

Practice of the Operating Mechanism and Talent Cultivation of Mixed Ownership in Higher Vocational Colleges

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Abstract—Mixed ownership is a new way through which higher vocational colleges aim to deepen the integration of enterprises and vocational colleges. This study expounds on the connotation and existing problems of mixed ownership in higher vocational colleges and the practical measures taken by our school towards the mixed-ownership reform. The following concepts are examined in depth from the perspective of the reform in the operating mechanism and talent training model of the mixed ownership in higher vocational colleges: financial management system, management mechanism of the board of directors, school-enterprise cooperation curriculum system and modern apprenticeship talent training programme under mixed ownership. Finally, the achievements of the mixed-ownership reform of our school are briefly enumerated. The reformed programmes of the operating mechanism and talent training model of mixed ownership in our school can serve as valuable references for other colleges and universities.

Index Terms—mixed ownership, management mode, cooperation mode, teacher team, higher vocational college

I. CONNOTATION AND FORM OF MIXED OWNERSHIP IN HIGHER VOCATIONAL COLLEGES

Mixed ownership refers to an economic form in which property rights belong to different owners and is an inevitable choice for the development of the socialist economy [1]-[6]. This system breaks the school-running model, with the government being the single subject, to allow enterprises to participate in personnel training and operation management as another school-running subject. Although the government continues to be the main facilitator, the running of schools can move towards the market to attain efficiency and competitiveness [4]-[10].

Higher vocational colleges have explored and practised mixed ownership from different levels and degrees, such as mixed-capital co-run schools, co-construction of mixed-capital of secondary colleges and co-built platform

bases [5]-[12]. The co-run school model has fully enhanced the autonomy and flexibility of school development by attracting social capital to become school shareholders. As an investor, the social capital has the right to speak for running a school; hence, this type can be classified as a mixed-ownership system because it simultaneously considers quality and efficiency. The co-construction of a secondary college allows social capital and corporate resources to participate in the operation and management of a relatively independent secondary college under the framework of the government, and this form is labelled as 'enterprise college or 'industrial college. Investors can customise talent training based on industrial needs and share the achievements of running a school. Enterprises of this type have weaker discourse power than the first type. Meanwhile, the co-built platform is simpler in function than the two aforementioned types. Companies can invest resources, such as equipment, personnel and funds, and partner with schools to build training bases, scientific research platforms and training platforms for production training, technological research and development and employee training. All these facilities are managed and shared by both parties. This model can serve as the exploration and experimental site of the initial stage of mixed ownership [10]-[21].

II. BACKGROUND AND GOALS OF MIXED-OWNERSHIP REFORM

In response to the requirements of 'Exploring and Developing Vocational Colleges of Joint-Stock System and Mixed Ownership' proposed by the State Council in the 'Decision on Accelerating the Development of Modern Vocational Education', Taizhou Vocational and Technical College, Zhuhai TwinWay & EAAT Co., Ltd. and GoldBridge Group Co., Ltd. in Taizhou, Zhejiang, China signed a contract in July 2017 that established the first mixed-ownership automotive secondary college in public institutions of China. This secondary college innovates the system and mechanism of mixed ownership

and explores a whole-process mixed operation mode. Furthermore, modern apprenticeship talent training models based on mixed ownership are revolutionised by relying on national-level projects, such as the modern apprenticeship pilot project of the Ministry of Education, thereby achieving the educational and teaching goals of developing the entire automotive industry chain in the region and ensuring the high-quality employment of students [15]-[29].

The mixed-ownership reform aims to solve the following educational issues. First, the reform tries mixed-ownership secondary colleges in public colleges. Second, the reform seeks to gain system and mechanism advantages to address the superficial combination of works and studies, flabby cooperation between industries and schools and unstable connection standards between schools and enterprises. Third, the reform aims to facilitate the sources and dynamic update of teachers, technology, standards and courses. Finally, the channel between the supply and demand sides of talents will be connected through a multi-element co-education model to solve the mismatch between talent supply and demand [30]-[36].

