DOI: 10.66069/ojspub.1137261004

Reforming the Evaluation System for "Double Qualified" Teachers: A Practice Oriented Approach

Songbai Li*, Yanyan Ming

Chongqing Institute of Engineering, Chongqing, China
**Correspondence Author, leasber@foxmail.com*

Abstract: ***The evaluation of "double qualified" teachers is generally faced many difficulties, such as the evaluation standard valuing certificate but ignoring ability, the evaluation dimension valuing scientific research but ignoring practice, the process evaluation not paying enough attention, the evaluation subject almost has no external enterprise participation, and the application of evaluation results lacks motivation. The deep root of these difficulties lies in the path dependence of academic evaluation paradigm. On the basis of reflecting on the essence of "double qualified" teachers, this study puts forward a practice oriented reform idea of teacher evaluation. Around the core elements of evaluation subject, evaluation method, evaluation cycle, and evaluation results, an evaluation system based on project practice is constructed. The research shows that the key to the reform of "double qualified" teacher evaluation is to distinguish the essential differences among "certificate", "experience" and "ability". In terms of evaluation criteria, a hierarchical classification standard system can be established; In terms of evaluation methods, project defense and practical operation can be used instead of material identification; In terms of evaluation subject, a stable cooperative evaluation mechanism can be established between schools and enterprises. The ultimate goal of evaluation reform is to guide teachers to master the teaching ability of "teaching people how to fish", which not only needs practical teaching ability, but also needs to cultivate students' thinking mode and lifelong learning ability.***

Keywords: "Double qualified" teachers, Evaluate reform, Practice oriented**.**

1. Introduction

According to the plan of the ministry of education on the classified management of colleges and universities, China's higher education can be divided into three types: research-oriented, application-oriented, and vocational skill-oriented. Among them, application-oriented colleges and universities are mainly engaged in the cultivation of applied talents at the undergraduate level or above serving the economic and social development, and are engaged in the research of social development and scientific and technological application. Vocational skill-oriented colleges and universities are mainly engaged in the cultivation of skilled talents at the junior college level for front line positions in production, management, and service, while actively carrying out or participate in the reform and innovation of technical services and skills application. That is, the Application-oriented undergraduate universities undertake the core mission of cultivating high-quality application oriented talents and serving the regional economic and social development. It requires teachers to have two abilities: both a solid theoretical foundation of the discipline, and strong practical teaching ability and industrial service ability.

However, the classification of the types of colleges and universities has not brought about changes in the teacher evaluation system which is fully consistent with it. There is no core difference between the teacher evaluation system of some application-oriented undergraduate colleges and universities and other types of universities, and the main yardstick is still papers, projects and scientific research funds. Although the requirements of "double qualified" literacy have been written into various documents, the evaluation criteria have not been really reconstructed and need to be further improved.

What is more worth thinking about is the essential connotation of "double qualified" teachers. In an ideal state, teachers in the field of natural science research in colleges and universities should basically have the ability of engineers and become "engineer type teachers". However, the reality is that the recognition standards of "double qualified" teachers are uneven. In the actual process of identifying "double qualified" teachers, some colleges and universities have deviations in the implementation process. For example, some colleges and universities just require double certificates, that is, if a teacher obtains the intermediate and above technical titles of university teachers and the intermediate and above professional titles of the industry at the same time (double certificates), he can obtain the qualification. But in reality, the process of obtaining some certificates is too easy. They often assess the practical requirements and abilities in the form of theory examination. People who take the examination can pass by remembering the answers, which leads to a gap between the certificate and the actual ability. On the other hand, even if some teachers have enterprise experience before entering the university, how to continue to maintain the skill level used by the enterprise after entering the university is a more worth thinking problem. Education and teaching should not be limited to theoretical courses. It is essential to practice and understand the current needs and uses of enterprises. However, how to change it from individual consciousness to system requirements through system design is the core proposition of evaluation reform.

