

The Practical Dilemmas and Optimization Pathways for Integrating the Craftsmanship Spirit into Higher Vocational Education

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Abstract: The spirit of craftsmanship in vocational college students is primarily cultivated through on-the-job internships, which function as a key practical platform. Taking Wuhan City Vocational and Technical College as the research subject, this paper systematically identifies five major practical challenges in cultivating the spirit of craftsmanship during on-the-job internships: insufficient understanding of the connotation of this spirit, an imbalance in the provision of foundational professional education, a shortage of qualified instructors for internship and practical training, a disconnect between theoretical teaching and workplace practice, and the absence of a collaborative support mechanism involving multiple stakeholders. After that, the paper puts forward five practical paths for improvement, which include top-level institutional planning, school resource development, raising teacher quality, school-company joint training, and evaluation system reform; these paths can serve as practical guidance for vocational colleges to better develop the spirit of craftsmanship through on-the-job internships.

Keywords: On-The-Job Internship; Craftsmanship Spirit; Higher Vocational Education; School-enterprise Collaboration; New Quality Productivity

1. Problem Statement

Students in higher vocational colleges have their own learning habits, ways of thinking, knowledge backgrounds, and learning features, so practical activities are the best channel for them to internalize the craftsman spirit [1]; on-the-job internship is a model where students, after finishing most of their basic courses and professional skill training in school, directly take part in production work in places related to their

majors and fully carry out their internship duties, and it is an important practical part of specialized course teaching and learning in such colleges; therefore, deeply combining the development of the craftsman spirit with the on-the-job internship stage is a key way for these schools to carry out the idea of "cultivating both morality and professional ability" and to support the growth of new-quality productivity.

Current research on how to develop the craftsman spirit is still not enough; researchers mostly focus on aspects such as adding ideological and political education into courses and building campus culture, while studies on development paths tend to be theoretical, and empirical research covering the whole on-the-job internship process is still quite limited; hence, carrying out empirical research to systematically find and analyze the common problems in fostering students' craftsman spirit during on-the-job internships has important practical value for improving the effect of such development and advancing the high-quality development of vocational education.

2. The practical challenges in fostering the spirit of craftsmanship within on-the-job internships

Based on questionnaire surveys conducted among students from the Class of 2022 and Class of 2023 at our institution, corporate feedback, and an analysis of internship records, there are five major core contradictions in the current cultivation of the craftsmanship spirit during on-the-job internships.

2.1 Superficial Understanding of Core Concepts; Inadequate Theoretical Foundation for Fostering the Spirit of Craftsmanship

Building a belief system is understood as the main part of identity; through this process, a person uses some basic beliefs to see the meaning of an object, and then a group of

complex beliefs is formed, which help build a relationship between the person and the object [2]; identity formation is the first step and base for real practice; if students recognize, accept, and feel proud of their craftsmanship identity during their school learning and internships, then they will hold themselves to the standards of a craftsman and work toward that goal; in this way, this identity becomes their personal value.

First, students at higher vocational schools do not have a clear understanding of the craftsman spirit; these students are still developing their job awareness, social awareness, and personal values; the survey shows that 45.2% of them see job duties mainly as technical work, not as showing the craftsman spirit, such as being dedicated to one's role and always trying to do better; this shows that their understanding of the real meaning of the craftsman spirit is still shallow.

Second, this is influenced by the relatively low social acceptance. Vocational college students, who already lack a clear and correct understanding of their own situation, are further impacted by the low social recognition they receive. For one thing, conventional values around career picking play a role, including the idea that excellent school results can secure civil-service jobs. For another, industrial advancement in quite a few regions cannot adequately tackle employment troubles for local vocational college students, where both the job-hunting climate and post-graduation job standards remain far from ideal. As a result, vocational college students generally exhibit resistance toward the "craftsman" identity. In 2021, questionnaires were given out by the Education Science Department of China Youth Daily to students at vocational colleges across China, and the purpose was to know their job plans after graduation; the survey results showed that about 63.97 percent of the students who answered said they would not choose frontline or starting jobs after school, and these jobs include working in factory workshops, at construction places, or on shop floors; besides, more than 60 percent of the respondents also said they did not want to be seen as "blue-collar" workers after they graduate [3].

