic and social promoting development, and the modernization of the national governance system and governance capabilities. Currently, China's higher education institutions generally focus more on theory than practice in the cultivation of postgraduate talent. Issues such as insufficient innovation awareness and weak practical skills exist, creating a gap between the requirements of society for talent cultivation. As a result, cultivating the practical innovation abilities of students has become one of the key tasks in higher education reform. Outcome-based education (OBE) is an

advanced educational philosophy that has emerged globally and is practiced in the major developed countries. It advocates a talent cultivation approach that is oriented toward abilities, goals, or needs. OBE maximizes students' learning enthusiasm and initiative, with a strong focus on cultivating their practical innovation abilities ^[1]. This educational philosophy is highly beneficial in addressing the pain points in postgraduate education in China. It helps clarify teaching goals, restructure teaching content, and transform teaching methods, thereby enhancing postgraduate students' innovation awareness and practical abilities, making it highly relevant. Particularly in the context of building Hainan's Free Trade Port, there is an

even more urgent need for innovative talent. Hainan's local universities, as the primary channels for cultivating and supplying high-level talent, must enhance their training of postgraduate students' innovation and practical abilities. Therefore, this study, based on the OBE concept, explores the pathways to enhance the innovation and practical abilities of postgraduate students in Hainan's Free Trade Port, which holds great practical significance.

2. Literature Review of OBE Concept

The concept of Outcome-Based Education (OBE) was proposed by American scholar Spady in 1981^[2], defining it as "explicitly focusing and organizing everything within the education system around the core content that all students should be able to successfully accomplish by the end of their learning." Spady (1994) further explained that OBE means first clarifying the essential content students need to master at the end of the learning process, and then organizing courses, teaching, and assessments accordingly. Davis pointed out that outcome-based education is a teaching method in which curriculum decisions are driven by the learning outcomes that students are expected to demonstrate upon course completion ^[3]. Chinese scholars have also explored the implications of the OBE concept for higher education in China and its application strategies from multiple perspectives. For instance, Shen Tianen & Shen Liran stated that the "outcomes" proposed by the OBE concept should encompass various aspects such as knowledge in 2018^[4], skills, emotions, and attitudes. Su Peng & Li Manli took general education courses in higher education as their research subject, applying the OBE framework and competency-based curriculum design principles in 2018, using backward design from training objectives, and implementing it in course development and teacher training ^[5]. In summary, this educational concept reflects a "student-centered" approach, aligns with societal demands for talent, emphasizes the observability, measurability, and applicability of student abilities, and features advantages such as clear goals, flexible processes, and comparable standards.

Overall, the application scenarios of the OBE concept in higher education teaching practice

and talent training have gained considerable recognition. In particular, concepts such as "student-centered" and "reverse design" have provided important inspiration for effectively combining teaching with the needs of cultivating innovative talents. However, it is regrettable that domestic scholars have not systematically explored the improvement of practical innovation capabilities of graduate students in Hainan universities based on the OBE education concept. Under the new situation of comprehensively building the Hainan Free Trade Port, new requirements and new standards have been put forward for the cultivation of innovative high-level talents in Hainan universities and universities, and it has also brought new opportunities. This study attempts to introduce the OBE concept and combine it with Hainan The construction of the free trade port places new demands on talent training, and explores a new paradigm for cultivating graduate students' innovative practical abilities in Hainan universities and universities.

3. The Current Situation and Challenges of Cultivating Innovative Practical Abilities of Graduate Students in Hainan Universities

The construction of Hainan Free Trade Port is an important decision made by China based on the overall international and domestic development, after in-depth research, overall consideration and scientific planning. In the process of Hainan Free Trade Port construction, it faces multiple impacts of domestic and foreign economic development, which puts forward new demands for talent training. In particular, the key to the training of local talents is to enhance the practical innovation ability of postgraduates in Hainan local universities and continuously supply innovative talents for the construction of Hainan Free Trade Port. In the context of the construction of Hainan Free Trade Port, for Hainan universities, it is urgent to combine theory with practice, and truly apply modern education concepts that are in line with the actual situation of Hainan Province and Hainan universities to the existing postgraduate training system, and apply advanced postgraduate training research results at home and abroad to the postgraduate training process of universities ^[6]. The OBE concept, as a learner-centered and learning

outcome-oriented teaching idea ^[7], just adapts to the changes in the demand for talent training in higher education in Hainan Free Trade Port.

