

The Internationalization of Japan's Agricultural Master's Talent Training and Its Enlightenment for China

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Abstract: Internationalization of education is the best choice to adapt to the development of the times and enhance the competitiveness of national talents, while the internationalization of agricultural talent cultivation is a new trend in the development of education modernization. Exploring the background and motivation behind the internationalization of education in Japan, and sorting out its development process, combined with the actual case of agricultural master's training at Kyoto University in Japan, this study provides reference and inspiration for the internationalization of Chinese agricultural master's talent cultivation from the aspects of selection requirements, training objectives, curriculum design, and teaching models. It is pointed out that multiple selection channels should be established to relax the requirements for initial enrollment; Setting international training goals and highlighting the characteristics of agronomy majors; Building an international curriculum system and building a platform for external exchange; Emphasizing the internationalization of practical education and learning innovative teaching models to promote the international cultivation of Chinese agricultural master's talents has laid a solid foundation for international agricultural talents in the competition of the knowledge economy era in China.

Keywords: Japan; Master of Agriculture; Talent cultivation; internationalization.

1. Question Raising

The globalization trend is driving the arrival of the knowledge economy era with the help of economy, culture, and labor. The demand for internationalization of education in various countries around the world is becoming increasingly strong, leading to the emergence of high-level intellectuals and international talents with cross-cultural backgrounds, making the development of internationalization of education an inevitable trend. Professor Jane Knight, a renowned scholar in Canada who studies the internationalization of education, emphasized in his book "Higher Education in the Rapids: Internationalization Transformation and Development" that universities need to clarify their internationalization strategic goals and take practical actions[1]. Japan has long been constrained by geographical location and natural resources, and with the increasingly severe aging problem, the labor market has severely shrunk, the industrial structure has become hollow, and many factors have combined to increase Japan's demand for domestic agricultural talents. Various signs indicate that the internationalization of education is not only a product of globalization, but also an inevitable trend in the development of education in various countries. Its essence is to effectively utilize global educational resources to optimize domestic education, cultivate international high-quality talents, and promote social, cultural, and economic development in China and even the world.

At present, academic research on the internationalization of education mainly focuses on four aspects: firstly, the connotation of education internationalization and the nationalization of various levels and types of education. There is currently no consensus on the definition and connotation of education internationalization. Scholars have endowed it with

different connotations and values based on their own historical background. And scholars have gradually derived from the singular research on the internationalization of higher education[2]from the diversified research on the internationalization of vocational education[3], the nationalization of martial arts education [4], and the nationalization of public health education[5]. Secondly, research on the motivations and influencing factors of educational internationalization. Scholars have conducted research on the motivations for educational internationalization in countries such as Australia [6], the United States [7], Japan [8], Russia [9], South Korea [10], Germany [11], mainly from political, economic, social, cultural and other aspects. Some scholars also believe that the biggest motivation for educational internationalization is driven by interests. Tracing back to the source, the motivation for educational internationalization is not only the natural trend of academic and cultural development, but also driven by interests and the influence of national development needs. Thirdly, research on strategies and paths for educational internationalization. Researchers have conducted in-depth research on the internationalization of education and proposed specific measures to improve policies, regulations, and practical mechanisms at both macro and micro levels[12]. Some scholars have also proposed, based on the background of the times, to establish a development concept that balances globalization and autonomy, adopt institutional arrangements that are suitable for improving top-level design and grassroots exploration[13], and promote the organic integration of government entities and diversified financing entities[14]. The path of educational internationalization can be considered from a philosophical perspective. Firstly, it is necessary to grasp the development laws of educational internationalization; Secondly, we should view the

internationalization of education from a developmental perspective and focus on fully leveraging the advantages of information network technology; Finally, we need to approach the issue of international education through a connected perspective, emphasizing the full utilization of global educational resources to promote the development of education in our country[15].

In summary, there are abundant research perspectives and fields on the internationalization of education, but there is relatively little basic theoretical research and micro empirical research on the internationalization of education. This study will align with this sparse research field and take Kyoto University in Japan as an example to sort out the process and practice of international cultivation of agricultural master's talents in Japan, with the aim of proposing inspiration and reference for China from Japan's measures for international cultivation of agricultural master's talents.