III. REFORM PRACTICE OF THE OPERATING MECHANISM AND TALENT TRAINING MODEL OF THE MIXED OWNERSHIP IN OUR SCHOOL

Hitherto, no model has been established for a mixed-ownership secondary college to serve as a basis for public vocational colleges and enterprises. Under the existing national regulatory framework, deciding what to 'mix' and how to 'mix' to get the best results is crucial to solving the aforementioned educational issues with the most compact and flexible mechanism, the highest and most strict technical standards, the most diligent and practical school-enterprise interaction and the most precise and accurate employment connection. In the past three years, we have explored and successfully practiced the operating mechanism of mixed-ownership secondary colleges, the 'mixed' model of schools and enterprises and the modern apprenticeship talent training model based on mixed ownership (Fig. 1 and 4).

A. Reform Practice of the Operating Mechanism of Mixed Ownership

The educational laws and regulations in China have clarified that public educational institutions are non-profit. However, public unincorporated secondary colleges cannot guarantee the safety of non-public assets. To address this contradiction, our school has explored an operating mechanism of 'one college with one enterprise' and school-enterprise with '10 similarities' under mixed ownership. First, the model of 'one college with one enterprise, integrating the college with the enterprise' has been established. Here, the college shares the same system with the enterprise, and the operation mode of simultaneously developing talent training and technical services is implemented to promote the formation of the college's own haematopoietic function and ensure the interests of stakeholders. Second, the long-term

effectiveness of joint school running is guaranteed by constructing a '10-similarity' mechanism of mixed-ownership school-enterprise interest community. This system features the joint construction of majors, joint use of resources, integration of culture, joint cultivation of talents, joint promotion of employment, joint technology research, joint service, risk sharing, achievement sharing and joint growth of various parties (Fig. 1).

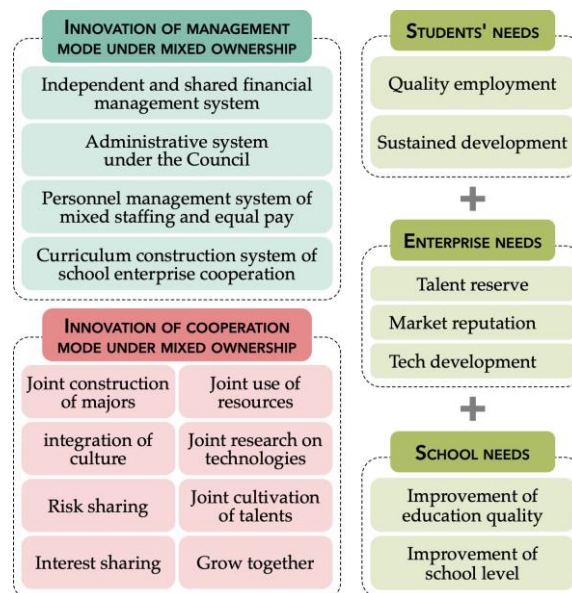


Figure 1. Reform practice of the operating mechanism of mixed ownership



Figure 2. Enterprises build factories on campus.



Figure 3. Students study in factories on campus

(1) Financial management system

The college implements the dean responsibility system with autonomy under the leadership of the board of directors. The school and enterprise properties are independent of each other. Concerning asset investment, the school provides a corresponding amount of facilities and equipment. The partner invests in the construction of on-campus productive training factories and off-campus productive internship sites and provides technical support, including intellectual property rights, such as the latest automotive technology materials, professional teaching materials and software. The property rights of the college's assets are managed in accordance with the principle of 'whoever invests, owns the assets'. All assets are incorporated into the college for unified management and use.

