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RECEIVED 07 April 2025

ACCEPTED 05 August 2025

PUBLISHED 15 August 2025

## CITATION

Luo G (2025) From historical movements to educational reform: the role of the work-study movement in France in the development of vocational education in China.

*Front. Educ.* 10:1607333.

doi: 10.3389/feduc.2025.1607333

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# From historical movements to educational reform: the role of the work-study movement in France in the development of vocational education in China

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**Introduction:** This study examines how the French Work-Study Movement influenced the early development of vocational education in China. While current research tends to emphasize Anglo-American and Japanese models, this paper highlights the pivotal role of the French vocational education system in shaping China's early modernization efforts and demonstrates how transnational educational practices were localized to meet national needs.

**Methods:** Grounded in Bourdieu's theory of education and social reproduction, the study employs qualitative historical methods, including analysis of primary documents such as letters, memoirs, and policy records, as well as comparative analysis between the French and Chinese vocational education systems of the early 20th century.

**Results:** Findings reveal that the Work-Study Movement in France provided a practical model that integrated theoretical learning with industrial labor, which Chinese students experienced firsthand. These experiences not only helped shape China's early vocational education system but also challenged traditional cultural attitudes that devalued manual labor.

**Discussion:** The study concludes that the work-study model served as a key mechanism for the localization of Western vocational education in China. It emphasizes the model's historical relevance and its ongoing value as a framework for integrating education with industry in contemporary educational reform.

## KEYWORDS

work-study movement in France, vocational education, work-study paradox, talent cultivation, China

## 1 Introduction

How to closely integrate vocational education with industry is currently a core issue of global concern. In recent years, the Chinese government has attached great importance to the integration of industry and education and has introduced a number of policies to strengthen the interaction between vocational education and social needs. However, this modernization process did not occur in isolation, but was deeply rooted in a series of educational explorations in the background of modern Chinese history. The modernization process of modern Chinese society was initially launched under the strong impact of Western culture and technology. Especially after the Revolution of 1911, the opportunities for studying abroad in education were significantly reduced for ordinary people due to financial constraints. However, the ideas of "freedom" and "equality" advocated by the West

continue to attract the attention of Chinese intellectual circles. In 1915, the Paris Work-Study Society was established, advocating reducing the cost of studying abroad through the work-study model and promoting the overall improvement of the quality of workers (Zhang et al., 1980). His concept echoes the social ideological trend of China's New Culture Movement after the October Revolution, setting off a wave of work-study education in the country. Cai Yuanpei proposed in Beijing in 1918 that “*The world from now on will be a world of labor*” (Gao, 1984). This inspired young students to pursue the equal value of mental labor and physical labor, and tried to break through the traditional society of “those who work hard govern others, and those who work hard govern others” The inherent concept of “in people.” This movement not only promoted the rise of work-study education, but also provided ideological impetus for the early development of China's vocational education.

However, existing research focuses on the impact of the education models of countries such as Britain, the United States, Germany, and Japan on China's vocational education, and there is relatively little exploration of the French education model (Qian, 1998; Liu et al., 2021; Ma and Wang, 2022; Peng and Xia, 2009; Wu and Zhang, 2010; Liu and Chen, 2012). In addition, research on the work-study movement in France mostly focuses on its contribution to the Chinese revolution, and the analysis of its relationship with vocational education mostly remains at the macro level (Xian and Tian, 2002; Xu, 2007; Liu, 2018; Jia, 2019; Li, 2004). In fact, the French vocational education system (such as universities, specialized schools, and internship schools) provides low-cost and efficient vocational skills training for Chinese work-study students with a model that focuses on the combination of theory and practice. This education model is highly consistent with China's social needs. Between 1919 and 1921, about 2,000 Chinese students entered French factories for part-time work and study through the work-study movement in France, which not only directly affected the rise of China's vocational education, but also laid the foundation for the development of science, technology, and education in China in the late 20th century.

Based on Bourdieu's theory of education and social reproduction, this article will explore how the work-study movement promoted the transformation of China's vocational education at the intersection of Chinese and French societies from the dimensions of cultural capital, symbolic violence and educational field, and reveal its historical significance and practical inspiration for contemporary industry-education integration.

