

Research on the Construction Path of "Dual-Teacher" Teaching Staff in Applied Undergraduate Colleges and Universities under the Perspective of Industry-Education Integration

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ABSTRACT

With the state's adjustment of the economic and industrial structure, the society is in urgent need of a group of applied talents with hands-on practical work, and the integration of industry and education has become an effective way to cultivate applied talents, and applied undergraduate colleges and universities, as an important base of talent cultivation, shoulder an important mission of cultivating applied talents, and the 'dual-teacher' teaching staff plays a vital role in this process. The 'dual-teacher' teaching staff plays a crucial role in this process, and they can combine industry and education in depth, which can also be said to be a bridge connecting the deep integration of the two. On this background, it is very important to deeply analyse and study the construction of 'dual-teacher' teachers.

Key words: Integration of industry and education; Applied undergraduate colleges and universities; Dual-teacher model; Teaching staff

Introduction

In recent years, with the rapid development of social economy and the deep adjustment of industrial structure, the talents cultivated by higher education can no longer meet the demand for talents in industry. According to the social reality, the General Office of the State Council issued the document "Several Opinions on Deepening the Integration of Industry and Education" in 2017, and at the same time, the report of the Twentieth National Congress of the CPC also emphasized the "promotion of general vocational accommodation, integration of industry and education, and fusion of science and education", and these policies and documents can be said to point out the direction for the talent cultivation of some colleges and universities, especially for the applied undergraduate colleges and universities. These policy documents can be said to have pointed out the direction for some institutions of higher education, especially applied undergraduate

colleges and universities. At a time when the integration of industry and education continues to deepen, more and more applied undergraduate colleges and universities have seized the opportunity to position themselves in talent cultivation and serve the local community, and have also promoted their own high-quality development. Teachers are undoubtedly particularly important in the process of talent cultivation, and the "dual-teacher" teaching staff is the core key, this kind of teachers not only have solid professional theoretical knowledge, but also have a wealth of practical experience and industry background, and can more effectively guide the students to combine the knowledge they have learned with the practical application, and it is a concrete implementer of cultivating application-oriented talents. However, there are many problems in the construction of "dual-teacher" teaching staff in applied undergraduate colleges and universities, which may affect the quality of talent cultivation. Therefore, based on the background of

Industry-Education integration, this study analyzes the strategy of "dual-teacher" teaching staff construction, in order to provide theoretical guidance for improving the quality of teaching and talent cultivation in applied undergraduate colleges and universities.

1 Related Research Content

1.1 Industry-Education Integration

Compared with the talent cultivation model of Community College, the "dual system" of Germany, and the talent cultivation model of TAFE colleges in Australia, China's "industry-education integration" model started late. In October 2015, the Ministry of Education, the National Development and Reform Commission and the Ministry of Finance jointly issued the "Guiding Opinions on Guiding Some Local Ordinary Undergraduate Colleges and Universities to Transform into Application-oriented Colleges and Universities", which explicitly pointed out that local applied undergraduate colleges and universities should shift to the "integration of education and industry" model of university-enterprise cooperation. Under the guidance of this document, the concept of school running and the corresponding talent cultivation mode in the context of "integration of industry and education" in China came into being. Domestic scholars have also begun to conduct in-depth research from different perspectives, and have achieved fruitful results, but the definition of the concept of "integration of industry and education" has not yet formed a unified understanding. Generally speaking, "industry-education integration" is defined as a close cooperative relationship between industry and higher education institutions, which aims to improve the quality of education, promote innovation and entrepreneurship, and thus promote the sustainable development of the economy by strengthening the mutual support and interaction between education and industry.

1.2 Applied Undergraduate Colleges and Universities

Applied undergraduate colleges and universities, as a key part of China's higher education system, are a natural result of higher education's conformity to social

and economic development. Throughout the national policies released, such as the "Decision on Accelerating the Development of Modern Vocational Education", the "Guiding Opinions on Guiding Some Local Ordinary Undergraduate Colleges and Universities to Transform into Application-oriented", and the "Implementation Program of the National Vocational Education Reform", some of the ordinary undergraduate colleges and universities are being guided to transform into application-oriented colleges and universities. In addition, China's higher education has gradually transitioned from the former elite education to mass education, and a variety of types and levels of institutions have emerged. The construction of application-oriented undergraduate colleges and the cultivation of application-oriented talents are precisely in line with this development trend of higher education. Different from the traditional general colleges and universities that mainly cultivate academic talents, the common feature of applied undergraduate colleges and universities is that they focus on cultivating undergraduates with practical application ability and aim at serving the local economic development.

