

Industrial Colleges: Constructing the New Platform of School-enterprise “Benefit Community”

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Abstract—Over the years, the applied transformation of newly established undergraduate colleges, and the applied talent cultivation are the new topics often emphasized in higher education circle, and a lot of colleges have conducted positive reforms and exploration. Zhejiang Shuren University takes the construction of “teaching service-type college” as the opportunity, the construction of industrial college as the emphasis, and pointedly builds school-enterprise cooperation “benefit community”, and its experience can have good referential significance to peer colleges.

Keywords—School-enterprise cooperation; Practical teaching; Talent cultivation; Mode reform

I. INTRODUCTION

Currently, our country is now in the period of economic transformation and industrial updating and upgrading, and is in urgent demand for lots of high-quality applied talents. Comrade Xi Jinping specifically gave instructions of “industry-university integration, school-enterprise cooperation, work-study combination, and the unity of knowing and doing” during the national conference on vocational education. In 2014 Three-ministry Documents (hereinafter referred to as “three-ministry documents of the state”) of NDRC, Ministry of Finance and Ministry of Education, it was clearly put forward that it was requested to “guide a batch of newly built undergraduate colleges to transform towards applied type”, make “professional setup dock with industrial demand, the teaching process dock with the production process, and the course contents dock with professional standard”. In order to realize the aforementioned objective and requirements, school-enterprise cooperation must play an increasingly important role in the cultivation of applied talent.

The author searched through China Journal Net, CNKI and other relevant platforms, along with big enrollment increase of Chinese colleges in 1999, the newly built undergraduate colleges sprung up like mushrooms, and school-enterprise cooperation is the only road for the reform of talent cultivation mode in all the newly built undergraduate colleges, but through above ten years of exploration and practice, “school-enterprise cooperation, industry-university integration” are still constantly put forward in national layer, which indicates that the previous school-enterprise cooperation has problems and disadvantages.

II. MAIN PROBLEMS IN THE TRADITIONAL SCHOOL-ENTERPRISE COOPERATION

However, in the previous traditional school-enterprise cooperation, we can find out some problems in the newly built undergraduate colleges as well as enterprise and public institution, such as shallow cooperation degree, short cooperation and unapparent effect, and the main performance is as shown in the following aspects:

“Fragmented” school-enterprise cooperation; due to the influence of traditional education concept, many school-enterprise cooperation projects are merely the supplementation of theoretical teaching, and are merely carried out through focusing on certain course (training project), and the teaching contents have weak content coherence, and relatively simple form. As can be seen from the essence, schools fail to truly realize the importance of school-enterprise cooperation, and truly include it into talent cultivation system, and also fail to focus on the overall objective of applied talent cultivation to establish complete cooperation system, and various kinds of practical teaching reform are nonsystematic and “fragmented”.

“Short-term” school-enterprise cooperation; since the school-enterprise parties have more or less inconsistent cognition about importance, and cannot accurately seize the core point of “joint interests” in practice, lots of cooperation projects are not truly established on the basis of the long-term demand of school-enterprise parties, but the “achievement” of some leading teachers by virtue of their “interpersonal relationships”, so lots of enterprises don’t have strong cooperation motivation and long-term consideration, and generally, after several times of cooperation, there is almost no space for continuous cooperation.

“Superficial” school-enterprise cooperation; at the initial period for school-enterprise cooperation, the cooperation mode for lots of colleges is mostly “shaking hands, taking photos, and having dinner”, and the cooperation is merely kept at joint base construction, course practice and other relatively superficial layers; meanwhile, similar phenomenon also exists among the participated students, students don’t have enough cognition about school-enterprise cooperation, and they enter into the base (enterprise) for internship only for the objective of getting the credit and don’t want to truly go deep into the first line, let alone “bear the hardship”, and in the practice and internship process of enterprises, they perform their duties in a perfunctory manner, with no big effect.