## 2 Methodology

Grounded in Bourdieu's theory of education and social reproduction, this study adopts a multi-method qualitative approach to examine the historical and sociological dimensions of the Work-Study Movement in France and its influence on the evolution of vocational education in China. Education is viewed not only as a mechanism for the transmission of cultural capital and the maintenance of social hierarchy, but also as a field where symbolic power reshapes learners' dispositions and institutional practices (Mu, 2020). Accordingly, the study combines historical document analysis, interpretive qualitative inquiry, and structured comparative analysis to reveal how educational values and institutional models were absorbed, transformed, and localized across cultural and political contexts.

### 2.1 Historical document analysis

Historical document analysis serves as the foundation of this research. A wide range of primary sources was consulted, including letters, diaries, memoirs, government policies, and newspaper articles from the early twentieth century. These materials were drawn from published archives such as Historical Materials of the Work-Study Movement in France and Educational Records of the Republic of China, as well as compilations produced by Tsinghua University and other academic institutions.

The analysis involved manually reviewing and organizing these documents according to key thematic dimensions—such as the structure of vocational training, the work-study model, the perception of labor, and educational adaptation. Rather than treating the documents as isolated historical records, the study emphasized their narrative patterns, ideological references, and embedded institutional assumptions. This method allowed for the reconstruction of socio-educational dynamics during the period and for an exploration of how historical experiences shaped subsequent policy and educational reform. No digital coding software was employed; instead, the categorization was carried out through systematic manual analysis in order to preserve the contextual richness and interpretive flexibility of the materials.

### 2.2 Qualitative interpretation and comparative inquiry

In addition to historical analysis, this study employed qualitative interpretation to examine the meanings, tensions, and institutional logics behind the Work-Study Movement. The personal experiences of students in France—extracted from their memoirs and letters—were interpreted as sites of identity formation and social mobility, while official documents were analyzed for their discourse on labor, productivity, and education.

This interpretive work was complemented by comparative inquiry. The study examined the structural differences between the French vocational education system and its Chinese counterpart at the time, especially in terms of curriculum integration, factory-school relationships, and channels for technical certification. The comparison was not limited to institutional forms but extended to underlying values—how manual labor, practical knowledge, and state-industry cooperation were differently understood and operationalized.

Drawing on Bourdieu's concepts of field, capital, and symbolic violence, the analysis illuminated how educational practices both reinforced and challenged existing social structures. The goal was not only to recover historical facts, but to reveal how educational models acted as vehicles for cultural transfer and institutional change.

### 2.3 Data sources and analytical approach

The data used in this study come from three main categories of materials, each contributing to a different layer of analysis.

#### 2.3.1 Historical archives and original materials

Primary evidence includes correspondence, diaries, and memoirs of Chinese students in France, as well as policy documents and

institutional reports from the period. These sources were drawn from authoritative collections and provided first-hand insights into educational experiences, institutional frameworks, and societal responses to vocational training.

### 2.3.2 Academic studies and historical analyses

A wide array of Chinese and French scholarly works were consulted to contextualize the Work-Study Movement. These include both contemporaneous accounts and recent historiographical interpretations that offer critical perspectives on its educational, political, and cultural dimensions.

### 2.3.3 Contemporary research and theoretical framing

Modern scholarship on vocational education, international educational transfer, and historical sociology informed the conceptual framework of the study. In particular, the use of Bourdieu's theory allowed the study to connect micro-level student experiences with macro-level institutional change.

Throughout the research process, documents were systematically grouped into three analytical sets: (1) personal narratives and lived experience, (2) institutional and policy texts, and (3) reform discourses by returnees. This structure facilitated thematic consistency and enabled interpretive depth across levels of analysis. Manual methods were used for organizing and interpreting the data to maintain historical sensitivity and avoid over-formalized abstraction.

Given that many source collections interweave brief excerpts—such as letters, speeches, and directives—within composite entries, it is not feasible to determine precise document counts. For this reason, the analysis is structured by thematic grouping rather than numerical enumeration.

## 2.4 Study procedure overview

To ensure methodological transparency, we organized the research process into a three-stage sequence linking data sources, analytical focus, and interpretive aims (see Table 1). Rather than treating each text as a standalone unit, we focused on thematically meaningful fragments—such as personal reflections, policy excerpts, and ideological commentary—interpreted within their socio-historical context. Thematic groups and representative materials are summarized below.