2. The Development Course of Internationalization of Japanese Higher Education

2.1. The embryonic stage of Japanese higher education internationalization development ideas (1868-1945)

In the 1860s, in order to reform the feudal system and promote the development of Japanese capitalism, the Meiji government launched a comprehensive westernization and modernization reform movement, namely the Meiji Restoration. And proposed three major reform policies: "enriching the country and strengthening the military", "promoting industrial development", and "civilized civilization". Among them, "civilized civilization" advocates to absorb the advanced culture, education, science and technology of Western capitalist countries, reform the education system, and establish various schools to vigorously cultivate talents. At this stage, in order to learn from the advanced experience of European and American countries, Japan attaches great importance to sending international students abroad and hiring foreign experts and scholars from within, becoming the beginning of the internationalization development of Japan's higher education. Data shows that between 1869-1870, Japan sent 174 international students abroad[16]. In 1870, the Meiji government issued the "Regulations for Overseas Students", which clearly stated that a large number of international students should be sent to European countries to study their systems, academia, and skills, in order to help Japan embark on the path of civilization and achieve national prosperity and strength. From then on, the number of Japanese students sent abroad increased year by year, reaching approximately 400 by 1873. In addition to sending international students, the Meiji government also hires over 100 foreign experts and scholars to give lectures in Japan every year with high salaries. Between 1868-1912, the Meiji government employed over 3000 foreign experts[17]. Among the early 39 professors at the University of Tokyo, founded in 1877, foreign professors accounted for about half. The "export and import" in this stage has laid a solid foundation for the internationalization of Japanese higher education.

2.2. The "Introduction Type" Development Stage of Internationalization of Japanese Higher Education (1945-1970)

During the two World Wars, Japan focused on militaristic education, and the internationalization of its higher education remained stagnant. It was not until the end of World War II that Japan entered a period of recovery and reconstruction that the internationalization of higher education in Japan was able to resume. At this stage, Japan adheres to the traditional concept of "introducing ideas from abroad" and is committed to learning the knowledge and experience of Western countries, providing services for its economic construction and development. In 1956, the Central Education Review Conference published a consultation report on promoting international exchanges in education, academia, and culture, proposing to vigorously promote international exchanges among international students and researchers to enhance international understanding. This provides an important decision-making basis for Japan to formulate specific policies for the internationalization of education. In 1968, the official Japanese Economic White Paper first proposed the concept of "internationalization". At this stage, the internationalization of Japanese higher education has gradually formed an international education organizational structure. The main performance is as follows: joined UNESCO in 1951; In 1957, the International Education Association and others were established. The second is to resume international exchange activities between teachers and students. The main performance is as follows: the system of sending university faculty to study abroad was restored in 1950; In 1952, a special scholarship was established to support foreign students; In 1954, a national fee system for foreign students was established and 23 international students were accepted; Established the International Student Association in 1958; In 1968, a system for selecting international students was established. This series of "introduction oriented" measures have made positive contributions to Japan's full play of the role of international students and promoting its economic construction and development.

2.3. The "Output oriented" Development Stage of Internationalization of Japanese Higher Education (1970-1990)

In 1974, the Central Education Review Conference issued a consultation report on "International Exchange in Education, Academia, and Culture", requesting Japan to improve its international exchange system, expand international exchanges between teachers and students, and begin to consider cultivating Japanese people who are needed by the international community as a domestic education topic. In 1980, Japan's gross domestic product accounted for 10% of the world's total, ranking among the highly developed countries in the world economy. With the growth of economic strength and the improvement of international status, Japan's awareness of moving from an "economic power" to a "political power" is constantly increasing, and the demand for higher education has also increased sharply. In 1983, Japan proposed the goal of "admitting 100000 international students". In 1985, the "First Consultation Report on Education Reform" submitted by the Provisional Education Review Committee proposed the internationalization oriented education concept, emphasizing that in order to adapt to the requirements of the internationalization era, educational

institutions should shift their talent cultivation goals from a closed state of only serving their own country to cultivating and exporting useful Japanese talents for the world. At this point, the internationalization of higher education has truly become an important issue for Japanese universities. The temporary education review meeting also proposed specific talent cultivation goals, which are "understanding technology, proficient in foreign languages, proficient in business management, possessing strong international awareness, proficient in international trade, finance, and legal knowledge, and able to adapt to working and living environments abroad". At this stage, the internationalization of Japanese higher education broke through the traditional concept of studying abroad, advocating for equal participation of domestic talents in the international society, and widely absorbing foreign students to export their own culture. Therefore, the internationalization development of Japanese higher education in this stage shows a characteristic of emphasizing output.