As for the essence of the aforementioned problems, the essential reason is that the school-enterprise cooperation parties fail to truly form a “benefit community” based on mutual benefit and win-win, and serving the two parties. We think that, along with the entrance of higher education into the new era, the valid emphasis for constructing school-enterprise “benefit community” is to build industrial colleges.

III. LOGICAL STARTING POINT FOR INDUSTRIAL COLLEGES

The construction of industrial colleges is the only road for the newly built undergraduate colleges to deepen school-enterprise cooperation, and realize industr-university integration, and the author holds that, this is mainly based on the following factors:

Economic upgrading transformation is the motivation of the government for the construction of industrial colleges. In consideration of the fact that school-enterprise cooperation is important for promoting the strategic adjustment of economic structure, the Party Central Committee and the State Council have attached great importance to school-enterprise combination, General Secretary Xi Jinping and Prime Minister Li Keqiang recently gave a series of instructions and requirements regarding this. Schools and enterprises belong to two different fields, with different organization objectives and operation modes, so there can be certain difficulty in cooperation, and as the third party institution for school-enterprise cooperation, the government plays an extremely important role in promoting school-enterprise cooperation. For this reason, all levels of local government has published a series of policies about the promotion of school-enterprise cooperation over the years, to provide various preferential policies and convenient conditions for cooperation parties, directly or indirectly subsidize the two cooperation parties, and encourage enterprises to participate in school-enterprise cooperation; meanwhile, the government also further perfected achievement transfer method, intellectual property right protection laws and other laws and regulations, help enterprises and colleges rationalize cooperation relationship, and build a good cooperation environment. In 2014 Three-ministry Document of the state, the requirement of “constructing mixed ownership industrial colleges” was clearly put forward. Besides, the government has also actively built school-enterprise cooperation platform, for instance, it has set 15 industry-university-research alliances within the entire province of Zhejiang Province, further gathered college innovation resources, validly served regional economic social development, and promoted economic transformation upgrading. These policies have effectively promoted the in-depth implementation of school-enterprise cooperation in different layers, and built a good political environment for constructing industrial college.

The school-running positioning is the motivation of colleges for the construction of industrial colleges. Speaking of school-running positioning, newly built undergraduate colleges are basically positioned at “locality” and “applied-type”. Some colleges are positioned as “teaching service-oriented universities”, or “applied innovation-type”, or “locality” and “higher education”. But no matter what kind of mode it is, the construction of school-enterprise cooperation “benefit

community” is the due intention for the applied talents of newly built undergraduate colleges, while the construction of school-enterprise in-depth integrated industrial colleges is the best reflection of “benefit community”. Through school-enterprise cooperation “benefit community” constructed by the two parties, on one hand, schools implement “the guidance of learning with practical application” and take industrial (backbone enterprises) demands as the guidance, use “backward induction method” to jointly design applied talent cultivation system and course system; on the other hand, schools implement “the promotion of learning with practical application”, reinforce practical teaching link, fully utilize industrial (backbone enterprises) human resources and technical environment, promotes the improvement of students’ practical capacity and the cultivation of innovation and entrepreneurship spirit, and finally promote students’ market matching rate.

Innovation drive is the motivation of enterprises for the construction of industrial colleges. According to the profound changes to the current world situation and national conditions, it is hard for traditional extensive development mode to sustain in China; in order to survive and develop in the fierce market competition and constantly changed market demands, enterprises must largely improve the capacity of independent innovation, and step on the road of innovation-driven development. Innovation drive includes two aspects of contents: firstly, it is to reinforce scientific and technical innovation; secondly, it is to create innovative employee team, and both of them request enterprises to establish “benefit community” with colleges, and form close cooperation relationships. Due to the different social divisions of labor, enterprises have strong advantages in technical application and product development, but still have certain difficulties in basic research and technical innovation, while colleges have lots of talents considering this aspect, with relatively strong scientific research capacity. Thus, when the current technical means of enterprises cannot satisfy the market demand, it is applicable to valid shorten technical development time, decrease R&D cost and promote the technical innovation and optimization upgrading of the industry through forming a team with colleges, completing each other’s advantages, and jointly solving industrial technical difficulties; on the other hand, through talent “customized” cultivation, personnel training and other modes, enterprises can obtain their urgently demanded technical innovation talents, so as to keep the innovation competitiveness of enterprises.