TABLE 1 Three-stage workflow linking material types, methods, and analytical objectives.

Thematic group	Types of sources	Examples of use
Personal experiences and narratives	Letters, diaries, memoirs of Chinese students in France	Reconstructing lived experience and cultural perceptions
Institutional and policy materials	Government circulars, Ministry documents, labor regulations	Analyzing educational models and state-labor dynamics
Public discourse and academic views	Press reports, period journals, scholarly essays	Contextualizing ideological debates and historical framing

This interpretive approach prioritizes recurring themes and structural patterns across diverse materials, offering analytical depth without fragmentary quantification.

## 3 Historical context and movement analysis

### 3.1 Historical background

#### 3.1.1 Global historical background

The 20th century, the world was undergoing profound political, economic and social changes. The impact of the Industrial Revolution continued to deepen in Europe and North America, giving rise to the rapid development and modernization of the capitalist economy. However, European society during this period also faced economic depression and the trauma of the First World War. Post-war social order reconstruction, economic recovery and labor shortages became common problems. As the main destination of the Work-Study Movement in France, France saw a surge in post-war labor demand, especially for low-skilled labor, which provided Chinese workers and students with opportunities to study and work.

At the same time, socialist thought was rising in Europe, and the success of the Soviet Revolution inspired anti-imperialist and anti-feudal movements around the world. This trend of thought had a profound impact on Chinese intellectuals and young students, who, in the process of exploring ways to save the nation, began to turn their attention to learning advanced foreign experience, especially the introduction of industrialization and education models.

#### 3.1.2 Chinese historical background

20th century was a transitional period between the disintegration of the late Qing Empire and the establishment of the Republic of China, and the country was caught in a dilemma of internal and external troubles. The failure of the reforms in the late Qing Dynasty and the political turmoil after the Revolution of 1911 made it impossible for the country to effectively deal with the invasion of foreign powers and domestic divisions. In terms of economy, China was transitioning from a traditional agricultural society to an industrial society, but its industrial foundation was weak, resources were scarce, and social classes were seriously solidified. After the abolition of the traditional imperial examination system in China, the construction of a modern education system was still in its infancy. All sectors of society urgently demanded an education system that was both practical and modern to cultivate talents that could adapt to social transformation and national construction.

#### 3.1.3 The origin of the work-study movement in France

As early as the end of the 19th century, the Qing government began to send students to study in the United States and Europe, but these programs were mostly for the elite. In 1920, Wu Yuzhang talked about the reasons for studying in France in a speech at the Sichuan Preparatory School for Studying in France:

*France is the center of European civilization. Most of the academic inventions come from France. Recently, it has defeated Germany and Austria. The nature of its people is quite similar to that of our*

country. When we study abroad, we not only focus on academics, but also on gaining a social perspective in order to improve our own country (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

The original intention of Chinese intellectuals to study in France was to work and study at the same time, absorb advanced foreign science and technology and educational concepts, overcome the difficulties of insufficient domestic resources and lack of educational funds, and hope to find solutions to improve Chinese society. After the May Fourth Movement, the rise of the New Culture Movement led to the rapid spread of scientific, democratic and pragmatic ideas, providing strong ideological support for the development of the work-study movement. The movement was supported by groups such as the Chinese Work-Study World Society and the French Study Abroad Society. These institutions not only organized people to go to France, but also provided relevant policy guidance and liaison services.

### 3.1.4 Key events and trends

1919, Peking University and other institutions began to mobilize young students to work and study in France, and this initiative quickly received a social response. Between 1920 and 1921, a large number of Chinese students arrived in France, but due to poor labor conditions, limited educational resources and tightened French government policies, the movement gradually fell into trouble. The work-study students found that it was difficult to maintain their lives and studies in France by frugality alone. As a result, they began to subsidize their living expenses through labor, with “working and studying” as their main purpose. However, this formed an irreconcilable “work-study paradox,” that is, working means no time to study, and not working means no time to study. Although the movement did not fully meet expectations, its educational philosophy and practical experience had a profound impact on the development of China’s vocational education, especially in laying the foundation for the promotion of an education model that combines theory with practice and emphasizes both work and study.

