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Reflection on the Path of Action and Knowledge in Contemporary Higher Education Reform

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Abstract: "Life is education, society is school" is the fundamental proposition of Xingzhi education. Experimental teaching, situational teaching, job acquisition, and tourism cognition are the implementation paths of Xingzhi education. These educational paths of "Knowing by doing" are not only effective ways of cognition, but also popular among young students. Faced with the reality that young people nowadays do not love reading but are willing to participate in social practice, China's education reform should start by strengthening practical teaching, allowing students to acquire knowledge as much as possible through practical activities, rather than through reading [1]. This is not only an empirical tale of educational reform in developed countries in Europe and America, but also a beautiful tale of the westward trend during China's modernization period in the 1930s.

Keywords: Xingzhi education; Applied universities; Education reform

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1. The abyss of problems

Education is the process of transforming experience, and the paths to transforming experience include classroom teaching, experimental teaching, situational teaching, job acquisition, tourism cognition, and immersion in daily life. In the 15th century, Europe transitioned from religious workshops to specialized schools on the eve of the Industrial Revolution, shifting from a purely speculative cognitive approach to early practical experience gained through work experience. The Western style education that originated in China in the 1930s was also an attempt to transition from academy style thinking to situational teaching from schools to the industries [2]. The rise of modern schools in Europe in the 15th century laid the foundation for the educational philosophy of pragmatism. This educational philosophy not only nurtured the Renaissance, intellectual enlightenment, and industrial revolution in Europe, but also condensed the pragmatic spirit of the United States. The earliest application of pragmatism in educational practice was by American philosopher and educator Dewey. Dewey's student Tao Xingzhi was the initiator and practitioner of promoting pragmatic educational ideas in China. Pragmatism education in China is also widely spread under the name of Xingzhi education. Faced with the need for innovative talent cultivation in China's industrial transformation and upgrading, as well as the reality

that students are increasingly disinterested in reading, rethinking the educational philosophy of pragmatism or "Knowing by doing" is not an innovation, but a reproduction for the current educational reform [3].

2. Students nowadays don't love reading, but cannot be understood as not loving learning

The general unwillingness of students to read cannot be understood as a general unwillingness to learn, but rather a change in the way they learn. For example, students are unwilling to read books in the classroom and are willing to browse the internet. Besides, they are not willing to read historical articles but willing to visit historical sites, not willing to read novels, but willing to experience life. They are less likely to consult teachers or classmates with questions, more likely to choose to log in to Baidu Baike or finding the answers from the web, not willing to communicate with teachers around oneself but willing to communicate with strangers online. The students are also maybe not interested in books on cooking and dance but passionate about food and performance arts. They might not seeking a deep understanding of specific issues but having an interest in different fields of reasoning, shifting from "holding onto the scroll" to "holding onto the machine." This indicates that the nature of young people to explore novel things has not changed, and their desire to explore the field of knowledge has not changed. What has changed is only its manifestation [4]. All of this transformation is not only because online browsing, social practice, tourism cognition, and hearsay are more interesting than reading newspapers and classroom lectures, on the other hand, the carrier of knowledge has changed and the channels for cognition have become wider.

3. The manifestation of Xingzhi thought in European and American education

3.1. Practical activities have become an important organizational part of teaching activities

The dual system education model in Germany is an education model that closely combines theoretical learning with work practice. While students receive practical operation skills training in enterprises, they accumulate experience and improve their understanding [5]. German companies also actively participate in university education, cooperate with schools to carry out training programs, and provide internship and practical training opportunities. There is a free transition between general education and vocational education in Germany because vocational education schools are part of the general education system in Germany and students can choose the appropriate educational path based on their interests and strengths. It is even possible to choose a learning path based on personal interests that have changed over different periods. The core concept of German education is the coexistence of theory and practice. Considering classroom teaching and factory practice as two paths to accumulate experience, this dual approach makes it easier to combine theory with practice and cultivate students' hands-on abilities [6].