Currently, there hasn’t had any unified concept and definition about what are industrial colleges at home. The author thinks that, industrial college is the close integration of undergraduate colleges and the industry (including a part of backbone or large-scaled enterprises), and the applied-type professional colleges that take industrial (enterprise) production line, product chain, technical chain and service chain as the object to carry out talent cultivation as well as scientific and technical service, of which the connotation includes: firstly, industrial colleges are built through the in-depth integration of undergraduate colleges with the industry or the typical enterprises in the industry, and the relationship of the two parties is integrates, rather than the cooperation in general meaning. The degree of integration for the two parties

is not “a physical reaction”, but “a chemical reaction” or “biological reaction”; secondly, the talent cultivation in industrial colleges clearly takes the production chain, product chain, technical chain and service chain of the industry (enterprise) as the object, rather than a general reference and randomness; thirdly, this is a professional college, and an applied-type professional college, which has differences with traditional academic professional colleges.

IV. MAIN CHARACTERISTICS ABOUT THE CONSTRUCTION OF INDUSTRIAL COLLEGES

The author thinks that the main characteristics about industrial colleges include the following six aspects:

Firstly, it is to jointly build the governance mode; high fusion requires joint governance, and only when joint governance is implemented can high fusion be realized, and responsibilities be jointly shared, and this is a basic principle, and also the biggest difference between our present industrial colleges and the past school-enterprise cooperation. In the past school-enterprise cooperation, schools were the subject, and would generally call the shots. Enterprises were supporting roles and taken as the cooperation party of the school, and the role played thereby wasn't obvious. In industrial colleges, as an important party, industry directly participates in governance, and has an important speaking right and decision-making right considering the talent cultivation of colleges and other important development strategies, and it is not merely the nominal right.

Secondly, it is to jointly formulate cultivation scheme. Industrial colleges are the teaching community that closely integrates schools and the industry, and the talent cultivation scheme requires the close combination with industrial (enterprise) demand for talent knowledge, quality and capacity, and then through relying on the existing specialties (specialty group and specialty direction) of schools, form the talent cultivation characteristics with highlighted industrial characteristics, of which in some specialties directly participated by enterprises, such as the ordered class, and cooperation class, talent cultivation scheme should be more partial to enterprise demand. In the organization form, industrial colleges can independently build classes, and also break the boundary of specialties, colleges, layers, and the quantity of people, and independently enroll students or set classes (or virtual classes) within the entire school. Under the precondition of following the basic rules of education, energetically advocate bold reform of theoretical teaching and practical teaching system taking industrial demand as the orientation.

Thirdly, it is to jointly build teaching team; the development of industrial colleges requires the construction of teaching team that can realize on-campus and off-campus combination as well as full-time and part-time integration. Industrial colleges are the important approach and emphasis for the construction of applied model colleges. In order to build applied model school, and carry out applied undergraduate education, on one hand, we should carry out professional basic theoretical education, and without professional basic theoretical education, it is impossible to carry out applied professional

education. On the other hand, in order to focus on applied talent cultivation, it is requested to teach the newest application technologies to students timely and completely. But through objective analysis, our teachers cannot always work at the first practical line for a long time, or constantly track the cutting-edge technical applications, but industrial and enterprise tutors are more skilled than us regarding this, and they can do it. Thus, it is requested to pay high attention to the function of industrial tutors, and build the teaching team that highly integrates theoretical teachers and industrial tutors. Besides, industrial colleges are also universities, but the learning time is limited, so it is impossible to spend all time in applied course teaching, and within the limited time, in order to realize the maximized effect of applied knowledge education, it is requested to well dock technical application with course teaching, and in the practical training, graduation design and other links, it is also requested to play the role of enterprise tutors. In general, only when the advantages for the two teams of professional teachers and industrial tutors are fully played can they complement each other in applied talent cultivation, highlight the characteristics and demands of industrial colleges, and practically improve the accuracy, pertinence, adequacy and validity of talent cultivation.