## 3.2 “Working with the workers”: the “vocational education clues” of work-study students studying in France

From the 19th century to before World War II, French worker training was mainly carried out within enterprises and factories (Mi and Li, 2021). Students studying in France also used factories as their learning base. During the day, they worked in factories; at night or on weekends, they studied theory in night schools and workers’ universities. The school’s curriculum is flexible, including basic courses such as French and mathematics, as well as professional technical courses such as machinery and electronics. This educational model that combines theory with practice enables students to continuously improve their skills in actual operations in order to “apply what they have learned.”

### 3.2.1 Part-time work-study education model

“Work-study” is a form of French apprenticeship whose origins can be traced back to guild apprenticeships from the 9th to the 13th century. With the development of industrialization, France’s demand for skilled

talents has increased significantly. In the first half of the 19th century, employers, industrial associations, and religious groups began to set up training institutions for junior technical labor, including apprenticeship schools and apprenticeship schools. These schools come in various forms, such as factory-run schools, school-run factories, schools and factories located in two locations, and apprentice schools specifically for 12-year-old children, providing skills training and general knowledge education. This model was gradually improved and eventually developed into France’s unique work-study education model, which emphasizes the organic combination of theory and practice (Wang, 2009).

The Chinese students who studied in France were scattered in factories all over France, directly participating in and experiencing the “work-study” education model. In 1920, the “Newspaper on Current Affairs” reported in detail the situation of 13 of these factories. Most factories have an eight-hour working day and provide a certain amount of remuneration. For example, at the La Roche shipyard, even workers with weaker skills can find jobs and receive guidance from factory workers, which enables the skills of the students who studied in France to grow rapidly (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). Some factories that have cooperative relations with China, such as the Lyon Automobile Factory and the Tours Printing Bureau, are relatively friendly to the Chinese. The former has branch factories in Shanghai and Beijing, and is also equipped with a library; the latter was founded by the Chinese. The Labrai Steam Engine Factory is a typical apprenticeship factory, and the foreman also serves as an instructor. Although the working hours are long, it provides rich learning opportunities (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). Some factories also arrange living facilities such as dormitories and canteens for students to further facilitate their study and life (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

Overall, in the early 1920s, the factory life of the students studying in France fully reflected the “work-study” education model. These students quickly mastered the technology through practice in the factory, and deepened their understanding of professional knowledge through theoretical study. This education model that emphasizes both theory and practice not only improved their skills, but also allowed them to deeply understand the form and power of labor organizations, injecting new connotations into their thoughts and professional concepts. In contrast, although China also tried the part-time work-study education model at that time, the social prejudice against the labor industry made many students unwilling to engage in physical labor, and the scale and level of domestic industry could not support such an education model. France’s work-study model is considered to be the best choice for students studying in France to acquire knowledge and skills because of its mature industrial foundation and good factory environment. However, with the saturation of the French labor market, many Chinese students can only engage in lower-end jobs such as physical labor or cleaning, and rarely have the opportunity to obtain technical jobs. For students studying in France, going to France is not a simple “shortcut,” but a valuable experience of tempering their bodies through labor, learning skills, getting familiar with civilian life, and observing European society. These experiences not only enabled them to master the skills to adapt to the industrial society, but also prompted them to promote the development of vocational education in China after returning to their home country and to explore a vocational education model that suits their national conditions.



### 3.2.2 The “teaching team” dominated by workers

A striking feature among the work-study students studying in France is that there is a clear gap between the academic majors of many students and the factory fields where they actually work. This reality has resulted in students’ records of course content and teaching activities being relatively vague and scattered. At the same time, there are few specific descriptions of the role of “teacher.” Only sporadic records can provide a glimpse of the guiding characteristics of factory skills training. When Zhu Xi recalled his 41-month work-study experience in France, he vividly described his working life at the Crusa Iron Factory. He mentioned that the foreman directly assigned him to the repair department of the train factory after briefly asking about his skill preferences. He was asked to stand next to a machine and observe the operation of a French worker, who immediately became his “master.” This arrangement shows a typical master-apprentice inheritance mechanism within the factory, emphasizing practical learning through observation and imitation until the relevant skills are fully mastered (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