From elementary school to university, education in France places great emphasis on practical teaching, with the aim of utilizing the complementarity between classrooms and factories to accelerate the mutual transformation of theory and practice [7]. The French government has enacted relevant laws and policies, requiring all enterprises to unconditionally accept internships and visits from students anytime. The factory internships of college students are included in the social security system under the Labor Law. There are even specific regulations on the maximum weekly attendance, insurance, internship allowances, and additional benefits (such as reimbursement of meals, accommodation, and internship expenses).

In 2015, England and Wales took the lead in implementing a degree apprenticeship system. After completing the entrance examination, students can apply to participate in degree apprenticeship education,

which is jointly recruited by universities and enterprises. Students who receive degree apprenticeship education are both university students and corporate employees, with approximately 30 hours of work per week in the company. During their studies, students can receive salaries paid by companies and can also obtain corresponding bachelor's or master's degrees after graduation. According to relevant data, apprenticeship students who graduate from industries such as education, healthcare, engineering, and transportation have a considerable average annual income, even exceeding the average starting salary of many ordinary university graduates. According to different majors, the duration of degree apprenticeship education is usually three to six years [8]. The apprenticeship education in Britain first appeared in handicraft workshops in the 16th century, and extended to various factories during the Industrial Revolution. Today, apprenticeship is available in industries including energy and modern service field.

3.2. University teachers generally have an engineering background

To fully integrate practice and theory in the education process, it is required that university teachers have a frontline engineering background. In European and American countries, university teachers have three backgrounds in teaching, scientific research, and engineering. While attending classes, university teachers engage in scientific research in related fields and provide frontline engineering guidance. Teachers with teaching experience, theoretical foundation, and engineering experience can easily achieve the combination of theory and practice [9]. Chinese universities are currently emphasizing the "Dual teacher" model, which includes lecturers, and experts such as engineers and accountants, with the aim of emphasizing the practical and hands-on abilities of teachers.

3.3. Some school mottos exert the emphasis on practical teaching

The motto of MIT is: "Mind and hand." The motto of Carnegie Mellon University in the United States is: "My heart is in the work." The motto of the University of Nottingham in the UK is: "Learning to live." The motto of the University of South Wales in Australia is: "Knowledge by hand and mind." Although different universities may have vastly different expressions of their motto according to their founders, but the four universities mentioned above emphasize the demand for practical and hands-on abilities, which is actually a common pursuit of all schools. Thus, these four schools have incorporated it into their school motto.

4. The cultural tradition of Chinese Xingzhi education

4.1. The public experience of Xingzhi education

"Life is the best teacher" and "Society is a vibrant classroom" have already existed in different ways on this land of China. The stories of grandfather under the moon, the nursery rhymes of grandmother on the kang bed-stove, mother's weaving and cooking skills, and father's entire life of farming have always been important forms of rural education. The rural vocational education of "Learning from every aspect of agricultural work and using every aspect of agricultural tools" has trained 80% of China's population. The dyeing of urban life is an important organizational form of non-professional education, which baptizes modern civilization for college students or migrant workers from rural backgrounds [10]. The exchange of information and experience among urban workers is known as the spillover effect of human capital, becoming the source of urban innovation.

4.2. Educational experiments in modern times

During the Westernization Movement, the officers actively advocated changing the old-style academy into a new style school, adding foreign languages and modern subjects such as the nature, earth, military, arithmetic,

sound, light, chemistry, and electricity to the teaching content. On the other hand, they also paid special attention to studying abroad. At that time, the general view of the upper class was that "One year abroad is better than three years of Chinese schools." During the period of modernization in China, many educators put forward their views, such as Huang Yanpei's viewpoint of "Combining hands and brains, integrating work and learning", Yan Yangchu's viewpoint of "Integrating theory with practice, and emphasizing knowledge and skills", and Tao Xingzhi's viewpoint of "Education is life, society is also school" [11]. This is not only the ideological enlightenment of the Westernization Movement practice, but also the induction of the life experience of ancient Chinese intellectuals who, as the saying goes "Traveled thousands of miles and read through thousands of books."