2. Problems and Reflections on the Evaluation of "Double Qualified" Teachers

At present, there are still two extreme tendency misunderstandings in the evaluation of "double qualified" teachers: "too low standard" and "skill first." One extreme is that the standard is too low. For example, when identifying "double qualified" teachers, one of the conditions is that if the teacher has a professional qualification certificate, he can be identified as a "double qualified" teacher. This tendency simplifies the identification process of "double qualified"

teachers to material review, ignoring that the evaluation and identification of "double qualified" teachers is essentially the evaluation and identification of teachers' practical ability. The other extreme is overemphasizing skills. Teachers are required to master the most cutting edge technology, and even ignore other factors of the applicant during recruitment, such as educational background and previous work evaluation. The recruitment of universities, especially the recruitment of "double qualified" teachers, should not only depend on whether teachers currently master a certain skill, but also on the growth of their mastery skills, because the growth of mastery skills can better teach students to draw inferences from one instance and better continue learning in technical iteration.

In addition, when identifying "double qualified" teachers, we should pay attention to that "double qualified" teachers do not exist only in the field of natural science, but also in the field of social science. Taking human resource management as an example, a teacher who has worked in the field of human resources for many years and transferred to universities is essentially different from a teacher who has always focused on theoretical research in terms of vision, mode of thinking and depth and breadth of teaching content. The experience accumulated in practice urges teachers to consider more systematic knowledge chain. This kind of systematic thinking growing out of practice is precisely the core embodiment of "double qualified" teachers' ability.

There is also the problem of how to ensure the practice orientation of "double qualified" teacher evaluation from the perspective of university system design. Highlighting the practice orientation of evaluation means that teachers must practice deeply while teaching theory. However, the problem is that this practical ability may not automatically obtain external recognition. A teacher who has long-term practical training and holds double certificates and another teacher who has no practical training but also holds double certificates may both be recognized as "double qualified" teachers. In this case, how can teachers' evaluation or identification truly reflect the practice orientation? The answer is that colleges and universities should reflect the practice orientation when designing the system and implementing the assessment. In terms of system design, teachers are required to enter the practice base to complete practice projects, and the practice base can be jointly built by schools and enterprises on campus. In terms of assessment requirements, after entering the base for training, teachers must prove their practical ability through relevant assessment. The method of proof can be defense and practical operation. It is a more effective way to assess the ability of "double qualified" teachers through the quality of practical projects and defense completed during the training period.

Finally, some universities did not distinguish between "ability" and "experience" in the identification of "double qualified" teachers. In the judgment of practical ability, we need to clearly recognize that experience is not equal to ability. A teacher who has many years of enterprise experience can only show that he has this experience, but it does not mean that he has the practical ability to transfer and teach students. The design of the evaluation system must be based on this sober understanding. The evaluation is practical ability, not practical experience.

3. Research Perspective and Research Ideas

Based on the above analysis, this study proposes "highlighting practice orientation" as the core proposition of the reform of "double qualified" teachers' assessment and evaluation, and analyzes the core elements of the evaluation system, such as the evaluation subject, evaluation method, evaluation cycle, and the application of evaluation results. At the same time, it discusses the basic proposition of the reform of the "double qualified" teachers evaluation system, that is, what is the purpose of evaluation?

The purpose of the evaluation of "double qualified" teachers is not to label teachers as a "double qualified" teachers, but to truly improve teachers' practical teaching ability, that is, teachers have the ability to teach theoretical courses, and also understand their application in practice, and have the ability to teach the method of "combining theory with practice". Based on this, the focus of the reform of the evaluation system is not the evaluation object and evaluation purpose (these two dimensions are relatively clear), but the evaluation subject and evaluation method. Under the background of more and more attention to the practical teaching ability, whether they have the practical teaching ability or not is even related to the professional survival and development of teachers. Those who do not have the practical teaching ability and are unwilling or unable to improve through training will face the result of being eliminated.