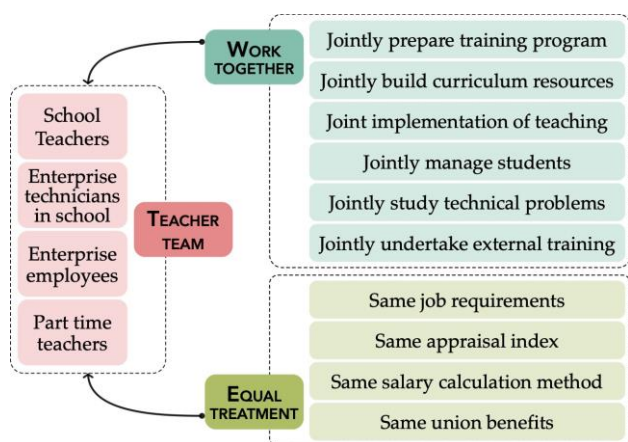


Figure 4. The teaching team comprises full-time teachers on a regular payroll, teachers in residence from cooperative enterprises, part-time enterprise teachers and paired masters in modern apprenticeship.

(2) Management mechanism of the board of directors

The highest decision-making body of the college is the board of directors, which comprises all concerned parties and performs supervision under the college's rules and regulations. The board of directors comprises personnel from the school and enterprise. Important matters of the college must be reported to the board of directors for discussion and approval. A leadership team integrating the school and enterprise is established to fully utilise the strengths of both parties and achieve efficient management complementarity.

(3) Personnel management system

The teaching team comprises full-time teachers on a regular payroll, teachers in residence from cooperative enterprises, part-time enterprise teachers and paired masters in modern apprenticeship. A management mechanism featuring mixed authorisation, equal pay, mutual employment and co-management is formed where the teachers share the same authorisation, establishment, teaching, work, salary and treatment.

All teachers in the team adopt a mixed arrangement and are assigned to the teaching and research section of various majors. The school personnel department

calculates the salary of the teachers from enterprises in accordance with the salary grading method of the teachers on a regular payroll, and the teachers in the same post share the same remuneration and treatment (Fig. 4).

(4) Curriculum system of school-enterprise cooperation

a) The curriculum system is reconstructed to meet the needs of posts accurately. A talent training policy of 'demand orientation, precise positioning, attracting students and zero-distance employment' has been established to satisfy the expectations of the industry and students, and a three-level target system of overall talent training goals, curriculum goals and project goals have been developed to highlight the cultivation of quality, skills and workability and to reconstruct the curriculum system (Fig. 5).



Figure 5. School vehicle training room

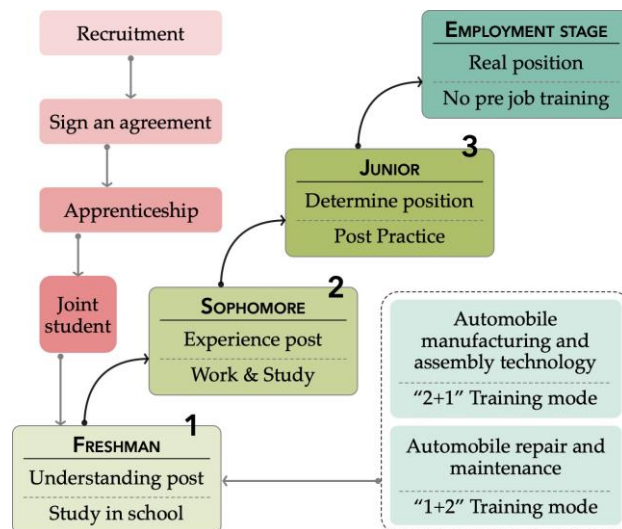


Figure 6. Reform of the mixed-ownership talent training model

b) New technologies and their elements are incorporated to ensure that the reformed teaching material addresses the needs of the posts and to facilitate the mixed teaching practices online and offline. Currently, the resource construction of 16 courses has been preliminarily completed, the first drafts of 12 new-form textbooks have been completed, and six school-based textbooks are already in operation.