A similar case occurred at the Lyon Automobile Factory. Shen Yijia recalled that the “teachers” were actually senior engineers in the factory. These instructors were responsible for teaching multiple courses, including factory management, organizational efficiency, mechanical principles, metallurgy and steel properties, mechanical parts manufacturing, and related processes (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). This arrangement shows that although most factory teachers are composed of technical workers with rich practical experience, in some cases, senior technicians will also participate in teaching to provide students with more systematic and in-depth professional knowledge. This teaching model is not limited to the training of basic operating skills, but also covers more advanced and comprehensive knowledge transfer. In this way, students can not only master specific operational skills, but also comprehensively understand factory management and technical principles, thereby forming a systematic understanding of the entire production process.

This practice-oriented education model enables students to accumulate valuable experience in real work situations and cultivate the ability to solve practical problems. In addition, the apprenticeship arrangement within the factory highlights the characteristic of “teaching by work.” In this framework, the factory is both a production unit and a teaching place; the workers are both laborers and teachers. This model fully reflects the educational concept of “combining work and study” and to a certain extent makes up for the disconnection between theoretical learning and practical operation. Through this model, students are able to find a balance between academic theory and practical skills, deepen their understanding of knowledge, enhance their hands-on ability, and accumulate valuable experience for the modernization of vocational education.

### 3.2.3 Interconnected channels for skilled personnel to advance

In 1919, France enacted *Loi Astier*, which regulates the construction of the apprenticeship system in the form of national laws, marks the official start of the exploration of the institutionalization of vocational education. According to the Act, vocational and technical education is divided into three levels: primary, secondary and higher, and a set of interconnected education systems is constructed: the

lowest level of public or private schools provides local courses, covering basic skills such as crafts, design and elementary computing; the middle level focuses on the cultivation of practical skills and provides direct services for industrial needs; and the highest level of technical schools focuses on deepening professional knowledge and promoting technological advancement and innovation.

In companies such as the “Lafley Factory,” professional qualification certificates have become a standard requirement for recruitment. Any employee who has worked in a certain position for more than three consecutive months can obtain a certificate. This certificate is not only an official recognition of the worker’s technical ability, but also regarded as a pass in the job market, which greatly facilitates job matching. When workers cannot find a job for various reasons, they can apply to the Ministry of Industry, which will reallocate their jobs based on their skills and assessment results and determine their salary and benefits accordingly. This mechanism ensures the reasonable allocation and value realization of technical workers (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). This institutionalized model of technical talent training has provided strong support for the economic prosperity of the European continent. It has not only improved industrial productivity, but also given the working class greater mobility and social participation. Through skill upgrading, workers have not only improved their own competitiveness, but also promoted the effectiveness of collective action. This system has also indirectly promoted the popularization and expansion of technological innovation, demonstrating the profound impact of vocational education on the development of industrialization (Tian and Yun, 2017).

For students who go to France to work and study, this clear and explicit channel for advancement is extremely attractive. In companies such as the Clouzot-Slade factory, students who work and study generally have a positive attitude and are willing to start learning from the basics and gradually improve their skills through continuous efforts. This process of accumulating basic skills to advanced levels not only meets the production needs of the factory, but is also very popular among students (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). Apprentices who are physically strong and have a strong desire for knowledge often have a clear promotion track and are expected to grow into skilled workers. Some students who have just arrived in France have grand personal plans—first accumulate experience as an apprentice, take advantage of the preferential treatment and growth opportunities provided by the factory, and after mastering their skills, save 10 francs a day to achieve the goal of “one year of hard work and two years of concentrated study” (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