1.3 "Dual-teacher" Teachers

In the higher education system, "dual-teacher" teachers play a crucial role, not only as the transmitter of knowledge, but also as the guide of students' practical ability cultivation, so they cannot be defined from a single perspective. At present, there are various views on the concept and connotation, and the common ones are "double certificate", "double title", "double ability", "double experience", and "double identity", etc. but no matter which viewpoints, they all emphasize that this kind of teachers should have "double" qualifications. Since 1995, when the expression "dual-teacher" teachers was first elevated to the level of national policy in the "Notice on the Construction of Model Vocational Universities", the State Council issued the "Notice on the Issuance of the Implementation Plan for the National Reform of Vocational Education" on January 24, 2019, which explicitly stated that "Dual-teacher" teachers refer to "teachers with both theoretical and practical teaching abilities", and require that the number of "dual-teacher"

teachers exceed half of the total number of professional teachers by 2022. The number of "dual-teacher" teachers is required to exceed half of the total number of specialized teachers by 2022. With the continuous development of society and economy, the national policy for "dual-teacher" teachers has been deepened, and the connotation of "dual-teacher" teachers has been updated continuously with distinctive characteristics of the times. On the whole, "dual-teacher" teachers should not only have the basic abilities and qualities of teachers, but also must master the knowledge and skills of the professional industry; if they are separated from their professional backgrounds, "dual-teacher" teachers will lose the basis of their existence .

2 Relationship among Industry-Education Integration, Applied Undergraduate Colleges and Universities, and "Dual-Teacher" Teachers

With the growing demand for applied talents in the country, industry-education integration has become one of the effective ways to improve the teaching quality of applied undergraduate colleges and universities and cultivate applied talents, and it can also prompt applied undergraduate colleges and universities to build a student-centered and output-oriented talent cultivation system so as to more accurately serve the local economy. In the process of talent cultivation, applied undergraduate colleges and universities pay attention to the cultivation of practical ability, employability and innovation ability, which can be said to be an important carrier of the integration of industry and education, and an important link between industry and education.

As a key component of higher education, the teaching force plays an important role in the process of cultivating talents. Especially in applied undergraduate colleges and universities, "dual-teacher" teachers play a significant role in cultivating composite applied talents with theoretical knowledge and practical skills, which meets the demand of the society for talents and promotes the optimization of the structure of the teaching force. At the same time, applied undergraduate colleges and universities set up a stage for "dual-teacher" teachers to practice, so that they can accumulate experience in the

actual work, and then improve their teaching ability, and jointly promote the improvement of education quality in a virtuous circle.

There is also a close intrinsic link between the integration of industry and education and "dual-teacher" teachers. The implementation of industry-education integration relies on the support of a high-quality teaching team, and "dual-teacher" teachers, as the core component of the team, combine the practical experience of the industry with the teaching content, and provide students with real industrial projects and practice opportunities, which can be said to be the key practitioners of the implementation of industry-education integration. The participation of "dual-teacher" teachers can guide students to go deeper into the industry, gain insight into the actual problems and needs, promote students to better adapt to the needs of industrial development, and effectively promote the deepening of the implementation of the industry-education integration model.

In summary, the integration of industry and education, applied undergraduate colleges and universities, and "dual-teacher" teachers have formed a benign interactive relationship of mutual promotion and synergistic development, as shown in Figure 1.