4. Theoretical Support of the Practice Oriented "Double Qualified" Teachers Evaluation System

4.1 Clarification of the Connotation of "practice oriented": Practical Experience ≠ Practical Ability

As an evaluation idea, "highlighting practice orientation" first needs to make a clear definition of the core concepts. There are differences between practical ability and practical experience, which is the logical starting point of the reform of the evaluation system. In the judgment of practical ability, we often face a problem: it is difficult to have a very scientific quantitative index for the judgment of "ability". We often identify the ability as "whether it can" rather than "whether it reaches a certain degree of accuracy", that is, when judging whether a teacher is "able" to teach students to do practical projects, it is difficult for us to determine whether his ability is "50 points" or "75 points". Because of this, people tend to fall back and take second place, replacing "ability" with "experience". However, experience is not equal to ability. A teacher with many years of enterprise experience can only show that he has this experience, but does not mean that he has the practical ability to transfer and teach. The "double qualified" teacher evaluation system must move from "experience identification" to "ability certification".

Based on the above understanding, the specific connotation of the practice oriented " double qualified" teacher evaluation system should include two levels: first, the evaluation standard should shift from "certificates and experience" to

"project completion ability" , and replace the statistics of the number of certificates with the tasks and outputs of the real projects, replace the accumulation of temporary employment in enterprises with the level of teachers' solving practical problems and the effect of guiding students' practice. Second, the evaluation function should change from "label identification" to "development guidance". Evaluation is not only to give teachers the title of "double qualified" teacher, but also to guide their continuous improvement and plan their career development.

4.2 Supporting Theory

Competency-Based Assessment Theory. Competency-based assessment emphasizes that the evaluation should focus on the actual performance of individuals in the real situation, rather than qualifications or certificates. For the "double qualified" teacher, this means that the focus of evaluation should be shifted from "whether it have a certificate" to "whether it can solve practical problems" and "whether it can effectively guide students' practice".

The Stage Theory of Teachers' Professional Development. Teachers' professional development can be characterized by stages, and the ability structure and evaluation criteria of teachers at different stages should be distinguished. The practice oriented evaluation recognizes the differences of teachers' practical ability at different development stages, and sets gradient practical achievement requirements for "double qualified" teachers at different ability levels.

4.3 The Differences of Relevant Projects Before and After the Reform

Based on the above analysis, there are the following differences before and after the evaluation reform of "double qualified" Teachers:

Dimension	Before reform	After reform
Evaluation basis	Certificates and materials	Project completion quality
Core logic	Experience=ability	Prove ability with project delivery
Evaluation method	Material review	Project Defense+practical assessment
Evaluation subject	School administrators	Schools and cooperative enterprises
Ability understanding	Static label	Dynamic growth

5. Framework Design of "Double Qualified" Teacher Evaluation System with Practice Orientation

Based on the above analysis, this part focuses on the core elements of the evaluation system, such as the evaluation subject, evaluation method, evaluation cycle, evaluation standard and result application, to build a practice oriented "double qualified" teacher evaluation system.

5.1 Evaluation Standard of Hierarchical Classification: from "Can" to "Level"

"Double qualified" teachers need to be classified, but the classification should not be based on the "ability degree" which is difficult to accurately quantify, but should be based on a clearer ability orientation.

It is classified by capability orientation, rather than quantified by capability level. In terms of practical ability, it is difficult for us to accurately measure whether we have reached the level of 50 points or 75 points, but we can relatively clearly judge whether a teacher "can" undertake a certain type of project. Therefore, we can change a way of thinking: according to the "ability" and "proficiency", teachers can be divided into three categories: those who specialize in practical teaching, those who specialize in theoretical teaching, and those who undertake both practical and theoretical teaching. These three types of teachers have their own emphasis, but they are all "double qualified" teacher, corresponding to different assessment requirements and incentive methods.

The national identification standard should be regarded as "baseline" rather than "ceiling". Having a certificate does not mean that he has practical teaching ability, but those who have 2 years or more of front-line experience in enterprises within 5 years can maintain their practical ability to a great extent. This understanding can be translated into the gradient design of the assessment and evaluation of "double qualified" teachers: take the national standard as the basic level, and set higher standards on this basis, and higher levels correspond to higher incentives. This hierarchical design means that the evaluation system should achieve hierarchical classification on the system, and in order to support hierarchical classification, schools need to create conditions for teachers to reach a higher level of standards, which need to be reflected in the school system.

