

Research and Implementation of "Personalized Orientation" Talent Training Program Based on Geely Automobile

Yu Xie^{1, a}

¹School of of Intelligent Manufacturing, Wenzhou Polytechnic, Wenzhou, Zhejiang, 325035, China

^aMailbox: hqx_wzvtc@163.com

Abstract: With the application of new intelligent manufacturing technology to transform the specialty, build a personalized talent training mode deeply integrated into innovation education. Build a curriculum system highly integrated with the professional ability development needs of core posts related to the pillar industries such as the vehicle factory and power base of Zhejiang Geely Holding Group Co., Ltd., focusing on the improvement of innovation ability and the application of new technologies, and establish a trinity practical teaching system of "training, research and development, innovation". Strengthen the construction of high-quality teaching resources, improve the application level of digital teaching resources, and improve the level of the "double teachers and double abilities" teacher team. Deepen the integration of production and education, greatly improve the quantity and quality of scientific research and enterprise technological transformation, and significantly expand the depth and breadth of school enterprise cooperation.

Keywords: Talent training mode, Professional ability development, Time teaching system, School enterprise cooperation.

1. Research Background

Wenzhou is an important equipment manufacturing base in China, with the advantages of three pillar industries, namely, electrical, automobile and motorcycle parts and pump and valve, which is bound to drive key basic supporting industries, including mould, fastener manufacturing and automatic production line, to form a good industrial chain with obvious characteristics, industrial agglomeration and complete supporting. Therefore, in recent years, the Institute of Intelligent Manufacturing of our university has taken mechanical design and manufacturing, electrical automation technology as its dual core, mould design and manufacturing as its foundation, traction numerical control technology and industrial robot technology as its wings, forming an advanced equipment manufacturing specialty group with distinct post correspondence, prominent technical focus and integrated development of skills. It fully meets the needs of Zhejiang Geely Holding Group Co., Ltd. for the training of directional talents in vehicle engineering, machinery, automation and other specialties.

2. Research Objectives

2.1. Overall objective

The directional talent training project meets the needs of Zhejiang Geely Holding Group Co., Ltd. for the promotion and development of talents in the global factory layout, especially for the supplement of technical and skilled talents in Zhejiang, and constructs a personalized talent training mode that is deeply integrated into innovative education by applying and transforming new technologies of intelligent manufacturing. To build a curriculum system that is highly integrated with the professional ability development needs of core posts related to pillar industries such as vehicle factories and power bases of Zhejiang Geely Holding Group Co., Ltd., with the improvement of innovation ability as the main line

and the application of new technologies as the focus, and to establish a three-in-one practical teaching system of "practice-research-innovation". Strengthen the construction of high-quality teaching resources, improve the application level of digital teaching resources, and enhance the level of "double-qualified" teachers. Deepening integrate the resources of enterprises with vocational schools and universities, greatly improving the quantity and quality of scientific research and technological transformation of enterprises, and significantly expanding the depth and breadth of school-enterprise cooperation.

2.2. Specific objectives

(1) Deepening the collaborative education of integrate the resources of enterprises with vocational schools and universities and innovating the training mode of directional talents of professional groups

Under the background of "employment education", the advanced equipment manufacturing specialty group carries out the reform of personnel training mode and curriculum system according to the individualized needs of enterprises. It is a new practical teaching mode which integrates professional skills training, guiding academic research and implementing innovative education. Docking with Zhejiang Geely Holding Group Co., Ltd. 'S vehicle factory, power base and other pillar industries and strategic emerging industries such as high-end equipment, strengthening students' professional theoretical knowledge, enhancing theoretical inquiry ability, enhancing students'awareness of "mechanical manufacturing" and "automated intelligent manufacturing" of vehicles, and enabling students to have a strong sense of occupation. To cultivate innovative design talents of intelligent equipment and intelligent manufacturing production line with solid theoretical foundation, strong research practice and innovation ability, and to meet the development needs of Zhejiang Geely Holding Group Co., Ltd.