3 Status and Problems of "Dual-Teacher" Teaching Staff in Applied Undergraduate Colleges and Universities

3.1 Ambiguous Standards for Certification of "Dual-Teacher" Teachers

Throughout the policies and documents issued by the state on "dual-teacher" teachers, all of them emphasize the need to strengthen the construction of "dual-teacher" teaching staff, but the core connotation of the definition and accreditation standards for a long time in the institutional vacuum, while the provincial policy has not been able to fill this normative gap. Under this circumstance, applied undergraduate colleges and universities have developed different standards for identifying "dual-teacher" teachers, resulting in diversified and fragmented standards and a lack of

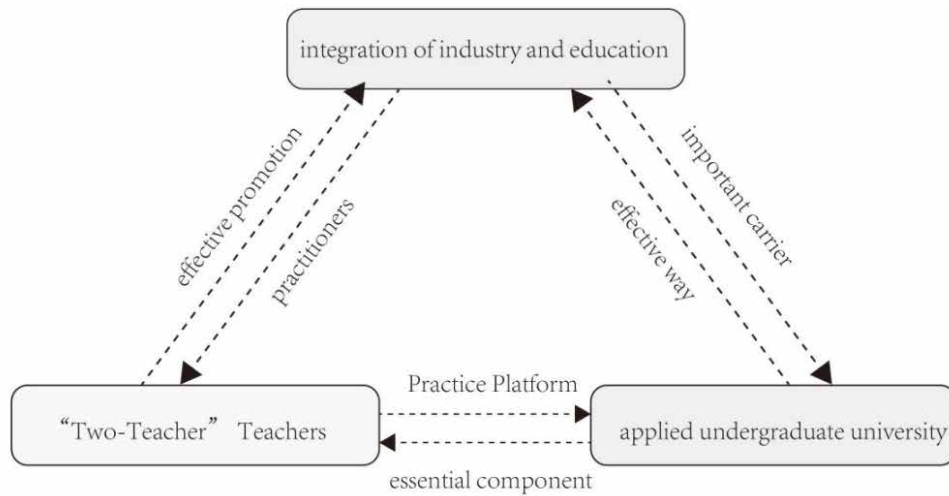


Figure 1 Relationship among industry-education integration, applied undergraduate colleges and universities, and "dual-teacher" teachers

uniformity and authority. For example, some colleges and universities simply equate "dual-teacher" with "dual-certificate" (teacher's qualification + vocational qualification) or "dual-title" (college teacher's title + industry title). This way of defining "dual-teacher" teachers only by the standard of certificate is obviously too one-sided, ignoring the comprehensive performance of teachers in actual teaching and practical ability. In addition, some regions and colleges are more formalized in the recognition process, requiring teachers to have a certain amount of practical experience in enterprises or project cooperation experience, but there is a lack of strict auditing mechanism for the quality and actual effect of such experience, which ultimately leads to the uneven practical application ability of "dual-teacher" teachers. This problem has also resulted in some teachers with rich practical experience not being recognized as "dual-teacher" teachers because they do not meet the specific standards of certain regions, which is undoubtedly a waste of talents. Such ambiguous certification standards not only bring confusion to teachers' career development, but also bring challenges to universities in introducing, training and evaluating "dual-teacher" teachers.

3.2 "Dual-teacher" Teacher Training System to be Improved, Insufficient Efforts and Effectiveness to be Enhanced

At present, the "dual-teacher" teacher training system is still to be improved, which fails to adequately combine the teacher's personal development plan, the industry development situation, and the needs of the school team building, and the form of training is mainly based on lectures, seminars and other theoretical topics, and it is difficult to implement long-term and effective practical training, resulting in a single training system that lacks flexibility. As the core of university education, teacher training is an effective way to realize high-quality education, however, "dual-teacher" training is insufficient. Schools have not provided clear guidelines and long-term planning for "dual-teacher" teachers, and the expansion of higher education has resulted in heavy teaching loads for teachers, making it difficult for schools to arrange specialized practical training for "dual-teacher" teachers or on-the-job training in enterprises. Enterprises have a passive attitude towards the cultivation of "dual-teacher" teachers, and are unwilling to invest time and provide positions for teacher training and practical operation. The lack of enthusiasm for cultivation on both sides of the university and the enterprise has led to a lag in the construction of "dual-teacher" teachers in higher education institutions. From the perspective of government support, the government's investment is insufficient, and the relevant policies and incentives are

imperfect, which makes it difficult to effectively mobilize universities, enterprises and teachers to participate in the construction of "dual-teacher" teaching staff enthusiasm. In addition, the quality assessment system for the training of "dual-teacher" teachers has not yet been established, which makes it impossible to accurately measure the effectiveness of the training, and further exacerbates the problem of ineffective teaching.