5.2 Evaluation Subject: Stable School Enterprise Cooperation Mechanism

The choice of evaluation subject is one of the key points of the reform of the "double qualified" teachers' evaluation system. How to select the evaluation subject? Evaluation subjects may include schools or enterprises, with priority given to enterprises that maintain stable cooperative relations with colleges and universities.

Evaluation subjects from colleges and universities should have corresponding industry experience to evaluate the practical teaching ability of "double qualified" teachers, rather than relying solely on administrators or teachers who have never left the campus. In the traditional evaluation model, some evaluators lack practical ability and are difficult to make accurate judgment of practical ability.

The evaluation subject from the enterprise should have the principle of stability. Enterprise evaluation is an indispensable choice for the practice oriented "double qualified" teacher evaluation. The selected cooperative enterprises should not be changed frequently, and enterprises with outstanding business should be selected for long-term cooperation to establish a stable school enterprise evaluation cooperative relationship. The advantage of this method is that the long-term partnership will not make the enterprise's participation in the school's teacher evaluation a "temporary work", the cooperation between the two sides will be more mature, and the evaluation

content will gradually become perfect, which will help the accumulation and continuity of the evaluation system, and better ensure the reliability and effectiveness of the evaluation.

The classification and combination of evaluation subjects: the internal evaluation (from universities) focuses on teachers' teaching ability and teaching transformation ability, and the external evaluation (from enterprise) focuses on teachers' practical operation ability and project completion ability. The two sides of the university and the enterprise give their own evaluation opinions, form mutually verified evaluation information, and avoid the deviation of single subject evaluation.

5.3 Evaluation Method: Multiple Assessment Centered on Project Defense

The evaluation method is another focus of the reform of the "double qualified" teacher evaluation system. The practice oriented evaluation should not be limited to the review of the written materials provided, but should take the project practice as the carrier and establish the assessment method with the project quality evaluation and project defense as the core.

The quality of practical projects should be the core basis of evaluation. Based on the completion quality of the practice project, it also evaluates the consistency of the project with the teaching plan, as well as the combination of theory and practice. Neither theory is theory, nor practice is practice. The two sides cannot be separated, nor can practice only focus on project completion and ignore teaching students. The "double qualified" teacher is first and foremost a teacher. Without the cultivation of students, there is no improvement in practical ability.

Project defense is the key link of the evaluation system. The defense expert group is composed of teachers with industry experience, technical backbones of cooperative enterprises, and industry experts. The teachers make statements, display results, and answer expert questions on the practical projects they have completed. The content of the defense should include: the technical route of the project, the key problems to be solved, the project achievements and their application value, the scheme for the transformation of the project achievements into teaching, the participation and harvest of students in the project, etc. The form can effectively examine teachers' practical depth, expression ability and teaching transformation ability. In addition to the defense, sometimes the actual operation assessment can be added according to the actual situation, and the teacher can show the practical ability in the real scene.

5.4 Evaluation Cycle: Combination of Project-based Flexible Assessment and Regular Review

How often should the "double qualified" teacher assessment be conducted? This is a question that needs to be reconsidered. The traditional annual assessment has limitations. Based on the practice oriented "double qualified" teacher assessment, the annual assessment cycle does not coincide with the project completion cycle. Sometimes one year is not enough to complete a deep practical project, and the annual assessment tends to lead to the formal tendency of "collecting materials for assessment".

A more reasonable approach is to determine the evaluation node according to the project cycle. Teachers receive a phased evaluation after the completion of a practice project to see how many projects have been completed during a particular cycle and how good the quality of each project is. The completion of a project is not for assessment, but for the quality of the project. This design makes evaluation serve practice, not practice serve evaluation.