## 3.3 “Advanced academics” and “working life”: the “work-study paradox” in the work-study movement in France

In August and September 1920, more than 1,300 Chinese students working in France worked in more than 70 factories in the chemical, steel, automobile, woodworking (Tian, 1996), printing and other industries. French factories have extremely strict requirements for workers. All workers, including students working in France, must abide by high standards of work. For example, at the iron and steel

factory named “Compagne des Forgeret acierier de la marine,” where Wang Ruofei worked, the factory required a 48-h workweek, with Sundays off, and an average of 8 h of work per day (from 7:00 to 11:30, and 13:30 to 17:00). Workers were also required to enter the factory 5 min before the start of their shift, and those who were late would not be allowed to enter (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). In such a working environment, students have very limited and fragmented study time. Wang Ruofei arranges his study time from 5:30 to 6:30 in the morning, 12:30 to 13:00 in the afternoon, and 18:30 to 21:30 in the afternoon. Nevertheless, this “hard study” model makes it very rare for people to persist in in-depth study. Therefore, many students realize that the scope of learning should be wider and they do not have to stick to rote memorization of textbooks. During the apprenticeship, students are actually learning: observing the use and composition of machines, the manufacture of objects, the layout of the workshop, etc., so that their skills are constantly improved and their knowledge is gradually enriched. This shows that work is learning, and learning is work. This work-study education model has made students studying in France start to think about the connection between work and study, and put forward the view of “why do you have to read before you can study” (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

However, the overall level of students studying in France on a work-study program was uneven. According to the record in “Xu Maoxun’s Book from Paris to the Hunan Academic Circle.”

*Eight out of ten high-school graduates in China do not go on to higher education. If these students who do not go on to higher education are sent to France to work-study, they will not need to spend too much money and can go on to higher education, killing two birds with one stone (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).*

Initially, there were two tendencies among students studying in France on a work-study program: “emphasis on work-study” and “emphasis on study-study.” Some students were not well prepared academically and lacked sufficient language training and basic skills. Chen Yannian once pointed out that most students studying in France were “brainless” (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980), which showed that many students were not well prepared to study abroad. In terms of professional knowledge, before August 1920, only 90 of the approximately 1,300 students studying in France on a work-study program had a university degree, accounting for only 7%, while more than 900 students had a primary and secondary school degree, accounting for as high as 70% (Tian, 1996). In addition to the time for work and sleep, they also needed to relearn French and general knowledge. In terms of basic skills, many students self-deprecatingly called themselves “Mr. Dongguo” when working in large factories, and could only return to production positions after spending a few months in the apprenticeship department (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). These phenomena reflected the deficiencies of China’s education system and socio-economic structure at that time. The domestic vocational education system was imperfect, and many students did not receive adequate skills training, which made it difficult for them to perform technical work in French factories. In addition, the lagging domestic

economic structure made them face difficulties after returning home. This prompted Chinese society to reflect and promote educational reform to adapt to the needs of modernization. In large factories in France, the difficult life of workers and the injustice of the social system forced workers to work for capitalists, who achieved economic expansion by exploiting the fruits of workers’ labor (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). Students studying in France on work-study programs deeply felt the power of the labor movement through personal experience and participation in social and political activities, and brought these experiences back to China. After returning to China, many students became the backbone of the Communist Party of China and other revolutionary organizations, influencing China’s social movements. They not only mastered advanced technology, but also had a deeper understanding of the operation of Western society and the life of the working class, which inspired them to think about class contradictions and social fairness in capitalist society.

After the end of World War II, the European economy was facing collapse, and the “strike trend” in France gradually spread. By the end of 1920, 300,000 Spanish workers had returned home unemployed, and about 90% of Chinese students who worked and studied were unemployed. Even French workers faced serious employment difficulties (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). The letter for help published in the “Ji Shi Xin Bao” reflected the plight of Chinese students who worked and studied in France:

*Due to economic reasons, factories in France have stopped working, and workers have no hope of finding jobs. Their lives are difficult, their studies have stagnated, they are extremely embarrassed, and their lives are in jeopardy. We deeply hope that the domestic society will care and support them (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).*

At that time, most of the Chinese students who worked and studied in France were apprentices, and their wages were only half of the average wage of ordinary workers. The unemployment crisis further aggravated their plight. The Sino-French Education Association, which was supposed to be a support, also announced that it would “shed all economic responsibilities and only provide spiritual assistance” (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).