3.1 The Teaching Content and Form of Innovative Practice are not Up to Date

The continuous improvement of the degree of digitalization under the background of the construction of Hainan Free Trade Port has put forward new demands for talent training, which requires not only traditional theoretical knowledge, but also solid information literacy and strong innovation ability. Information literacy mainly includes professional knowledge of new technologies such as artificial intelligence and big data processing, as well as multi-channel operation skills of various types of social and business platforms. At the same time, it should also have the innovation ability of marketing concept, service concept, product design, and business integration. Innovative talents with the above comprehensive capabilities can provide a new pattern, new concept, and new measures for the construction of Hainan Free Trade Port, make up for the shortcomings of Hainan Province's smart development, improve the poor information service functions, insufficient platform resource integration, and insufficient construction of intelligent facilities, and promote the transformation of Hainan Free Trade Port industry to a higher level and achieve stronger, greener and healthier development.

As the main unit for training talents, universities and universities undertake the main tasks of talent education and talent training. At present, the training of postgraduates in Hainan universities has not received sufficient attention and the existing training model can no longer meet the needs of employers. After most graduates enter the workplace, they need to relearn relevant theoretical and practical knowledge due to the obsolescence of theoretical knowledge and the lack of practical knowledge. Especially in recent years, since China proposed the national strategy of building a free trade port, the standards for recruiting talents by local enterprises have been continuously improved. The standards for recruiting postgraduates in universities are not only the traditional model of examining theoretical knowledge, but have been transformed into a talent model that

combines demand, theory, practice and innovative thinking. At present, the mismatch between the traditional training model of universities and the social demand for talents has affected the employment competitiveness of postgraduates. On the other hand, Hainan Free Trade Port has the advantage of gathering various elements of openness, and the demand of enterprises for high-level innovative talents has also forced these universities to cultivate the innovative practical ability of talents with a more open and international mentality. Introducing the OBE education concept in the process of postgraduate training in Hainan universities, it is necessary to focus on students and focus on cultivating postgraduates' independent thinking, courage to innovate, and proficiency in practice to meet the talent needs of Hainan Free Trade Port.

3.2 Unbalanced Scale, Quality and Structural Configuration of Innovative Talents

Talent is an important support for national and social development and is the first resource. However, Hainan is currently facing unreasonable talent scale and structure, low overall efficiency of the talent team, and talent shortages in multiple fields. Therefore, the shortage of high-end practical innovation talents will inevitably have a certain degree of impact on the adjustment and upgrading of Hainan Free Trade Port^[8].

The main manifestations of Hainan's shortage of innovative talents include the following aspects: First, the total number of talents is insufficient. In the process of promoting the construction of a free trade port, Hainan has a great demand for innovative talents, but the current total number of talents cannot meet the development needs: second, the talent structure needs to be optimized. Hainan's industrial development requires a large number of talents to support it, especially in high-tech industries and modern service industries. It is necessary to improve the talent structure and enhance the professional matching of talents; third, the talent policy and service system need to be further improved. Although Hainan has introduced a series of talent policies, the implementation of policies and service guarantees need to be strengthened to better attract and retain talents; finally, there is the challenge of introducing and retaining

international talents. Hainan faces fierce international competition in the introduction of international talents and needs to provide more incentives and guarantees to attract and retain international talents.