In addition to implementing flexible assessment according to the completion of the project, regular comprehensive review should also be set up. It is recommended to conduct comprehensive review every 2-3 years to comprehensively evaluate the number and quality of projects completed by "double qualified" teacher in the evaluation cycle, the maintenance and improvement of practical ability, and the effectiveness of the transformation of practical achievements into teaching. At the same time, it is also necessary to regularly review and keep up with the update and iteration of national standards.

5.5 Evaluation Results: Applied in Both Incentive and Constraint Aspects

The application of evaluation results is the key link to make the evaluation system effective. Colleges and universities should directly link the evaluation results of "double qualified" teachers with the evaluation and employment of professional titles, salary incentives, training and development.

In terms of positive incentives, the evaluation results should be an important basis for the evaluation of professional titles, and teachers with high-level practical teaching ability should be given priority in the evaluation of professional titles; Set up gradient honor and treatment systems such as "senior double qualified teacher", "one star double qualified teacher" and "two star double qualified teacher", and different levels correspond to different performance allowance standards; The evaluation results of practical teaching ability will be also used as an important basis for the allocation of development opportunities such as evaluation of excellence and promotion. In terms of reverse constraint, we should set up a mechanism to help and rectify those who fail to pass the evaluation, rather than just punish them. Specific measures include: arranging targeted practice repair in enterprises, participating in special practical ability training projects, and providing dual Mentors (respectively from the school and the corresponding school enterprise cooperative enterprise) for follow-up guidance. After the expiration of the assistance period, reassessment and evaluation will be conducted, and those who are still unqualified will be adjusted or enter a longer rectification period. This mechanism reflects the developmental function of evaluation: to help teachers gradually become better, rather than simply eliminated.

In terms of dynamic management, we should establish a

dynamic adjustment mechanism of "double qualified" grade that can be recognized and canceled, and avoid the static management of "double qualified" teachers' identity after they have obtained a recognition result. Regularly review the evaluation results to maintain the dynamic vitality of the "double qualified" teachers team.

6. The Institutionalization Path of Teachers' Enterprise Practice: The Precondition of Evaluation Reform

Participating in enterprise practice is the core way to improve the ability of "double qualified" teachers, and it is also the prerequisite for the implementation of practice oriented evaluation. If "double qualified" teachers lack high-quality enterprise practice, evaluation will become passive water. Therefore, while discussing the reform of the evaluation system, we must simultaneously design the institutionalized path for teachers to actively participate in enterprise practice.

6.1 Time and Mode of Teachers' Enterprise Practice

A question worth pondering is: how long will it take for a newcomer to become familiar with the enterprise and the position after joining a company? Some people think that it will be familiar with the handover work in a week soon. But in fact, it doesn't. it may take 2 years to be really familiar with an enterprise and position. At first, familiarity is relatively fast, but after familiarity, a lot of time will be occupied by repetitive work: repetitive things, repetitive methods, and repetitive socializing, which is also the reason why many people feel familiar with an enterprise quickly. However, in addition to these repetitive work, there are still some deeper issues and key nodes that need time to settle before they can be mastered slowly. The reason why this mastery came late may be that the running track of the whole system has not been fully presented, or it may be that after doing repetitive familiar things, the probability, time and energy of contacting new things have become less, which is somewhat similar to the diminishing marginal effect.

So, how many times should teachers spend to get familiar with the enterprise when they participate in enterprise practice? The enterprise practice opportunities that general teachers can have are mainly through horizontal projects, or to participate in enterprise practice in the winter and summer vacation. However, the probability of real in-depth participation is low, and most of them can only observe or do some basic work.

6.2 Off-the-job Practice Based on Stable School-enterprise Cooperation

A recommended approach is to arrange for teachers to take turns undertaking off-the-job practice at enterprises, with each practice lasting a relatively long period of time away from teaching. The enterprises involved should remain essentially stable.