In 1921, Chen Yi described his experience of studying in France in the Morning Post, from the initial desire to “observe facts, find the same relationships and causes and effects in society, and use the theories of predecessors to verify their own practice” to the later lament: “The income from working cannot support my studies. Working for ten or eight years is useless for knowledge (Zhang et al., 1986).” This “work-study paradox” actually reflects the need for “consistency between learning and application” in education. For example, Luo Xuezan described an electrical student who went back to the book to look up what he did not understand while working, and deepened his understanding of the content he did not understand in the book through work practice. Under this “consistency between learning and application,” knowledge can be truly applied and sublimated. Technical skills, as a kind of practice-oriented knowledge, must be accumulated through complex work processes (Pan and Zhang, 2023). To solve the “work-study paradox,” the key is to find the

connection point between “work” and “study.” The real survival pressure forced the students studying in France to give up the pursuit of “advanced knowledge” and turn to more practical skills. In addition to their labor life, they actively participated in social and political activities and deeply felt the power and organizational form of the labor movement. This process not only promoted the improvement of their knowledge and skills, but also promoted their exploration and improvement of China’s vocational education after returning home.

As shown in [Table 2](#), we present a structured comparative framework that highlights the institutional, curricular, and ideological features of the French and Chinese vocational education systems. This visual summary allows for a concise cross-system comparison rooted in the historical materials discussed.

## 4 Impact on China’s vocational education

The work-study movement in France was very powerful at the beginning, but it ended quietly in just 2 years. The failure of the work-study students in France to “occupy” the Sino-French University of Lyon pushed the “work-study paradox” to the extreme. This incident not only reflects the changes in the admiration of developed countries and the yearning for “freedom” of some Chinese intellectuals, but also reveals the deep-seated problems of class antagonism, ideological conflicts and cultural differences. Behind the “work-study paradox” is the oppression of workers and the reshaping of labor value in capitalist society. Inspired by the capitalist environment in France, the returnees from France carried out many explorations, which had a profound impact on the development of modern vocational education in China and were reflected in many aspects.

**TABLE 2** Structural comparison between French and early Chinese vocational education systems.

Dimension	French work-study model	Early Chinese vocational education
Curriculum structure	Integrated theory and practice through factory-school linkage	School-based curriculum with limited hands-on training
Teaching staff	Skilled workers and master-apprentice instructors in factories	Traditional academic teachers, minimal industrial experience
Student background	Working-class youth and self-funded students	Primarily urban educated youth with limited manual experience
Learning progression	Apprenticeship-based certification system (Loi Astier)	Lacked formal vocational qualification pathways
Labor-market integration	Skill-based employment system with upward mobility	Weak alignment between training and job placement
Social perception of labor	“Labor is sacred”; vocational skills respected	Manual labor often stigmatized; education prioritized status

## 4.1 The fading of the “long gown”: the reshaping of the value of labor life on students studying in France

Before modern times, Chinese intellectuals’ views on labor were deeply influenced by Confucianism, historical inheritance and social systems, forming a stable social structure and value system that valued knowledge over skills. This notion has long seen labor, especially physical labor, as a lower-class activity. The ideal career for intellectuals was usually to enter the official career through the imperial examination, but the imperial examination system strengthened the social gap between intellectuals and manual workers, requiring examinations of literary and ethical knowledge rather than production skills. Most intellectuals supported themselves through land and land rent, focusing on academic and political activities, while physical labor was usually the responsibility of other members of the family. Although in certain historical periods, such as the late Ming and early Qing dynasties, some intellectuals advocated “literati farming” and advocated intellectuals to take into account agricultural production, the overall disdain for manual labor did not change. However, driven by the Industrial Revolution in the 19th century, France’s labor-intensive industries developed rapidly, and the proportion of workers in the labor market increased significantly. Workers’ wages increased by 25–30% compared with before World War I, and skilled workers’ social status has been significantly improved ([Xian and Tian, 2002](#)). Social habits are often more influential than national laws. French society generally respects labor and promotes the slogan “labor is sacred.” In this social background, work-study students studying in France experienced the first reshaping of their values in their life of “hard work and hard study.”

However, France is not the ideal utopia of “freedom” and “equality.” In capitalist society, when market demand is high, capitalists hire a large number of workers; when demand decreases, workers often face the risk of being laid off. Even older workers are no exception. The work-study program in France relies on capitalism, and most students are engaged in hard labor and skills training. After experiencing the life of “working and studying,” many students began to question: “Can the labor of life be sold like a commodity ([Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980](#))?” The education system is not only a channel for the dissemination of culture and knowledge, but also a tool for the reproduction of social structure. France’s capitalist society affects the social status of the working class and the meaning of labor through the dual role of education and the labor market. In France, labor is no longer just for survival, it has also become an important part of social class and cultural identity. It is in this environment that the work-study students in France have realized that the meaning of labor is that it is not just a way to make a living, but a manifestation of social identity and a manifestation of the self-worth of the working class.