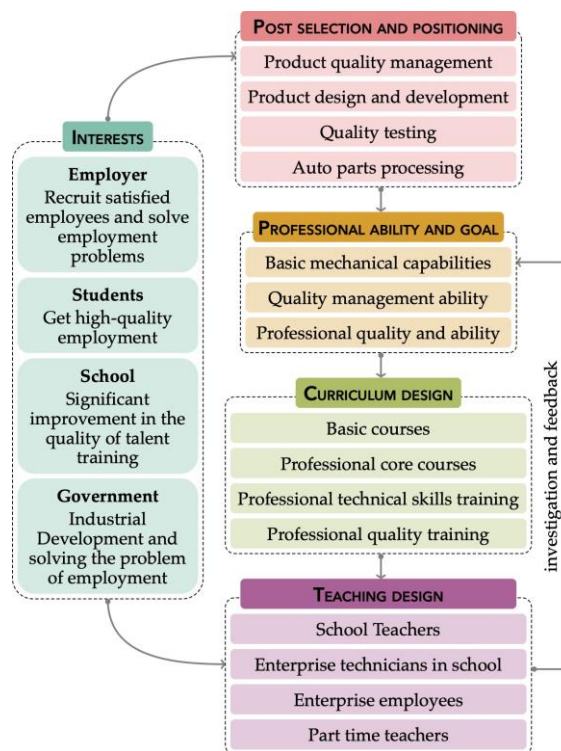


Figure 7. Logical block diagram of talent training for automobile manufacturing and assembly specialty.

B. Reform of the Mixed-ownership Talent Training Model

New programmes for modern apprenticeship talent training are designed and implemented, one of which is the third batch of modern apprenticeship pilot projects in China. Various training goals and programmes are devised for students from different majors and enrolment methods.

For example, given that automobile service majors focus on skill training, the integrated enrolment and recruitment model and the '1+2' training programme are employed to allow students to switch between study and work, move forward step by step and traverse no distance for work. On the contrary, for automobile manufacturing majors, who focus on technical training, the method of recruiting students first and subsequently workers and the '2+1' training programme are employed (Fig. 2 and Fig. 3).

Modern apprenticeship training is implemented quickly and comprehensively by utilising the partners and their interest-related chains. The mixed online and offline teaching, alternate teaching within and outside the school and rotating between teaching in classrooms and workshops are flexibly adopted. Thus, the corporate culture is integrated into the apprenticeship training model throughout the entire process, thereby providing multiple learning channels and solving the contradiction between the school and enterprise concerning time and space (Fig. 6 and Fig. 7).

IV. EFFECT OF MIXED-OWNERSHIP REFORM

According to the employment quality survey, automobile manufacturing graduates rank first among the

graduates of similar majors in the province. The average monthly salary of automobile manufacturing graduates is up to 4,591.46 yuan, which ranks first in the school. Consecutive modern apprenticeship pilot training has been implemented for three years. The majority of the first 28 students majoring in auto repair have been working independently, and 14 students majoring in auto marketing have achieved sales of 100 vehicles within 2 months. In addition, the students won the first, second and third prizes in the provincial skill and subject competition for one, five and four times, respectively. The skills and professional quality of the graduates are usually recognised.

Since the reform of mixed ownership, the team has presided over seven national and provincial teaching and research projects and authorised nine invention patents. Twelve teachers have won honours, such as Taizhou Excellent Teachers and National Excellent Referees. Furthermore, in cooperation with enterprises, the team established an on-campus automobile training centre comprising nine integrated automobile training rooms and an on-campus comprehensive automobile training base with an enterprise investment of 35 million yuan, which was appraised as the productive training base by the Ministry of Education.