Specifically, the school can establish a long-term and stable cooperative relationship with a number of high-quality enterprises with in-depth cooperation to arrange teachers to participate in practice. Teachers should go to the cooperative enterprise in turns to practice, and the practice cycle should be half a year to one year, so as to ensure that teachers have enough time to deeply participate in the real projects of the enterprise. A given teacher should stay with the same enterprise for practice over a defined period (e.g., 3–5 years), avoiding fragmented arrangements that shift from one enterprise to another each time. The advantages of this kind of stable enterprise participation in practice lie in that teachers can really integrate into the operation system of the enterprise and deeply participate rather than simply do some basic affairs; Enterprises and schools have established mutual trust and tacit understanding, and the arrangement of practice content is more suitable for the needs of teachers' ability improvement; Enterprises are also willing to invest in guidance because it is a long-term cooperative relationship rather than a temporary arrangement.

6.3 The System Design of Win Win Between Universities and Cooperative Enterprises

Teachers' participation in the practice of cooperative enterprises has obvious win-win effects: for enterprises, the school arranges teachers to practice, which is equivalent to the enterprise adding a labor force that does not need to pay wages and pay social security, which is very cost-effective. For universities, teachers have obtained valuable practical training opportunities in the real scene of enterprises, and their practical ability has been maintained and improved. For teachers, off job practice avoids the energy dispersion of teaching and practice, and makes it possible to deeply participate in real projects of enterprises.

Of course, the effective operation of this mode needs institutional guarantee at the school level. Universities need to establish a plan for teachers to practice in enterprises in turn to ensure that teachers of all majors can have the opportunity to participate in off-duty practice; At the same time, universities need to clarify the policy of reducing teachers' teaching workload during the off-duty practice to eliminate teachers' worries. In addition, universities also need to establish the evaluation and identification mechanism of practical results, so that the practical experience can be transformed into quantifiable assessment results.

7. Guarantee Mechanism for Reform Implementation

7.1 System Guarantee: Revise Assessment Management Measures and Establish Practice Orientation

The practice oriented "double qualified" teacher evaluation reform needs the systematic adjustment of human resource management system in Colleges and universities. The primary task is to revise the current assessment and evaluation methods for teachers, and transform the practice oriented concept into an operable system. It includes: modifying the professional title evaluation conditions, including the quality of practice projects completed in the cooperative enterprise and the results of project defense into the core evaluation indicators; Adjust the performance distribution scheme and establish differentiated performance distribution standards linked to the practical ability of "double qualified" teachers; Revise the post employment method, and take the practical teaching ability as the basic condition of post employment.

More importantly, the institutional design of colleges and universities needs to be able to guide teachers from completing practical tasks to sustainable development. A teacher's mastery of a practical ability does not mean that he can stop. The guidance of the system should encourage teachers to constantly make breakthroughs. Those teachers who can't make breakthroughs in their posts for a long time and only rely on time accumulation to obtain low threshold skills are difficult to go far in the development path of "double qualified" teachers, because the skills they master are easy for students to learn, and the skills they master are easy to be eliminated by technological change.

7.2 Platform Guarantee: Build Stable Cooperative Enterprises as Practice Bases

The improvement of teachers' practical ability in enterprises largely depends on whether there is a high-quality practice platform. Application oriented Undergraduate Colleges and universities should build a stable practice base for teachers' enterprises relying on industrial colleges, cooperative enterprises, industrial parks, etc. The key is stability. It is not suitable to change cooperative enterprises frequently, but to select a number of high-quality enterprises to establish long-term cooperative relationships, so that teachers can deeply participate in real projects in a stable enterprise environment. At the same time, such practices as "rotation plan for teachers to practice in enterprises", "teachers serving as vice president of science and technology in enterprises" and "enterprise engineers serving as industry professors in universities" should be encouraged and implemented to provide different types of platform guarantee for teachers' off-duty practice.

7.3 Operation Guarantee: Continuously and Dynamically Optimize the Evaluation of "double qualified" Teachers According to the Industrial Reform

With the acceleration of industrial technology iteration, the requirements for the practical ability of "double qualified" teachers also change. The evaluation index system should change from time to time after being determined, and establish a dynamic adjustment and update mechanism. This update mechanism need to regularly collect the needs of cooperative enterprises for the ability of "double qualified" teachers, and update the evaluation elements according to the trend of regional industrial structure adjustment and technological change, conduct statistical analysis on the assessment data every year, identify the applicability of the evaluation system, and timely correct unreasonable evaluation standards.