Moreover, teaching the spirit of craftsmanship in theory in higher vocational schools does not have a clear and connected system; when designing courses, the theory about craftsmanship spirit is mostly put into moral education courses and career-related courses,

often in a scattered way, just adding a separate part about craftsmanship spirit into the existing course system; but there is no deep and smooth connection across all courses, developing craftsmanship spirit is often only talked about in theory, not effectively connected to practice in teaching, and so it does not follow a systematic way.

2.2 Imbalanced Provision of Specialized Course Instruction; Insufficient Precision in the Cultivation of the Craftsman Spirit Within Professional Practical Training Components

First, the design of specialized courses is not accurate enough; on one hand, the main courses do not cover all necessary content, practical training hours are too few, and courses that aim to build abilities are given less importance. Taking the English Education program in our school as an example, specialized teaching mainly focuses on teaching theory, while there is not enough time for oral communication practice and practical activities in the classroom; as a result, students find it hard to develop a clear and detailed understanding of professional work, it is not easy for them to adapt quickly after they enter the job, and they are even less likely to hold themselves to the high standards of a craftsman's spirit. On the other hand, the way practical training parts are set up is not completely suitable; at present, practical training courses in vocational colleges pay too much attention to teaching specific hands-on operations, and at the same time, they often ignore how different stages of the whole work process should link together smoothly, and they also do not pay enough attention to building broader all-around abilities; as a result, these courses do not help students much in dealing with complete practical tasks from beginning to end, and there is a clear lack of training projects that need the combined use of knowledge from multiple subjects and different fields [4].

Second, there is a serious lack of teachers with both teaching and industry qualifications for specialized courses; full-time teachers usually have limited work experience in industry, and because of time, energy, and work duties, it is hard for them to get long-term, systematic, and deep chances to practice and learn in companies; as a result, their understanding of the newest industry practices and job quality standards often falls behind current industry levels, so teachers

mainly base their daily teaching on theoretical content; however, this way they fail to pass on the key spirit of craftsmanship and the pursuit of continuous improvement; besides that, teachers are usually busy with many routine tasks every day, and this busy schedule leaves them little time and energy for extra teaching work, so when they supervise student internships or give career guidance, their help often stays at a surface level, and they cannot always provide the specific support that would be most useful [5].

2.3 Insufficient Faculty Allocation for On-The-Job Internships and a Lack of High-Quality Guidance in Fostering the Spirit of Craftsmanship

First, the complex sources of teacher leadership cause different standards for the education of craftsman spirit; because there are not enough teachers, some instructors who supervise on-the-job internships are also campus teachers or administrative counselors, so instructors with different roles may understand the essence of craftsmanship spirit in different ways; furthermore, for courses in the same major, the teachers responsible for each course might not have the same expectations for hands-on professional abilities, and they could also use different standards to judge how students perform in this area, so the overall quality of teaching about developing a workmanlike attitude can be somewhat uneven across different classes; additionally, teachers in higher vocational schools have strong theoretical knowledge, but they often prefer theoretical teaching methods and styles, however, because they have limited industry experience and practical operation skills, it is hard for them to give students standardized, detailed, and deep guidance during practical teaching; this problem becomes especially clear for teaching parts that need solid industry knowledge and hands-on abilities, in such cases, teachers often find it hard to give students useful advice on how to deal with real workplace issues or learn about the newest tools and methods used in the field; as a result, students develop their practical skills more slowly, and this progress does not match what the industry expects from them [6]. Secondly, partner enterprises are not very motivated to take part in talent development, and this has led to gaps in important parts of the collaboration; for hardware resources,

companies usually do not want to open their main production lines for teaching activities, this is mainly because they worry that this will disrupt their normal output and also because they need to protect their confidential business information; on the other hand, the equipment used by schools for practical training is usually updated slowly, and its replacement cycle does not catch up with how fast industrial machines are upgraded in the real world; as a result, there is a clear gap between the training conditions and the conditions in actual workplaces [7]; in terms of human resources, the number of enterprise engineers with rich practical experience who actively guide students during on-the-job internships is still low, because of things like performance evaluation systems, limited time, and actual pay considerations.