2.4. The "Accelerated" Development Stage of Internationalization of Japanese Higher Education (Since 1990)

After 1990, due to a shift in consumer attitudes and a prolonged economic downturn, the problems of fewer children and aging population in Japanese society began to emerge, and the number of students in schools, especially in higher education, decreased sharply. In this context, in 2008, Japan proposed the "300000 international student program". And the restrictions on international students have been relaxed in terms of policies and regulations, and reforms and optimizations have been carried out in terms of curriculum design, cultivation models, and per student funding. At the same time, in response to the continuous downward trend of Japanese universities in the world university rankings. The Japanese government introduced the "Global Top University Creation Plan" in 2014, which effectively promoted the reform and internationalization of Japan's higher education, mainly manifested in three aspects: first, strengthened cooperation agreements between governments. Japan has signed the "Asia Pacific University Mobility Plan" in cooperation with countries such as South Korea, Thailand, and Australia, accelerating the internationalization of education in the Asia Pacific region. Secondly, cooperation between universities has been strengthened. Many universities in Japan have continuously deepened exchanges between teachers and students in domestic and foreign universities by exploring the establishment of overseas branches, implementing joint training models, or emphasizing the use of projects as carriers. Thirdly, the talent cultivation system of Japanese universities has a clear trend towards internationalization. Japan not only attaches increasing importance to English teaching, but also offers courses with international content such as international economics and trade, European history, etc. In order to encourage Japanese students to study abroad, short-term visits within 3 months, summer schools, etc., and financial support are provided. Scholarship support is also provided for long-term overseas assignment projects of more than 1 year and short-term assignment projects of 3 months to 1 year. Expand the number of dual degree programs or joint training programs to increase opportunities for cross-border educational exchanges.

3. The Internationalization of Cultivating Agricultural Master's Talents in Japan: Taking Kyoto University as an Example

The School of Agriculture at Kyoto University was established in 1923, and the Graduate School of Agriculture was established in 1953. Since its establishment, the School of Agriculture and Graduate School of Agriculture at Kyoto University have made significant contributions to the development of international agricultural science by achieving numerous innovative research results and cultivating a large number of outstanding agricultural talents in the field of agriculture. In the face of the severe situation of food security and the transformation and development of global agricultural modernization, it is of great significance to establish a talent training system in the agricultural field based on good international cooperation relations. In response, the Graduate School of Agriculture at Kyoto University continues to deepen its cooperation with overseas universities, exploring and implementing international exchange and cooperation strategies, signing two-way exchange agreements, and promoting joint research on international agricultural projects and joint cultivation of agricultural master's talents. At the same time, relevant courses can be offered to obtain agricultural master's degrees through English language, expanding the recruitment boundaries for international agricultural master's students. In addition, Kyoto University also participates in the "Global Survival Graduate School Cooperation Program", providing courses related to ensuring food security, aiming to cultivate human resources that can cross national borders to address the diverse issues facing the world.

3.1. Selection requirements

The entrance examination for graduate schools at Kyoto University varies depending on the admission period and examination schedule for each research subject. The Agricultural Research Institute of Kyoto University only needs to meet the following conditions during enrollment selection: firstly, graduates from various universities in Japan. Secondly, those who have completed 16 years of school education courses abroad. Thirdly, those who have been recognized by the graduate school to have the same or higher academic qualifications as those who have graduated from university and are over the age of 22 [18]. For the selection of international students, in principle, the same selection method as the Japanese is adopted to determine the final admission of scholars. However, four academic departments, including the Ministry of Agriculture, implement a special selection and examination system for students studying abroad at their own expense. These self-funded foreign students must first participate in the Japan Study Abroad Examination organized by the Japanese Student Support Agency and meet the TOEFL requirements before conducting interviews and other stages. And the interview process occupies an extremely important position, even if students do not have high written test scores, excellent interview results may still qualify for admission. From this, it is not difficult to see that the selection of agricultural master's degrees in Japanese universities is highly autonomous, and there is no recruitment form similar to the national unified master's degree examination in China. This also indicates that Japan's first step in choosing students is not to pursue their written test scores, but rather to value whether

Data source: The official website of the Graduate School of Agriculture, Kyoto University

3.4. Teaching model

The Graduate School of Agriculture at Kyoto University has put in great effort in teaching design to achieve the goal of "education". Specifically, firstly, each major will organize lectures, exercises, and experiments to ensure that students acquire relevant professional knowledge and academic abilities. In terms of internationalization, the Agricultural Graduate Department also encourages students to actively participate in lectures on common graduate subjects offered by the International College of Higher Education, learning knowledge and skills beyond their majors. Secondly, special emphasis is placed on each student actively engaging in problem research and writing papers through active dialogue with teachers, in order to train their logical thinking, cultivate their ability to explore and solve problems, and help them master advanced knowledge and experimental techniques in multiple fields, as well as possess a sense of scientific ethics and research responsibility. Finally, support students in showcasing their research results through academic conferences and other means, and cultivate their speaking and communication skills. At the same time, in order to promote international exchange among agricultural graduate schools, Kyoto University supports its students to study and research together with foreign researchers, and invites foreign visiting scholars to share research results. The refined education and teaching of Kyoto University has provided a large number of high-level agricultural talents for our country and other countries.