3.3 Inadequate Evaluation and Incentive Mechanism for "Dual-Teacher" Teachers

A scientific and long-term evaluation and incentive mechanism for "dual-teacher" teachers can not only stimulate the work enthusiasm of "dual-teacher" teachers, but also provide a good opportunity for "dual-teacher" teachers to work. However, at present, most applied undergraduate colleges and universities have not yet established the evaluation system for "dual-teacher" teachers. Existing evaluation indexes focus more on teachers' teaching and scientific research achievements, but lack of evaluation on teachers' practice. This situation of "emphasizing scientific research but not practice" is contrary to the connotation of "dual-teacher" teachers, thus restricting "dual-teacher" teachers from playing their proper roles. In addition, even though a few colleges and universities have tried to set up evaluation systems for "dual-teacher" teachers, these systems are often difficult to be sustained due to the lack of scientific and long-term effectiveness. At the same time, the lack of a perfect incentive mechanism for "dual-teacher" teachers can also lead to a lack of motivation and willingness to participate in the work of teachers. According to relevant studies, applied undergraduate colleges and universities have relatively low investment in the training of "dual-teacher" teachers in terms of capital expenditure, and are more inclined to teaching and scientific research achievements in terms of rewarding performance, appraising titles and evaluating excellence, which further weakens the career attractiveness and motivation of "dual-teacher" teachers.

4 Suggestions and Measures for the Construction of "Dual-Teacher" Teaching Staff in Applied Undergraduate Colleges and Universities

4.1 Constructing "Dual-Teacher" Teacher Qualification Standards and Defining Teachers' Qualifications

In response to the current "dual-teacher" teacher qualification certification process of inconsistent standards, it is recommended that the education sector take the lead, joint industry, enterprises, colleges and universities and third-party assessment agencies to set up a committee specializing in this type of teacher qualification certification. In this way, the certification standards will appear more professional and authoritative, and their results will be recognized by society. On this basis, it is also necessary to establish a set of more comprehensive certification standards, which should include solid subject knowledge, teaching and research capabilities, the application of professional technology and the ability to transform practical experience into teaching resources. At the same time, it is also necessary to consider different situations to build a differentiated accreditation strategy, for example, teachers have a certain degree of practical ability, but there are differences in the level of competence; for example, the content and form of practice in liberal arts and engineering are very different, so the accreditation system needs to be detailed and comprehensive, but also can be accurately positioned. Vertically, teachers can be categorized into primary, intermediate and advanced levels according to their actual competence level, and horizontally, they can be divided into different categories such as engineering and liberal arts. This differentiation strategy not only takes into account personal development, but also greatly avoids the problem of "certification only". The certification process should also be more standardized, and the whole process should cover four stages: declaration, preliminary examination, defense and final examination, and the whole process adopts blind examination, complaint and review mechanism to ensure the fairness and impartiality of the whole process. In order to adapt to the changes in society, it is also necessary to have a dynamic adjustment mechanism, and through regular review and assessment to audit teachers, teachers who fail to meet the continuing standards should be adjusted or disqualified in a timely manner, thereby ensuring the overall quality of the

teaching force.

4.2 Improving "Dual-Teacher" Teacher Training System and Promoting the Sustainable Development of the Staff

In order to promote the sustainable development of the "dual-teacher" teachers, it should be centered on the key links shown in Fig. 2, and form a benign closed-loop cycle of continuous improvement. When formulating the training program, the school should combine the training program of "dual-teacher" teachers with the long-term development plan of the school, and also pay attention to the personalized training program tailored to the individual situation of the teachers, so as to truly achieve the long-term effectiveness of the plan while meeting the individual needs of the teachers. In terms of training content, it should be combined with teachers' knowledge of the actual situation, in addition to the basic concept of cutting-edge education, but also need to understand the industry dynamics and the latest technology skills, to ensure that the concept, knowledge and skills to keep pace with the times. In the form of training to increase the practical aspects, such as participating in projects in the workshop or internships in enterprises, you can also open online learning courses, so that compared with the traditional form of training lectures and discussions, the interest of teachers will be greatly increased, and each teacher can find a learning path suitable for their own. In order to assess and verify the training results of teachers, a fair and objective evaluation of the results is needed, and finally, based on the results of the evaluation to feedback the results, and then adjust the training program

in a timely manner, to form a benign closed-loop cycle.