Through "project + team + tutor" to promote personalized

talent training, improve the "order class" student rolling selection and small class training, through the pilot class to implement the whole process of "school theory tutor" and "enterprise practice tutor" double tutorial system. Taking the real case and implementation project of Zhejiang Geely Holding Group Co., Ltd. as the carrier, we have experienced many links of continuous and in-depth classroom teaching of "hands-on", "mouth-moving" and "brain-moving" integration of theory and practice, supplemented by after-school professional skills training of "two early and one activity", relying on the R & D platform inside and outside the school and the innovative team of student studios, to cultivate technology. Promote students' technical application ability to solve practical problems in enterprises. Through a series of teaching reforms, the "personalized orientation" talent training mode based on integrate the resources of enterprises with vocational schools and universities is constructed, and the relevant courses are offered in the professional group talent training program to discuss with Zhejiang Geely Holding Group Co., Ltd.

(2) Build a virtual simulation service platform to lead the intelligent upgrading of the vehicle equipment industry

It will focus on building a virtual simulation training base for vehicles, engage in research and development of intelligent manufacturing machinery and equipment and personnel training, and undertake the tasks of teaching training, technical training, technical research and development and professional quality training. The base integrates the four functions of virtual simulation training of intelligent manufacturing and construction technology, co-construction of curriculum resources, digital model design and VR talent training, so as to meet the early needs of Zhejiang Geely Holding Group Co., Ltd. for directional talent training and create a school-enterprise co-construction cultural system of "system retention, treatment retention and emotional retention".

(3) Pay attention to both introduction and classified development, and build a "double-qualified and double-capable" teaching team.

Relying on the strength of the R & D institutions headed by the Southern Zhejiang Light Industry Equipment Intelligent Technology Collaborative Innovation Center and Zhejiang Light Industry Equipment Intelligent Manufacturing Technology Engineering Research Center, the professional group has joined forces with Zhejiang Geely Holding Group Co., Ltd. to form a complete supply chain of technology and talents. We will promote the construction of a multi-open, deep integration and sustainable development collaborative innovation system focusing on vehicle intelligent manufacturing, which integrates technology research and development, application and promotion, personnel training and industry services. According to the Guidelines for the Construction of Modern Industrial Colleges issued by the Ministry of Education in conjunction with various departments, we strive to upgrade to high-quality cooperative colleges after three years of infrastructure construction and jointly build industrial development colleges.

(4) Pay equal attention to professional quality and skill training, and improve the quality of personnel training

To cultivate high-standard and high-quality skilled talents in the automotive industry with "national feelings, professionalism, innovative thinking, humanistic accomplishment and social responsibility" that meet the requirements of the industry.

3. Construction of Training Mode and Curriculum System

3.1. Construct the talent training mode of "personalized orientation" guided by integrate the resources of enterprises with vocational schools and universities.

Professional groups give full play to the advantages of vocational education alliance linked by intelligent manufacturing, face the talent demand of core positions in pillar industries such as vehicle factories and power bases of Zhejiang Geely Holding Group Co., Ltd., conduct extensive research and accurately locate the training objectives of technical talents, and take the training of directional talents for the application of intelligent manufacturing technology as the main task. This mode organically unifies the training objectives of vocational education talents with the talent needs of industry enterprises, docking courses with enterprise posts, teaching process with enterprise production process, educating people through win-win cooperation between schools and enterprises, training innovative cooperation mechanism by orders, training top-notch talents by competition, and training top-notch talents by specialty classes, order classes and enterprises. To meet the individualized development of students and the customized needs of different positions in enterprises.

3.2. Construct a "personalized modular" curriculum system based on the needs of enterprises

Promote the teaching organization form of small class system and project team for professional practice courses. Relying on the scientific research platform of enterprises, student studios and student innovation teams have been set up extensively, which are "teachers and students follow, teachers and students create, teachers and students create together". Through the practice of "enterprise project + student innovation team + tutor", the enterprise project is introduced by the team of doctors and technological experts, which drives students to participate in research and development, and connects the research results with enterprise engineers, and enters the enterprise platform for transformation, incubation and industrialization. On the basis of deepening their professional understanding, students can improve their technical application ability and comprehensive innovation ability through individualized professional direction and training carrier selection.