Therefore, Hainan's local universities need to make some achievements in the process of cultivating high-level talents such as graduate students. On the one hand, they should strengthen discipline construction, adjust and optimize the discipline structure according to Hainan's industrial development needs, and strengthen the construction of disciplines related to the construction of Hainan Free Trade Port; secondly, they should actively carrv out industry-university-research cooperation and cooperate with enterprises; establish internship and training bases to allow students to participate in actual projects to improve their practical and innovative abilities; thirdly, they should encourage and support teachers and students to participate in scientific research projects, strengthen the cultivation of scientific research and innovation capabilities, and promote the transformation of scientific research results; at the same time, they should also provide new entrepreneurship education for graduate students, add graduate innovation and entrepreneurship courses, hold innovation and entrepreneurship competitions, stimulate students' entrepreneurial enthusiasm, and cultivate their innovative spirit and entrepreneurial ability.

3.3 The Cultivation of Practical Innovation Capabilities is out of Touch with Industry Needs

The core of Hainan Free Trade Port's talent development strategy in the future is to build a diversified talent team covering business professional and technical. operations. high-skilled, social services, and urban and rural practical skills, and further deepen and implement the talent development plan according to the specific needs of Hainan's and social development. economic Professional skills and professional qualities are the basis for improving personal innovation ability, work efficiency and social service capabilities.

For a long time, there have been some problems in the cultivation of graduate students' practical innovation ability in higher education institutions. The main reason is the lack of effective education concepts and collaborative education training models. If these problems are not solved in a timely manner, it will be detrimental to the cultivation of graduate students' practical innovation ability. At present, graduate education mainly relies on traditional teaching methods such as classroom theory teaching, case sharing, group reports, and literature reading in terms of professional skills and professional literacy. However, in the context of the construction of Hainan Free Trade Port, graduate education needs to go beyond the traditional model and cultivate the comprehensive ability to understand professional skills, innovative thinking, practical experience and theoretical knowledge in order to better adapt to social needs.

Currently, there is a significant gap between the supply side of talent training in universities and the industry's demand side for talents with strong practical innovation capabilities. Graduates generally lack systematic and professional industrial work capabilities and practical experience. Although the practical activities provided by universities and universities can make up for the lack of practical innovation ability of graduate students to a certain extent, due to the limitations and singleness of the content of practical activities, they cannot meet the needs of graduate students for a comprehensive understanding of the current status of industrial development and future trends, resulting in There is a disconnect between the cultivation of practical innovation capabilities and the actual needs of the industry.

4. Anchoring of the Strategy for Cultivating Graduate Students' Innovative Practical Ability Based on the OBE Concept

The OBE concept proposed by Spady needs to four basic principles grasp in the implementation process: the first principle is "clear focus", which means that teaching should focus on helping learners develop knowledge, skills and attitudes so that they can eventually achieve important results; the second principle is "expanding opportunities", that is, striving to provide opportunities for all learners so that students can learn important things; the third principle is "having high expectations", which aims to emphasize that

by establishing high-level and challenging standards, students are encouraged to accept more challenges and explore learning content and problems in depth; the fourth principle is "reverse design", which emphasizes that teaching decisions should be reversely designed through "expected end results" and directly linked to the important results that students will eventually achieve. Based on the above principles, this study discusses the innovative practice ability training strategies of graduate students in Hainan universities as follows:

4.1 Focus on Clarity and Enhance Practical Innovation Capabilities

In the process of postgraduate training, teachers need to clarify teaching objectives and ensure that course content and teaching activities are centered around improving students' practical and innovative abilities. This means that course design should focus on key skills and knowledge that students need to master ^[9], such as critical thinking, problem solving, and teamwork. Through clear learning objectives, students can improve their practical and innovative abilities in a targeted manner.

4.2 Hold on to Hope and Encourage Exploration of Real-World Issues

Teachers should encourage students to explore and research real-world problems to stimulate their interest and motivation in learning. By setting challenging research projects, students can exercise their innovative thinking and practical skills in the process of solving practical problems. This positive spirit of exploration is the key to cultivating innovative talents.