7.4 Cultural Guarantee: Reshaping the Value Consensus of "double qualified" Teacher Evaluation

The deep resistance of reform lies not in the design at the technical level, but in the value consensus at the conceptual level. Application oriented undergraduate colleges and universities need to establish a core consensus, that is, the evaluation of "double qualified" teachers is not only to classify and grade teachers, but also to ensure that students obtain high-quality practical training. At the same time, the designer of the evaluation system should also realize that if the evaluation system only emphasizes the current skills of teachers and ignores the growth of teachers, the result will either lead to frequent brain drain or ossification of evaluation standards. A truly excellent "double qualified" teacher should have the ability to teach people how to fish, that is to say, he not only has the practical ability, but also can teach students the idea and method of drawing inferences from one instance. This is the goal of "double qualified" teacher assessment and evaluation reform.

8. Conclusion

The reform of the "double qualified" teachers evaluation system that emphasizes practical orientation is essentially a deep transformation of the evaluation concept for university teachers. The core proposition of reform is not to add a few indicators, but to reconstruct the evaluation logic, shifting from "what certificates and experiences do you have" to "what projects can you complete and what problems can you solve".

The key dimension of reform lies in the evaluation subject and evaluation method. In terms of evaluation subject, it is necessary to establish a stable school enterprise cooperation relationship, allowing people who truly understand the industry and practice in the cooperative enterprises to participate in evaluating and guiding the practical ability of teachers; In terms of evaluation method, it is necessary to replace simple material identification with project defense, practical assessment, etc. so that teachers can demonstrate their abilities in real projects. It is necessary to clearly distinguish the essential differences between "certificates", "experiences" and "abilities" and avoid equating labels with substance.

More fundamentally, applied undergraduate universities must have a clear understanding of their own positioning: applied undergraduate universities are not vocational skills colleges. Universities should not only enable students to master practical skills, but also equip them with the ability to think critically and engage in lifelong learning. The ultimate goal of "double qualified" teachers evaluation is to guide teachers to possess both of these abilities: on the one hand, they have the ability to complete actual enterprise projects and guide students to participate in such real projects; on the other hand, they can also extract methodologies in practice and transmit thinking methods in teaching. Only in this way can "double qualified" teachers become a powerful guarantee for the quality of applied undergraduate education, rather than a mere formality label.

Acknowledgments

This current study was supported by the Education and Teaching Reform Research Project of Chongqing Institute of Engineering (Grant No.: JY2024105).

References

[1] Qiao Ning, Liu Jixiang, Shi Shuxian, Su Haijia, Zhang Yuliang. The New Pattern of Material Science and Engineering Major Production Practice by Using

Practical Training Base on Campus. Research and Exploration in Laboratory.Vol.37 No.2.Feb.2018.

[2] Qu Xingtian, Wang Hongyi, Liu Haizhong, Sun Huichao, ZhangKun. Construction of Intramural Production Practice Base Combined with the Teaching of Computer Aided Technology. Research and Exploration in Laboratory.Vol.39 No.7.Jul.2020.

[3] Wang Xinwu, Wang Beifang. Construction and application of three-in-one practical teaching platform in transformation of new undergraduate colleges. Experimental Technology and Management. Vol.35 No.11 Nov. 2018.

[4] Yang Feifei. Innovative Path of News Communication Education Guided by Industry. Youth Journalist. 2021(18).

[5] Saad, Aslina; Zainudin, Suhaila. A review of teaching and learning approach in implementing Project-Based Learning (PBL) with Computational Thinking (CT). Interactive Learning Environments.Vol.32 No.10 2024.

[6] Wei Lina, Shen Wenqin, Chen Hongjie. Study on the Value Added of Internship to the Employment Quality of Engineering Masters. Journal of Graduate Education. No.6 Dec. 2023.