4. The Internationalization of Agricultural Master's Talent Training in Japan and Its Implications for China

4.1. Opening multiple selection channels and relaxing the requirements for initial enrollment

For a long time, China has been limited by the unified examination system, and the subjects, time, score lines, and results of the exams are almost completely unified. Although China's graduate selection system implements a combination of national unified written exams for preliminary exams and independent interviews for secondary schools, the addition of a secondary interview section has a relatively small impact on the overall admission results. This also leads to a severe lack of autonomy in enrollment among major universities, which limits the channels for recruiting students. Therefore, for the selection of agricultural master's talents, firstly, China should implement a multi-channel selection system and relax admission requirements. The state and government should fully play a leading role in guiding eligible and equally educated talents to enter universities for further training and learning. The application for agricultural master's degree should not be limited to graduates with higher education qualifications. Talents who meet the academic qualifications or have made outstanding contributions should be granted the application qualification. Secondly, reform the enrollment system and fully leverage the autonomy of universities in enrollment. In terms of postgraduate admission assessment,

the content of the exam can be independently set by universities based on training objectives, and talents with scientific research capabilities and suitable for agricultural related research can be selected through scientific methods.

4.2. Setting international training goals and highlighting the characteristics of agronomy majors

The goal of cultivating agricultural master's talents in China is to serve the "three rural" areas and promote rural revitalization. Specifically, it mainly includes cultivating applied, innovative, and composite high-level talents for agricultural technology promotion and research institutions, rural development and agricultural education enterprises, institutions, and management departments. However, in the process of cultivation, the emphasis on students' subjective will is relatively low, and the setting of international cultivation goals is too exaggerated or lacking. The rationality of setting internationalization goals for agricultural master's education is positively correlated with the effectiveness of achieving internationalization of agricultural master's education. In the process of internationalization of education in Japan, it advocates that various universities adopt a tailored approach to their own internationalization goals, and has achieved good development results. China should also encourage universities to explore unique internationalization paths in the process of internationalizing the cultivation of agricultural master's talents. Firstly, China needs to avoid blindly following the crowd. "Double first-class" universities can focus on improving their international status, while ordinary agricultural master's colleges can focus on the quality of cultivating students' international perspectives. Based on comprehensive considerations such as global agricultural development changes, China's agricultural production needs, and the educational philosophy of each university, training objectives are set, and more agricultural masters are encouraged to receive international education through the internationalization of curriculum, teaching staff, and campus culture, thereby driving the internationalization development of universities and regions.

4.3. Building an international curriculum system and building a platform for external exchange

In terms of the curriculum of China's Agricultural Master's degree, it mainly includes four sections: mandatory courses, elective courses, supplementary courses, and professional practice courses. Most of the required basic theoretical courses follow the core courses required for undergraduate studies in the same field, lacking understanding and understanding of domestic and foreign research fields. Therefore, it is possible to learn from Japan's agricultural master's talent cultivation and build an international curriculum system. Firstly, reform the existing curriculum system based on the setting of international training goals, appropriately incorporate international courses, attract international outstanding teachers and talents to teach in China, introduce high-quality and high-level international courses, and optimize the curriculum system of the Agricultural Master's degree. Secondly, establish an external exchange platform, actively carry out exchanges and cooperation with foreign research institutions, universities,

etc. in professional fields, achieve resource sharing, and expand students' international perspectives. Led by the state and government, we will bridge the gap between universities and stimulate the vitality of agricultural graduate schools in various Chinese universities through academic exchange and interaction, further strengthening the internationalization level of higher education in China. In addition, there is an urgent need to continuously improve the informationization level of China's agricultural master's education and teaching. By utilizing information network technology to build an international exchange platform and regularly organizing students to engage in online communication.

4.4. Emphasizing the internationalization of practical education and learning innovative teaching models

The development of agricultural education in Japan largely depends on the implementation of practical education in Japan, which enables students to have high practical efficiency and participation enthusiasm. On the other hand, in the practical education of China's agricultural master's degree, students not only lack enthusiasm and many practical aspects are formalistic, but also face problems such as mismatched majors and employment difficulties. It is not difficult to see that a good teaching model is an important way to cultivate high-quality students, and China can learn from the Japanese agricultural master's talent cultivation teaching model. Firstly, efforts should be made to internationalize the curriculum, enrich the curriculum content of agricultural majors, actively innovate teaching models, and enhance the cross-cultural practical ability of China's Agricultural Master's through promoting practical project cooperation. Secondly, increase the proportion of practical courses and encourage Master of Agriculture to actively participate in academic conferences and exchanges, to exercise their international communication and reporting abilities. Finally, the government should broaden the employment channels for agricultural master's degrees in agricultural related industries, increase job opportunities, and promote the close integration of education and practical production.

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