Fourthly, it is to jointly promote management reform. Here, it mainly refers to the reform of teaching management. Since the cultivation plan, contents, and objective of colleges are changed, corresponding college management should also be reformed. It is requested to jointly negotiate the relevant arrangement of teaching management with the relevant industrial (enterprise) teams. For instance, on the basis of “trimester system” reform, try multi-term teaching organization mode, so the future holiday arrangement may also be changed; try to let students learn the flexibility and intersectionality in space time; encourage industrial colleges to conduct relevant course replacement, credit substitution, or appropriately open some enterprise culture courses; encourage colleges to take the production process, and industrial characteristics as the orientation, and conduct the reform of teaching mode and methods as well as the course evaluation mode, etc.

Fifthly, it is to jointly create industry-university-research base; focus on the construction of industrial colleges, actively explore the diversified, multi-layer and multi-form cooperation of schools, government and enterprises, especially in the practical training, course practice and graduation practice links, play industrial advantages, and strive to form “scenario-based on-campus experimental training center, and teaching-oriented off-campus practical training base”; under the lead of the industry, take industrial colleges as the foundation, implement relevant measures, create school practice and teaching base, industrial teacher source base, students employment base, teacher practical capacity promotion base, industry-university-research cooperation base, continuous education training base and other “six-in-one” bases.

Sixthly, it is to jointly carry out project R&D; with respect to the teaching reform, rely on industrial colleges to conduct applied transformation, create a batch of school-enterprise cooperation enterprise module courses and textbooks, and make the collaborative teaching rate of core course enterprise teachers reaching to above 70%, and build resource sharing

courses and new textbooks; focus on actual applications, exert technical advantages, conduct the R&D of new products and new technologies, improve management procedures, and drive students' innovation and entrepreneurship. With respect to scientific and technological development, play the talent advantages, technical advantages and discipline advantages of colleges, take the technical demand of industrial colleges as the orientation, jointly carry out relevant topic researches and technical development, and directly serve the technical transformation, product upgrading and transformation development of industrial enterprises.

The aforementioned six aspects are the basic characteristics of industrial colleges, and since the development period and process for various industrial colleges are different, the characteristics of various industrial colleges may be not obvious, and this is a normal phenomenon, after all, everything has a process of constant perfection and maturity.

V. EXPLORATION AND PRACTICE ABOUT THE CONSTRUCTION OF INDUSTRIAL COLLEGES IN ZHEJIANG SHUREN UNIVERSITY

Since Zhejiang Shuren University was “upgraded to a 4-year college”, it has been actively exploring the long-term valid mechanism for the collaborative talent cultivation with the government, and industrial enterprises and public institutions, and has built 196 internship and practice bases, and 45 school-enterprise cooperation classes (virtual classes), and in the recent years, it has also successively constructed 9 industrial colleges with relevant industry (backbone enterprises), and initially formed four modes (“four-wheel drive” mode) with the government, industrial association, enterprises and public institutions as well as overseas college cooperation co-construction industrial colleges, organically integrated school-enterprise cooperation into all aspects of teaching base, teaching team, industry-university cooperation, and teaching team construction, validly constructed school-enterprise cooperation “benefit community”, and formed the “ecological chain” of school-enterprise cooperation.