4.3 Expand Opportunities and Build a Collaborative Education Platform

In order to provide more practical opportunities, universities and universities should establish partnerships with enterprises and communities to jointly build a collaborative education platform. Such a platform can provide students with opportunities for internships, practical training and participation in actual projects, allowing them to learn and apply knowledge in a real environment. Through working this cross-border cooperation, students can be exposed to a wider range of resources and

perspectives, thereby enhancing their practical innovation capabilities.

4.4 Reverse Design, Centered on Learning Outcomes

The reverse design principle requires teachers to plan courses and teaching activities in reverse based on the expected learning outcomes. This approach ensures that the teaching content and assessment criteria are closely related to students' learning outcomes. In this way, students can clearly understand their learning progress and goals, and educators can also adjust teaching strategies in a timely manner based on students' feedback and learning outcomes.

In summary, the OBE concept can provide effective guidance for graduate training. By focusing on clear learning goals, encouraging exploration of real problems, expanding practical opportunities and implementing reverse design, the innovative practical ability of graduate students can be effectively improved. As far as Hainan universities are concerned, they can cultivate high-quality talents who can meet the needs of the construction of the free trade port and adapt to future challenges.

5. Pathways to Enhance the Practical Innovation Ability of Postgraduate Students in Hainan Universities

Against the backdrop of Hainan Free Trade Port construction, local universities in Hainan are tasked with cultivating innovative and practical talents to meet regional development needs. Therefore, Hainan universities should be guided by the Outcome-Based Education (OBE) concept, with the goal of cultivating postgraduates with strong critical thinking, skills, and innovative practical spirit. Achieving this goal will foster synergies between talent and regional development, driving the continuous advancement of Hainan Free Trade Port. Specifically, postgraduate education in Hainan universities should be guided by the talent needs of the Free Trade Port. focus on industrial development, emphasize practical skills training, and innovate in cultivation models. Under this framework, in order to cultivate the practical innovation ability of graduate students in Hainan universities, this study explores the improvement constructs path and an

improvement path map (the figure 1):

5.1 Constructing a Curriculum System with Postgraduates as the Main Body and Oriented Towards Practice and Innovation

In the postgraduate education and training work, Hainan universities must re-examine the talent needs of the free trade port construction, adjust the overall professional course structure based on this demand, and innovate the overall course content. Based on the OBE "student-centered" concept, in the process of cultivating postgraduate practical innovation ability, we must firmly follow the principle of the training model with postgraduates as the main body and tutors as the guide. By integrating and optimizing the course content, while adopting diversified teaching methods, actively adopting teaching models such as case teaching. simulation experiments, and project-driven, and introducing practical teaching. postgraduates explore can knowledge and cultivate abilities in their studies, ensuring that postgraduate courses can continuously cultivate students' innovative thinking and practical ability.



Figure 1. Path Map for Enhancing the Innovative and Practical Abilities of Graduate Students in Universities in Hainan Free Trade Port Based on the OBE Concept (Source: Compiled by this Study)

Case teaching can help students understand the application of theoretical knowledge in practical situations by analyzing real-world cases. Case teaching can stimulate students' critical thinking and improve their ability to analyze and solve problems, thereby helping students improve their ability to analyze and solve problems, and then cultivate students' innovative ability. Simulation experiment teaching is conducive to breaking the drawbacks of traditional classrooms that only focus on imparting theoretical knowledge. Graduate students can understand and master the specific practical operation process in a laboratory simulation environment, providing students with a platform to participate in practice, realize the transition from theory to practice, and improve students' practical operation ability ^[10]. The project-driven teaching model encourages students to learn and apply knowledge in completing projects with practical application value. This model emphasizes students' initiative and teamwork ability, enabling students to exercise innovative thinking and practical skills in the process of project planning, execution and

evaluation. Practical teaching methods, such as internships, practical training and participation in research projects, enable students to directly participate in real work environments. This learning method helps students understand the current situation of the industry and cultivate their professional qualities and work skills.