(1) To cultivate innovative talents with modern apprenticeship system. In the fourth semester, the College of Intelligent Manufacturing will select and set up a directional talent training order class with Zhejiang Geely Holding Group Co., Ltd. within the scope of professional groups, and implement the modern apprenticeship teaching of "double tutors" between schools and enterprises. The order class is guided by the professional posts demanded by enterprises, and takes the skill needs of Zhejiang Geely Holding Group Co., Ltd. at different stages as an important evaluation criterion. According to the "Geely Skilled Talents Development and Training System Standard", a modular curriculum system suitable for apprenticeship is built with the main characteristics of "school curriculum + enterprise project", that is, Geely's post competence stage for new employees is completed through school curriculum. Through

the implementation of enterprise projects, we will strive to achieve Geely's ability improvement stage for skilled personnel (one-star or two-star standard) after graduation. Give full play to the respective talent advantages of both schools and enterprises, implement the double tutor system of "professional course tutor" and "enterprise project tutor (master, enterprise engineer)", professional courses are

undertaken by the professional group "double-qualified and double-capable" teacher team, and the rest of the courses and projects are shared by both teachers. The teaching plan is arranged by "half-day course study and half-day project practice".

Table 1. Project Implementation Plan

Serial number	Project	2022	2023	2024
1	Reform and innovation of education and teaching	Complete the formulation of "personalized orientation" talent training program based on integrate the resources of enterprises with vocational schools and universities.	Complete the revision of personalized "personalized orientation" talent training program based on integrate the resources of enterprises with vocational schools and universities.	Construction of Personalized "Personalized Orientation" Talent Training Mode Based on integrate the resources of enterprises with vocational schools and universities;
		Construct a modular curriculum system to meet the needs of different posts and individualized training	Build and develop a modular curriculum system for pillar industries such as vehicle factories and power bases of Zhejiang Geely Holding Group Co., Ltd.	Build a modular curriculum system based on the application of new technologies such as vehicle intelligent manufacturing.
2	Construction of Practice Teaching System of Integration of Training, Research and Innovation	In the first semester of junior year, Geely corporate culture propaganda and employment guidance were carried out for college students. For college students in the second semester of their sophomore year, Geely's corporate culture was preached and an order class based on the "personalized orientation" talent training program was set up.	And follow up the students who practiced in the enterprise last year. For college students in the second semester of their sophomore year, Geely's corporate culture was preached and an order class based on the "personalized orientation" talent training program was set up. Publicize corporate culture for freshmen in the first semester;	In view of the last order class in Geely practice teaching tracking research; For college students in the second semester of their sophomore year, Geely's corporate culture was preached and an order class based on the "personalized orientation" talent training program was set up. Publicize corporate culture for freshmen in the first semester; Form a virtuous circle
		Three-dimensional Digital Innovative Design Competition Named by Geely	Take Geely's specific projects as the guide to hold the school competition of three-dimensional digital innovative design.	Take Geely's specific projects as a guide to participate in the provincial and above three-dimensional digital innovation design competition
3	Construction of high-quality teaching resources	Make good preparations for the construction of virtual simulation courses	Construction of 2 virtual simulation projects	Construction of 3 virtual simulation projects
		Do a good job in the preparation of supporting teaching materials and resources for virtual simulation courses	Construction of 2 supporting teaching material resources for virtual simulation projects	Construction of 3 supporting teaching material resources for virtual simulation projects
		Do a good job in the preparation of virtual simulation curriculum resources	Construction of digital teaching resources with Geely's actual supporting equipment and application of integrated teaching of theory and practice	Construction of digital teaching resources with Geely's actual supporting equipment and application of integrated teaching of theory and practice
4	Teachers' teaching team formation	Make every effort to build a "double-qualified and double-capable" teaching and research team that is good at teaching, strong in scientific research and good at service	Build a "double-qualified" teaching and research team for order classes around Zhejiang Geely Holding Group Co., Ltd.	Construct a teaching and research team of "double teachers and double abilities" for order classes around Zhejiang Geely Holding Group Co., Ltd.
		In-depth understanding of the corporate culture of Zhejiang Geely Holding Group Co., Ltd., equipped with assistant head teacher	Enter Zhejiang Geely Holding Group Co., Ltd. to train full-time class teachers who have a deep understanding of Geely's corporate culture	Exchange and cooperate with each other to train full-time head teachers who deeply integrate Geely's corporate culture
5	The Development of Students and the Improvement of the Quality of Personnel Training	On the basis of the existing studio, the research direction of vehicle intelligent equipment is established.	Establish student associations or innovation studios in the direction of vehicle intelligent equipment to guide students in order classes to carry out "early training and late training"	Establish student associations or innovation studios with Geely automobile corporate culture to carry out "early training and late training"