V. SUGGESTIONS ON THE OPERATING MECHANISM OF MIXED-OWNERSHIP EDUCATION IN HIGHER VOCATIONAL COLLEGES

Diversified school-running subjects represent the most distinctive feature of mixed-ownership education. The school-running process has posed challenges on the balance of interests and demands of each subject; an effective operating mechanism needs to be built and can be designed from the following aspects.

A. Establishing a board of directors or a council

It is recommended to establish a relatively independent management structure that caters to stakeholders' interests. Any co-running school shall establish a board of directors and any co-building secondary college shall establish a council. A principal accountability system guided by the board of directors (council) shall be implemented, where the principal (dean) shall be entitled to decide the establishment and staffing of the organisation under the supervision of the board of directors (council), and the management team shall have full decision-making power.

B. Clarifying the Investment and Result-sharing Mechanism of Both Parties

Schools and enterprises shall have a property assessment by an authority based on the principles of fairness, justice and transparency before investing. Both parties shall also abide by the terms and conditions approved by the education authority in accordance with laws and regulations after an audit institution finishes cost and benefit accounting to prevent hidden dangers in future cooperation. In terms of a specific investment, it is necessary to clarify in advance the positioning of school-running, personnel reform and assignment system, benefit

distribution scheme, scope and mode of application, sharing of cooperation results and so on.

C. Exercising Power Under an Enterprise-style Management Framework

The power exercise and management of mixed-ownership colleges may refer to the virtues of enterprise management. Colleges may reform and innovate their systems of personnel employment and dismissal, teacher incentive and punishment, and qualitative and quantitative assessment, bringing the teachers' initiative to play to the utmost extent. The 'double subject' daily management mechanism needs to be built to boost the efficiency and performance of management.

Schools are no longer the only subject of talent cultivation. Enterprises shall be deeply engaged in the orientation of talent cultivation, building of curriculum resources, pooling of teaching teams, evaluation of training effects and other aspects. Enterprises shall be entitled to approve and veto during the entire process of talent cultivation. At the same time, internship positions shall match with employment positions. Outstanding graduates may be arranged to work directly in enterprises, or recommended to suitable, similar excellent enterprises to realise 'suitable, high-profile and accurate' employment.

D. Building a Supervision and Evaluation Mechanism

Schools and enterprises shall jointly set up an evaluation committee to comprehensively evaluate mixed-ownership school-running as an important reference for further cooperation between the two parties. Meanwhile, the board of directors (council) needs to assess the management team, supervise the operation efficiency of the management team, and put forward rectification measures in order to improve the management.

E. Specifying the Withdrawal and Aftermath Handling Mechanism

For the purpose of safeguarding the interests of the two parties, students, parents and society, preventing or minimising loss, it is necessary to establish a perfect withdrawal and aftermath handling mechanism. In case any unforeseeable problem of bad influence or low quality of talent cultivation in the cooperation, the withdrawal mechanism shall apply. The invested assets, such as capital, equipment and personnel, shall be disposed of in accordance with the provisions of the contract. In addition, the original school-running mode shall restart to ensure the rights of students involved and the quality of training and to prevent disputes and adverse social influence.

VI. CONCLUSION

Mixed ownership is a vital measure to innovate the system and mechanism of higher vocational education and deepen the integration of enterprise and schools. Diversified school running is conducive to stimulating the vitality of running schools, integrating multiple resources and improving the quality of talent training. Some

achievements have been made in the exploration of mixed ownership in higher vocational colleges and talent training mode. Nevertheless, difficulties in policy implementation, governance mechanism and system assurance continue to be explored and improved constantly. The establishment of a school-enterprise community with a shared future requires further running-in practice.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Sike Jin organized the formulation of talent training program and conducted the research. Sike Jin and Jiali Jin wrote the paper. All authors had approved the final version.

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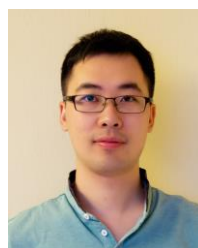
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