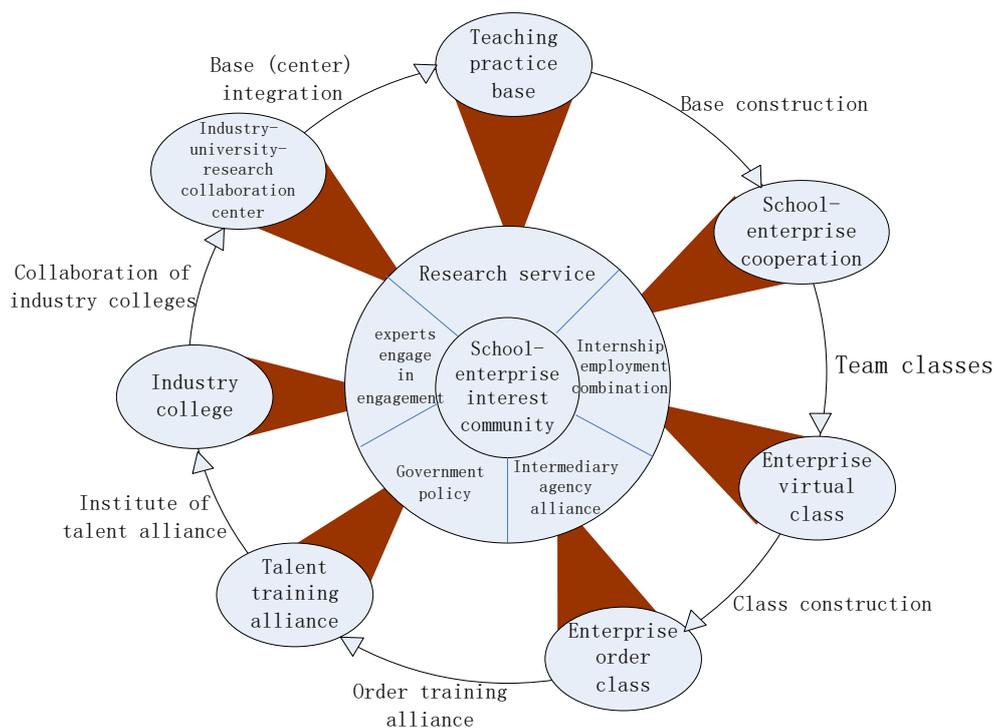


Fig. 1 The schematic diagram of school-enterprise cooperation long-acting mechanism

Realize school-enterprise governance; industrial colleges implement the president responsibility system under the lead of the board of directors, and both the school and enterprises (public institutions and government) will jointly build the board of directors, and the leading group of industrial colleges is constructed upon the joint appointment of school-enterprise parties. The two parties will jointly entrust personnel to constitute college management team, and take responsibility for the daily teaching operation and talent cultivation of colleges, and the executive board of directors for industrial

colleges will decide and comprehensively take responsibility for the education teaching and administrative management work of the college. Through recent years of practice and exploration, constantly perfect the governance structure of school-enterprise parties, jointly build benefit community, and strive to provide talent cultivation, professional training, innovation platform and the service of other aspects for the industry (enterprises).

Scientifically set and adjust specialty (specialty direction); all industrial colleges can dock with the industry, and through

focusing on the industrial chain, and innovation chain, flexibly set and adjust specialty, successively set and adjust 11 specialties and specialty directions, for instance, Housekeeping And Nursing College is set with nursing service and management, business administration (community and housekeeping management direction), nursing science and other specialties; Mountain & Sea College is set with tourism management specialty (leisure and healthcare direction), investment specialty (internet finance direction); Yellow Rice Wine College is set with bioengineering (yellow rice wine marketing direction), etc. Both schools and enterprises take specialty as the emphasis, jointly builds professional construction guidance committee, and jointly establishes professional standard; as per the industrial and enterprise demand, recombine the structure and procedure of talent cultivation, deeply promote applied teaching reform, and enterprises participate in the full process of specialty construction and talent cultivation, and truly make our specialty “alive” and “applied”.