(2) Construct a personalized training modular curriculum system to meet the needs of different positions. According to the principle of co-construction and sharing of professional curriculum resources within the group, the professional curriculum system based on the construction of professional group adopts the modular construction of "public course platform + professional basic courses with professional emphasis + personalized professional core courses + professional development courses with professional

emphasis". As a key course to cultivate the core competence of professional posts, personalized professional characteristic courses are highly integrated with the needs of different posts in Zhejiang Geely Holding Group Co., Ltd., such as equipment maintenance, sheet metal, mold maintenance, new energy assembly and other core post professional competence development needs, with the needs of enterprises as the main line of curriculum setting, emphasizing the application of vehicle intelligent equipment. It is constructed separately by

each specialty in the specialty group. Professional literacy education and innovative education are integrated into the curriculum system of teaching process to improve the quality of personnel training in an all-round way. The professional group undertakes the construction of public course platform and professional basic courses with professional emphasis, and makes the courses of basic course modules into excellent ones. Enterprises focus on the development of professional development courses with professional emphasis; Around the pillar industries such as vehicle factory and power base of Zhejiang Geely Holding Group Co., Ltd., schools and enterprises jointly build personalized professional core courses.

(3) Deepening the teaching reform based on students. The College formulates rewards and punishments for classroom teaching quality evaluation, and encourages professional groups to actively carry out teaching seminars and teaching observation. We will comprehensively promote the application of advanced teaching methods such as heuristic teaching, inquiry teaching and group cooperative teaching in the classroom. Promote the integration of theory and practice classroom teaching of "hands", "mouth" and "brain". Teachers in schools enter enterprises to give students more humanistic care, and engineers in enterprises enter schools to give students more professional guidance, so as to realize the complementary advantages of full-time and part-time teachers. Reform the assessment method of curriculum, pay attention to process assessment and multi-dimensional assessment.

3.3. Student development and personnel training quality improvement

According to the talent training program, the professional group takes the classroom as the main position to carry out ideological and political education, professional knowledge and skills education, humanities and social sciences education, quality cultivation and moral cultivation. At the same time, we should formulate the training program of students' professional quality and the Guidance Manual of Students' Daily Behavior, and implement the talent training mode of "one, two and three" classroom linkage, deep involvement of professional teachers, and all-round and whole-course education. In order to further cultivate students' professional quality and spirit, special teaching measures such as in-school extra-curricular training, "early training and late training" under the guidance of professional teachers combined with skills training, and "organized, concentrated and guided summer professional social practice" are adopted. Relying on the scientific research platform in the school, the student innovation studio and the student innovation team, which are "teachers and graduate students follow, teachers and students guide students to create, teachers and students to create together", are constructed to

cultivate students' innovative ability differently and individually. Through a series of activities of student associations, we can improve students' participation in social activities and cultivate students' patriotism, humanistic spirit and sense of social responsibility. Take advantage of the opportunity for the doctoral team and technical experts to enter Zhejiang Geely Holding Group Co., Ltd. to guide the students in the enterprise to do a good job of "corporate culture", care more about the interns, pay regular visits to the graduates, and train the students to become high-quality technical and skilled personnel with "national feelings, professionalism, innovative thinking, humanistic quality and social responsibility".

4. Conclusion

At present, the talent training mode based on "personalized orientation" of enterprises has penetrated into the talent training program, and has been vigorously implemented and promoted. Schools and enterprises should take enterprise practice as an important teaching method according to the guiding objectives of the project, and continue to develop school-enterprise cooperation and training with colleagues who study in school, so as to help students solve difficulties in operation and learning, and train more skilled talents.

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