5.2 Create an Evaluation Mechanism for Cultivating Graduate Students' Innovative Practical Ability that Emphasizes Both Process and Results

Under the OBE concept, the optimization of the evaluation mechanism is a key link in improving the innovative and practical ability of graduate students. Traditional education evaluation often focuses on the final results and ignores the efforts and growth in the learning process. In order to more comprehensively evaluate students' innovation and practical ability, Hainan universities should build an evaluation system that focuses on both results and processes.

The evaluation system for graduate training should be diversified, including not only the mastery of theoretical knowledge, but also multiple dimensions such as skill application, innovative thinking, teamwork, and social responsibility. For example. students' performance and progress in actual operations can be evaluated through practice reports, achievements. innovative and team performance. At the same time, regular self-reflection and peer evaluation are also indispensable, which can help students better understand themselves and clarify the direction of improvement. In addition, a continuous feedback mechanism is essential for students' learning and growth. Teachers should provide timely and specific feedback based on students' performance, helping them recognize their strengths and weaknesses, so as to learn and improve more targeted, This formative evaluation can not only motivate students to actively participate in the learning process, but also promote their self-driven learning attitude, laying a solid foundation for their future career.

5.3 Establishing a Comprehensive Training Chain for Graduate Students' Innovative Practical Abilities with the full Participation of Universities, Enterprises, and Social Management Parties

Higher education must achieve the integration between industry and teaching, and through the reasonable docking of resources, enable better integration between social management parties, enterprises, and universities and universities, so as to expand the integration of high-quality educational resources and strengthen the cultivation of professional skills of talents [11-12]. In the process of building Hainan Free Trade Port, the improvement of graduate students' practical innovation ability is connected with the actual demand of Hainan Free Trade Port for talents. Therefore, in the process of talent training, local universities in Hainan should only strengthen discipline and professional construction around related industries, so as to keep consistent with the construction of professional talents required by the development of related industries [8].

Based on the OBE concept, a practical innovation ability training chain with full participation of universities social management parties and enterprises can be established to build an ecosystem of multi-party collaboration and resource sharing. First, universities and universities should cooperate with the enterprises and social management parties to formulate talent training programs and curriculum systems that meet market needs to ensure that talent training is synchronized with social needs; at the same time, universities and universities should also encourage graduate students to participate in scientific research projects, and through the practice of scientific research projects, improve students' innovation ability and ability to solve complex problems. Secondly, enterprises can provide internship and training platforms for graduate students to exercise in a real working environment; at the same time, technical experts and managers of enterprises can participate in course design and teaching, and impart cutting-edge industry knowledge and practical experience to students (Jin Shou wen, Xu Wei giang, Gao Xing jun, et al, 2022). Third, the social administrators can create a good atmosphere for collaborative education through policy guidance and financial support, such as setting up special funds to support innovative projects of university-enterprise cooperation and holding graduate student special innovation practice competitions. At the same time, the social administrators should also continuously improve relevant rules and regulations to provide resource integration and institutional guarantees for the improvement of graduate students' practice and innovation capabilities ^[13]. In addition, the social management parties can also build a tripartite shared information platform to broaden the channels for talent output and acceptance ^[14]. Finally, a regular tripartite evaluation and feedback mechanism should be established to evaluate the effectiveness of the joint training chain, identify problems in a timely manner and make adjustments.

6. Conclusion

The construction of Hainan Free Trade Port has not only had a profound impact on the economic and social development of Hainan Province but also posed new challenges and requirements for talent cultivation in local universities. Hainan universities must fully recognize the importance of the construction of the Hainan Free Trade Port, prioritize the exploration of cultivating postgraduate students' innovative and practical abilities, and continuously improve and innovate talent cultivation models in line with the overall requirements of building an educationally strong nation in the new era. In the process of postgraduate education, Hainan universities need to carefully consider the shift in talent demand brought by the Free Trade Port guided construction, and by the Outcome-Based Education (OBE) concept, actively explore new pathways for cultivating postgraduate talent under this context. continuously enhancing their innovation, practical, and research capabilities, which holds great contemporary value and practical significance for promoting social and economic development in Hainan.

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