Of course, it is not enough to rely solely on the school's own strength in teacher training, but also need the strong support of the government, such as increasing financial support, the introduction of policies to promote the cooperation between enterprises and universities, so that the government, universities, enterprises can benefit from the three sides, and ultimately achieve the goal of win-win situation.

4.3 Improving the Diversified Evaluation and Incentive System of "Dual-Teacher" Teachers, and Stimulating Teachers' Internal Vitality

From the relationship between the integration of industry and education, applied undergraduate colleges and universities and "dual-teacher" teachers mentioned above, we can see that "dual-teacher" teachers are the backbone of applied undergraduate colleges and universities as well as the practitioners of the integration of production and education. In order to arouse the enthusiasm of this group and stimulate their vitality, a set of feasible evaluation and incentive system is needed. The content of the evaluation system should be closely related to their professional knowledge and skills, including basic teaching and research ability, practical ability, technological innovation and application ability, etc. for comprehensive and balanced content. In the evaluation of the dimensions, we can not rely solely on the school side, but also need students, peers and representatives of enterprises and other parties to carry out a comprehensive evaluation, so as to ensure that the evaluation system is fair and impartial. Incentive mechanism is the key, we

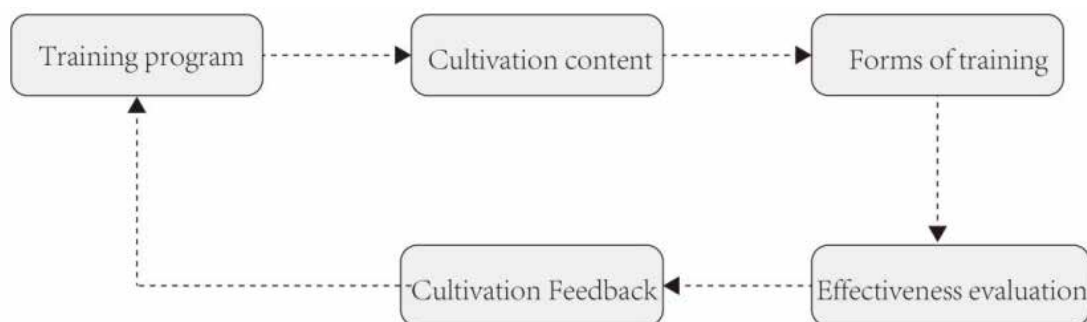


Figure 2 Key links of the teacher training system

can set up a "dual-teacher" teachers special incentive fund, can also increase the practice funds and subsidies, or provide career advancement opportunities, of course, can also provide a variety of other forms of material incentives. In addition to material incentives, spiritual incentives are also indispensable, such as honorary awards or overseas training opportunities, so that teachers feel respected and recognized from their hearts. Emotional incentives can also be provided, such as organizing regular team activities to enhance their sense of belonging. In short, with a diversified evaluation and incentive system, teachers' inner vitality can be fully mobilized.

5 Conclusion

Under the background of the in-depth integration of industry and education, if applied undergraduate colleges and universities want to cultivate talents that meet the needs of the society, "dual-teacher" teachers play a crucial role. However, there are many problems with the "dual-teacher" teachers in these colleges and universities at present, such as the vague certification standards, the training system needs to be improved, and the evaluation and incentive mechanism is not sound, etc. For these problems, this paper puts forward the following recommendations. For these problems, this paper puts forward targeted recommendations and measures to promote the construction and development of "dual-teacher" teaching staffs in applied undergraduate colleges and universities, to improve the quality of talent cultivation, and to meet the social demand for talent. Looking ahead, with the development of society, the connection between education and industry will become closer and closer, and the "dual-teacher" teaching staff will face more challenges and opportunities in the process of construction, and we need to continue to explore and innovate to ensure that the "dual-teacher" teaching staff can keep up with the new era of higher education and social development. At the same time, we need to explore and innovate continuously to ensure that the "dual-teacher" teaching force keeps pace with the development

of higher education and society in the new era.

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