Data Investigation and Analysis on Craftsman Spirit Cultivation in Applied Undergraduate College

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Abstract. Craftsman Spirit is very important to everybody and each industry especially for industrial and powerful countries. In order to improve the cultivation quality of talents in applied undergraduate colleges and meet the needs of local economic development, the paper discussed the current situation and question of the craftsman spirit cultivation through the data investigation and analysis coming from 948 effective questionnaires. Then it puts forward the effective path for the cultivation of craftsman spirit in applied undergraduate colleges. We hope that it would provide effective suggestions for cultivating applied talents with craftsman spirit and local economic development.

1. Introduction
In the era of industrial transformation and upgrading, high quality skilled talents is an urgent need for all walks of life situation. The cultivation of college students with craftsman spirit contributes to change from the big manufacturing to the strong manufacturing country. The craftsman spirit is integrated into all aspects of talent cultivation in applied undergraduate colleges, which comprehensively improves the cultivation quality of talent. The craftsman spirit is deeply rooted in China's economic society and the development of higher education. It not only helps to increase the technological level, but also to produce high and sophisticated products. It is also significance approach to promote the values of a person, a team, and the nation. Therefore, it is necessary for applied undergraduate colleges to deeply explore the inheritance and cultivation of craftsman spirit of the college students, and play an indispensable role in promoting local economic development and social progress.

2. Literature Review on Craftsman Spirit Cultivation
In western countries, the craftsman spirit of Germany and Britain is representative. The cultivation of craftsman spirit mainly started from the vocational education in Germany [1]. Most Germany workers have received the vocational education which is very distinctive. It is not only important in the domestic education system, but also gains wide recognition in the international community. In addition, the guild system and mentoring of Germany and Britain building in the late middle ages, which are also promoted the cultivation of craftsman talents to a certain extent [2].

We are familiar with the Japanese craftsman spirit in Asian countries, which emphasizes doing well what is before you and completes the ordinary work perfectly [3]. In Japan, it pays more attention to cultivate the students' professional quality from the primary school to the university [4]. By building students' professional awareness, professional spirit and career goal orientation, meanwhile the
craftsman spirit is cultivating [5]. And that’s why it has so many skilful craftsmen in all walks of life in Japan [6].

It has a long history of cultivating craftsmen, which can be traced back to the earliest recorded period in China [7]. The craftsmanship spirit has already been mentioned in history. This is a vivid portrayal of the jade carvers in the book of songs. The stories of skilled craftsmen such as ‘blistering the ox’ and ‘showing off the axe to the teacher’ all vividly demonstrate the meticulous work attitude of ancient craftsmen.

Most scholars explored the cultivation of craftsman spirit mainly from the whole society macro perspective. They emphasized the importance of vocational education, conceptual description and case introduction, but ignored the interaction factors of the colleges and enterprises, without enough theoretical research and concrete countermeasure. It is still in its infancy about craftsman spirit cultivation of the applied undergraduate colleges’ students, without forming systemic theory and research results. It is hard to see literatures about craftsman spirit cultivation of the applied undergraduate colleges’ students from the perspective of the college, government and enterprise.

3. Current Situation and Dilemma of Craftsman Spirit Cultivation

3.1 Questionnaires Design and Distribution
In order to research the present situation of the craftsman spirit cultivation, this paper conducts the questionnaire survey on the students of the applied undergraduate colleges. A total of 22 items were designed, including 11 single-choice and 6 multiple-choice items, 4 matrix single-choice items and 1 gap filling. It covers the understanding and significance of the craftsman spirit, whether the colleges offer course of the craftsman spirit, and so on. Through the survey, the real data are obtained, which provides the strong support for this research.

In the survey, 1000 questionnaires were distributed and 948 valid questionnaires were recovered. There were 419 male students representing 44.2 percent, and 529 female students representing 55.8 percent, as shown in table 1.

| Gender | Grades       |       |       |       |       |
|--------|--------------|-------|-------|-------|-------|
|        | number       | 419   | 529   | 245   | 268   |
| account for | 44.2%  | 55.8% | 25.8% | 28.3% | 24.7% | 21.2% |

3.2 Cognition of Craftsman Spirit of Applied Undergraduate College
The investigation results show that 75.9 percent of applied undergraduate college students have heard the craftsman spirit, 47.3 percent students generally understanding and only 28.6 percent students very understanding the craftsman spirit. Thus, overall cognition situation is not optimistic, as shown in Figure 1.
3.3 Affective Commitment of Craftsman Spirit of Applied Undergraduate Colleges

When asking the students whether it is necessary to cultivate the craftsman spirit for students, 63.3 percent students express it is very necessary, 26.6 percent students consider that the craftsman spirit should be consciously cultivated, 9.3 percent students are indifferent. Another 1.8 percent students said it was not necessary at all, as shown in Figure 2.

![Figure 2. Necessity cognition Distribution of craftsman spirit.](image)

3.4. Cultivation Current Situation of Craftsman Spirit in Applied Undergraduate Colleges

When asked the students what the approach they understand the craftsman spirit, they answered the top one is TV, internet, newspapers, magazines, books, accounting for 86.8 percent. It can be seen that TV and internet have become the most important channels for the students to understand the spirit of craftsmen. College teachers accounted for 58.9 percent who are the second place. And the third place accounted for 28.8 percent, come from family members and government propaganda, as shown in Figure 3.