2.4 The Curriculum System is Misaligned with Job Market Demands, Giving Rise to Structural Contradictions in the Cultivation of the Craftsman Spirit

First, the updating of professional textbooks and teaching content lags behind the pace of industrial advancement. The cycle for updating textbooks tends to be quite long, and the system for publishing them is still rather inflexible; traditional paper-based textbooks come with high costs when it comes to revisions, and the whole process of bringing out a new edition also takes a great deal of time, so it becomes hard for these materials to keep up with or show any recent developments in new techniques, updated procedures, or revised industry standards [8]. Meanwhile, the curriculum evaluation system is outdated, still primarily using the degree of mastery of knowledge points as its main assessment criterion, while lacking an effective framework for evaluating technical adaptability and innovative competence. When curriculum standards fall behind, this does not only cause a gap between what is taught and what employers actually need; it also holds back students from broadening their technical knowledge and limits their chances for long-term career growth, so there ends up being a basic misalignment between how talents are trained and what the industry requires. Then, after they start their internships, many students run into a common problem: they discover that they cannot really satisfy the expectations of their job positions.; as a result, their primary concern is merely ensuring they "can perform the required tasks,"

making it challenging for them to advance toward higher-level objectives—such as deepening their focus, rigor, or technical proficiency.

2.5 Insufficient Resource Integration; a Disconnect Exists in the Cultivation of the Craftsman Spirit

The government's comprehensive supporting policies remain inadequate. On one hand, local governments provide insufficient financial and physical support for practical training resources in higher vocational education; as a result, the hardware equipment that ordinary colleges and universities can provide is often not sufficient enough, so it cannot fully satisfy the needs of those practical training courses that require specialized facilities and hands-on exercises. On the other hand, effective ways for vocational colleges and companies to share information and work together are lacking; because of limits like local industrial conditions and pay levels, vocational colleges usually cannot find suitable business partners on their own, and they also cannot easily build working relationships with companies that match their teaching goals; so the government should act as a bridge to help this process happen.

The requirements for evaluating partner enterprises are quite loose; however, because of factors like long-term cooperation and complicated evaluation steps, the on-the-job internship stage is mainly used to check students; as a result, the evaluation of enterprises and their company mentors has not been fully set up as a system, made standard, or measured in numbers; to some degree, this causes problems like some job positions not matching well with students' majors, and company mentors do not give enough guidance, which makes it hard to build an environment that supports developing a strong craftsmanship spirit.

The evaluation and assessment system is still too rigid and simple; when evaluating on-the-job internships, the common way is to look mainly at project results, and scores are often decided only by checking the internship logs and the final summary reports, with no clear separation of how much weight the company should have and how much the vocational school should have in grading; besides, the evaluation standards seldom break down the assessment into smaller details about the growth of practical abilities or the development of a workmanlike attitude,

because of this, it is quite hard to get an accurate picture of how students' professional skills are really improving over time.

3. Optimal approaches to fostering the spirit of craftsmanship within the context of on-the-job internships

3.1 Strengthen Top-Level Design

At the government level, rules for school-enterprise cooperation should be made better, and support measures should be strengthened; the government should issue standardized management documents that clearly state the educational rights and responsibilities of vocational schools and enterprises in internships, and it should set up methods for selecting, grading, and removing participating enterprises, as well as a clear financial support system for school-enterprise cooperation; in addition, a shared information database should be created for local enterprises and higher vocational colleges, and this platform can help both sides find possible partners and solve problems about internships or employment. Higher vocational colleges are improving their on-the-job internship management systems; in internship assessment, professional ability evaluation has been added as a required part of internships; when choosing partner enterprises, schools check them according to four key points—job relevance, process standards, supervising teachers, and corporate culture—so that a long-term targeted cooperation mechanism can be formed.