Construct the course system with industrial characteristics. All industrial colleges use industrial development and industrial technical progress to drive course reform, integrate the relevant public basic course, discipline platform course, professional core course, laboratory practice course, focus on cultivating students’ technical skill as well as innovation and entrepreneurship capacity, and elaborately formulate talent cultivation scheme. All specialties (specialty direction) take industrial demand and professional capacity demand as the orientation, match and perfect “platform + module” course system, for instance, the marketing specialty of Hongshiliang College mainly set public basic course and discipline platform course for the former two years, and then started to set enterprise management, wine marketing and other course modules in the junior year, and included Enterprise Culture, Market Investigation and Analysis as well as other courses into about three months of enterprise internship per academic year, and it is mainly completed by enterprise tutors and on-campus teachers together, to truly realize the seamless docking of course teaching process and production process. According to incomplete statistics, in the recent two years, all industrial colleges have successively cooperated and developed about 20 school-enterprise cooperation courses through close school-enterprise cooperation, and all courses are combined with post capacity cultivation design project-oriented course teaching scheme, develop the project-oriented course teaching resources combining the actual conditions of production, and introduce the actual project or training resources of enterprises, enterprise culture, post responsibility awareness, and actual professional environment, and the keynote teacher can be mainly constituted by enterprise experts, and the courses are mainly focused on enterprise site. Meanwhile, all industrial colleges have gradually realized course setup modularization; meanwhile, in consideration of the professional demands of different students, course modularization can be subject to different permutations and combinations.

Erect diversified practical teaching platform; on one hand, all industrial colleges set courses at the practical training site through the all-dimensional transformation of original teaching scenario and place, and implement field teaching mode focused

on post innovation practical capacity cultivation, for instance, Hongshiliang College is set with “Hongshiliang Brand Studio”, and “Hongshuren Network Laboratory” on campus, Housekeeping and Nursing Service College establishes “Smart Nursing Service Laboratory”, and Huawei College is set with “Huawei Communication Laboratory”. Through constructing on-campus practical training center, training center, characteristic classroom and all kinds of practical teaching sites, simulate the actual environment of enterprises, integrate technical process, management technology and other production management factors into practical training contents, and improve the internship and practice effect of students. On the other hand, in the cooperated industrial enterprises, jointly build a series of off-campus practical teaching bases, for instance, through cooperating with “Shulan Hospital”, Nursing and Housekeeping Service College has not only built nursing science specialty, but also established teaching practice base with 5 hospitals under the management of the group, and also placed several course inside the base for teaching. Through the aforementioned measures, initially form “scenario-based on-campus experimental training center, and teaching-oriented off-campus practical training base”.

Build “double-teacher and double-capacity” teaching team; all industrial colleges can rely on cooperation platform, and establish the mutual appointment system of enterprise employees and teachers. On one hand, schools can rely on “hundred-industry teacher training” plan, appoint young teachers of schools to periodically take a temporary post at enterprises and exercise, and reinforce the contact with industrial enterprises; over the years, there have been 200 teachers successively exercising at enterprises; on the other hand, schools implement “thousand industrial teachers” plan, and through school-enterprise cooperation platform, above 560 excellent enterprise management talents and high-skilled talents successively participated in course construction or various lectures, and practical training guidance. Through making endeavors, schools have initially built a “double-teacher and double-capacity” teaching team that realizes part-time and full-time combination, and the proportion of “double-teacher and double-capacity” teachers has reached to 36%, which has laid a solid foundation for applied talent cultivation.

VI. CONCLUSION

School-enterprise cooperation is an eternal topic that is generally seized and updated, while the construction of industrial colleges is a process work currently found by Zhejiang Shuren University that can meet its own characteristics, and currently, it is still preliminary and periodic, and many connotation construction contents remain to be constantly deepened. We expect that, under the document guidance of the State Council’s Decisions about Several Opinions for Further Promoting Industry-university Integration, and it is certain that the school-enterprise cooperation road for various colleges will be increasingly widened.

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Brief Introduction about the Author: Jin Jinbiao (1969-), professor and department head for the office of academic affairs in Zhejiang Shuren University, and the research direction is: teaching management.

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