![Figure 3. Cultivation approach distribution of the craftsman spirit.](image)

Colleges cultivate the craftsman spirit in ideological and political education courses, specialized courses, teaching activities, special practical training, campus student activities and campus culture construction and so on, as shown in Figure 4. It is visible that the ideological and political education curriculum with 66.2 percent takes the first place in cultivating the craftsman spirit. The second place is the professional course accounting for 61.8 percent. The third one is the teaching activities, accounting for 58.4 percent. Other aspects are all more than 50 percent.
3.5. Craftsman Spirit Cultivation Dilemma

3.5.1. Lack of self-cultivation awareness. As shown in Figure 5, 73.1 percent students thought that it is the important source that pursuing the craftsman spirit by themselves.

3.5.2. Education needs to keep pace with times. As can be seen from Figure 6, less than 20 percent teachers combined their professional skills with the craftsman spirit in the class, while nearly 45 percent teachers spent much more time on professional skills than on the craftsman spirit.
3.5.3 **Craftsman spirit cultivation lacks clear standard.** The cultivation of students’ craftsman spirit in applied undergraduate colleges has just been beginning, and needs further research and development. The cultivation of craftsman spirit has not been paid more attention, and lacks of clear standards. It should cultivate skill quality and moral trait together. And the subjectivity and individuality of the cultivation should not been neglected.

3.5.4 **Vocational education system needs to be improved.** Vocational education has influence on the craftsman spirit with each other. Craftsman spirit plays the value leading role. In the background of supply-side structural reform, vocational education system and craftsman spirit between the mutually beneficial roles is not obvious. Vocational education system is still imperfection, and can’t mobilize enthusiasm and creativity of the enterprises, universities and individuals.

4. **Path of Cultivating the Craftsman Spirit in Applied Undergraduate Colleges**

4.1 **Social Aspect**
At present, the social environment is imperceptibly affecting the ideology and behavior of students. In order to achieve good results in the cultivation of craftsman spirit, the key is to shape the healthy social atmosphere, and build the platform contribute to the cultivation of craftsman spirit in applied undergraduate colleges. This requires that the government and the enterprises provide support and guarantee. The social positive energy permeates the ideology of the students. The healthy atmosphere should be created for the craftsman spirit cultivation of the applied undergraduate colleges.

4.2 **College Aspect**
In order to strengthen and guide the students solve the difficulties and realize self-development with craftsman spirit in applied undergraduate colleges, we should carry out continuous, standardized and integrated management, with innovating the methods. College is the foundation to systematically promote the craftsman spirit cultivation. It should reform the educational system and train students establish correct professional and moral idea. The system of craftsman spirit cultivation should be built which integrates teaching, tutoring, practice and scientific research.

4.3 **Family Aspect**
Family education plays the leader role of student education, which is the foundation of the whole educational process. However, some parents’ educational ideas can’t keep pace with the times, are not conducive to the cultivation of the family environment nurtured by craftsman spirit. Therefore, we should build the overall environment for the craftsman spirit cultivation in applied undergraduate colleges, and attach importance to the basic role of family environment.

4.4 **Student Aspect**
The students are the main body of craftsman spirit cultivation, which plays the key role in applied undergraduate colleges. Therefore, we should strengthen the identity of the students of their ideology and behavior, fully arouse their main enthusiasm, promotion skills, and take the craftsman spirit as their standard of behavior and evaluation criterion.

5. **Results and Discussion**
Under the background of the transformation from the local undergraduate colleges to the applied undergraduate colleges, the craftsman spirit is not the old-fashioned, but the pioneering and innovative spirit, which contribute to the college students working hard in the future. The cultivation of craftsman spirit helps college students to acquire more technical skills, realize the value of life, enhance the competitiveness of employment, and serve the development of local economy. In an era from the manufacturing power to the manufacturing powerhouse, it has become an important historical mission to cultivate a large number of high-quality talents with craftsman spirit for the applied undergraduate colleges. And it is particularly important to construct the path of cultivating students’ craftsman spirit, which is participated by the colleges, governments and enterprises together.
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7. References
[1] Baethge M, Wieck M. Berufliche Bildung in der Bildungsberichterstattung. VS Verlag für Sozialwissenschaften, 2007.
[2] Stephen C. Ferruolo, the Origins of the University: the Schools of Paris and Their Critics. Stanford University Press, 1985.
[3] Akiyama lihui. Craftsmanship exceeding customer requirements. China quality newspaper, 2015-12-25.
[4] Yoshi nakano. Modern vocational education and training of light and shade learning analects no. 2009, 11.
[5] Konori bukuchi. The nation of the craftsman: the treasure of the craftsman nation. the cornerstone of the nation, a new PHP book, 2008, 11.
[6] Hiranuma takazaki, hideki tanaka. International comparison of the training skilled workers—the current apprenticeship system in advanced industrial countries. Minerva study, 2007(9).
[7] Han changri, Yang xiuying, xie Lin. Exploration and practice of artisan talent cultivation. Journal of hainan normal university (natural science edition), 2017(03).