4.3. The practical aspects in contemporary higher education

In the educational design of contemporary college students, students majoring in biology, geography, architecture, history, archaeology and other fields visit China's famous mountains and rivers, rare species, classic architecture and cultural relics for educational internships and professional internships, which are expressed through practical knowledge. The integration of experimental teaching and production practice among engineering students is a reflection of the idea of action knowledge. The appointment of enterprise professionals as industry professors by universities also needs to make up for the lack of practical skills and is based on the concept of practical knowledge. The inter-provincial and inter-regional internships for college students have become an important part of teaching activities, as well as the externalization of the concept of broadening horizons and expanding knowledge.

5. The ideological foundation of Xingzhi's educational philosophy

5.1. Reforming education centered on personal experience

Activists emphasize that action leads to knowledge out of a kind of thinking, which emphasize the goal of teaching is not so much to make students memorize a large amount of knowledge, but rather to encourage them to discover the meaning of this knowledge on their own. It is because only when students associate what they have learned with their own past experiences, can what they have learned be meaningful to themselves [12]. In addition, from the perspective of educational goals, behaviorists believe that the task of teachers is not limited to preaching, imparting knowledge, and solving doubts but more focused on cultivating students' discovery and insight, and cultivating independent thinking habits. Teachers should encourage students to observe problems from a personal perspective, encourage them to participate in various social activities, and also encourage them to organize and design according to their own ideas.

5.2. Education centered on social practice

On the basis of criticizing the center of teacher, classroom and textbook in modern times, American pragmatist education advocate Dewey proposed the concept of curriculum activity , believing that only by gaining experience through curriculum activity can the students overcome the drawbacks of subject-based teaching and better adapt to the needs of social production. Under the influence of Dewey, Chinese educator Tao Xingzhi proposed in the 1930s that "Education originates from life and serves life." He further emphasized that "Education without life as its center is dead education, schools without life as its center are dead schools, and books without life as its center are dead books" [13]. The so-called life here, in today's words, refers to two aspects: industrial practice and the life of the masses.

5.3. The purpose of education is to educate not to teach

Mr. Feng Youlan, a philosophy professor at Peking University during the Republican era, once said: "People mainly rely on transformation rather than teaching." People are not only influenced by theoretical education, but also by practical experience. From a psychological perspective, the process of human socialization is an interactive process with the outside world, and its cognition is constantly strengthened by consequences and facts [14]. Materialism believes that "Humans are products of the environment", while pragmatists say that "Education is life, not the preparation of life." Both emphasize the influence of the external world on humans, indicating that the concept of "Action leads to knowledge" is based on materialism.

5.4. Experience accumulation and educational model of "Learning by doing"

People involuntarily contemplate ways to improve production during the production process. According to Harvard University's Professor Arrow (1962), after the introduction of a new aircraft design, the time required to build each new aircraft is inversely proportional to the cube root of the number of produced aircraft of that type. Airbus in Europe saved 20% of the time for workers to manufacture the second aircraft compared to the first, and in subsequent production, one aircraft took less time than the other due to the proficiency of the workers in their work, which improved work efficiency [15]. This phenomenon was defined by Nobel laureate, Lucas in 1988 as "Learning by doing." Lucas used his model to explain the sources of technological progress. This is actually the Chinese idiom "Practice makes perfect." Of course, the secret of handling things perfectly is based on repeated social practices.

6. Conclusion

In the face of the current demand for innovative talent cultivation in industrial transformation and upgrading, as well as the reality that young people do not love reading but love hands-on work, increasing the practical aspects of university teaching activities is a feasible direction for future educational reform. The educational philosophy of "Knowing by doing" is not only a successful experience for universities in developed countries, but also a banner during China's modernization period. Moreover, in recent years, Chinese universities have increasingly emphasized the engineering background of teachers. It can be said that in China, the concept of practical education is advocated, which means that there is both social demand and educational supply.

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