3.2 Development of School-Based Resources

Higher vocational colleges can work together with partner companies to create internship-based course materials; based on local industry needs and immediate feedback from internships, the college and the company can jointly design these materials, such as co-developing tailor-made textbooks, short practical lessons for specific jobs, and a collection of craftsmanship examples; the textbooks should match real job needs and industry quality requirements, and should include stories of excellent company craftsmen; also, companies can send their experienced craftsmen to help record teaching sessions, and real workplace examples can be added to the digital course content as well.

3.3 Strengthen the Faculty Development

First, higher vocational schools should make the development of teachers' "dual-qualification abilities" a regular system; this can be done by regularly arranging teachers to take part in vocational skill training programs and by setting up a job shadowing system, so that in-house teachers' professional skills can be kept up to date through planned training methods. Second, schools should invite industry experts and skilled workers to campus; technical experts and master workers from local companies can be brought in as outside instructors for hands-on training, and these people can give special talks and show students how work is actually done on site, so through this process, students can better understand what skills and professional behaviors are expected for different jobs in the workplace. Third, using competitions to improve teaching can effectively help teachers grow professionally; teachers should be encouraged to join vocational skill competitions at different levels, and by taking part in teaching contests, they can learn the latest industry standards, support their own professional growth, and build a good foundation for their classroom teaching.

3.4 Expand and Deepen School-Enterprise Cooperation Channels

Higher vocational schools should expand diversified cooperation channels; they ought to work together with government bodies, industry groups, and local industrial parks, bringing all these different parties into a cooperative framework, and through this joint effort, they can set up linking platforms that help to expand the range of available job opportunities and also make the process of matching students with suitable positions more accurate and effective; schools and companies should also establish cooperation mechanisms for talent development, where partner companies can create special mentor positions supported by complete evaluation and incentive systems, so that mentors can provide ongoing guidance during the practical job training process, thereby effectively solving the problem of mentor motivation within partner companies; when schools deepen their cooperation at different stages and through various channels, they can then provide learners with plenty of hands-on practice environments and partnership-based activities, and such conditions are helpful for creating an atmosphere that is suitable for

developing the workplace skills and abilities that students will need in their future careers [9].

3.5 Refine the Diversified Evaluation and Assessment System

Establish a comprehensive evaluation mechanism involving educational institutions, enterprises, and students. When it comes to evaluating students during their on-the-job internships, it would be better to bring in multiple parties to take part in the assessment process, and the evaluation criteria should be tailored to fit local conditions with enough specific details. In this kind of setup, the teachers from the school side could concentrate on looking at how students approach their learning and how well they apply what they have learned from textbooks to real tasks; at the same time, the supervisors from the companies could focus more on checking whether students can carry out practical steps correctly, whether they take their duties seriously, and whether they show enough dedication in getting familiar with the whole workflow [10]. Students should reflect on and summarize their own work; this reflection should be based on their developing professional awareness.

Schools and enterprises should establish a process-oriented assessment framework; for the whole period of the on-the-job internship, they can put in place an evaluation model with several stages, and this model may include weekly checks to see how things are going, monthly reviews to assess overall performance, and then a final overall evaluation at the end to cover everything that has been done [7]; school and enterprise mentors can jointly make improvement plans based on the weak points found at each stage; through the continuous identification, reflection, and solving of problems in the process-oriented assessment, students' understanding of the job skills and responsibilities required, as well as their willingness to pursue better results, can be effectively improved.

4. Conclusion

For vocational college students, on-the-job internships are a very important and irreplaceable way to develop the spirit of craftsmanship; however, many problems still remain in several areas, like course design, training of practical teachers, school-company cooperation, and internship assessment;

vocational colleges should further improve the development of the spirit of craftsmanship in five main areas—making top-level coordination stronger, building school-based resources, improving teacher development, making school-company cooperation channels deeper, and improving a varied evaluation and assessment system—so that they can better supply high-quality professionals with specialized practical skills and good professional ethics for local industrial development.

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