## 4.2 Reconstruction of the “system”: creative combination of education and productive labor

Luo Xuezan, a modern educator and industrialist, once pointed out that industry and education are interdependent, education is the foundation of industrial development, and industry provides a soil for practical application of education. When analyzing the impact of



work-study education on society, he listed five core issues, namely: work-study and the world, work-study and Chinese labor, work-study and Chinese industry, work-study and Chinese education, and work-study and specialized study abroad. The previous discussion on “work-study and labor” has been in-depth, and the next topic to be discussed is the relationship between education and productive labor. The work-study movement in France provided an important answer to this question.

He believed that the purpose of studying abroad was to run industry well after returning to China in the future, promote national prosperity, and thereby change the current predicament (Hou, 1989). In their practice in French factories, students studying and working in France deeply experienced the close connection between theory and practice. The “work-study integration” model emphasizes the cultivation of practical ability and breaks the boundary between traditional education and actual work. After returning to China, students studying in France introduced this concept into China’s vocational education and promoted the reform of the education system, emphasizing the cultivation of practical operation ability and innovative thinking, and promoting the deep integration of education and industry.

In the process of combining work and study, students gain industry-related social capital by cooperating with others in the work environment, solving problems, and adapting to the workplace culture. This capital can help students better integrate into the professional field and improve social class mobility. Bourdieu believes that the accumulation of social capital is crucial to the career development of individuals because it determines the resources and opportunities that individuals can obtain in society (Mu, 2020). In the early days of modern vocational education, the “combination of work and study” model was adopted, aiming to promote industrial development through education. Through practice in French factories, students studying in France realized the importance of skill improvement. Wang Ruofei recalled that when he first arrived in France, he said that he had no skills at the time, and even hoped to do physical work in the early days to earn more income, but under the persuasion of his friends, he finally chose to work as an ironwork apprentice (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980). This experience highlights the core role of skill learning in career development. In 1922, the establishment of the Renxu school system marked the formal maturity of China’s vocational education system. It is based on “combination of work and study” and integrates secondary education and vocational education, providing students with more career choices while ensuring students’ social adaptability (Qu and Tang, 2007).

### 4.3 Talent cultivation: a preliminary study on the work-study integration model in China

Vocational education, especially the “work-study integration” model, can break the separation between “theory” and “practice” in the traditional education system and promote the connection between educational content and social needs. This combination not only enhances students’ practical ability, but also enables the education system to better serve industrial development and promote the transformation of social structure. Through vocational education and “work-study integration,” more social groups can obtain higher social

mobility opportunities, thereby challenging the traditional class solidification phenomenon. The work-study movement in France was initially influenced by the New Culture Movement, which actively promoted the concept of work-study integration. Work-study activists widely spread this educational concept through newspapers, speeches and other means. For example, “Morning Post,” “Republic Daily,” “European Travel Magazine,” “Chinese Workers Magazine” and other publications have repeatedly published relevant content, emphasizing the importance of combining theory with practice. Although the anarchist desire to save the country through industry has not been realized, the work-study movement in France can reflect the role of the work-study integration model in promoting modern vocational education in my country at all stages.

The work-study movement in France first emerged with the establishment of the French Study and Budget Society. Some knowledgeable people in China have begun to try to apply the concept of combining work and study to educational practice. Around 1920, more than 20 preparatory schools for work-study in France of various types were opened across the country, mainly providing places for students preparing to work and study in France to learn language, basic knowledge of studying abroad, and training production skills (Tian, 1996). For example, the preparatory class for advanced crafts in France attached to Baoding Yude Middle School has French and ironwork as the main subjects, followed by mechanical science, craft drawing, civil engineering and other subjects, and a certain period of internship (Chen and Tian, 1991). This was the first time that the Chinese tried to practice their vocational education training model, aiming to cultivate a group of talents with both operational skills and cultural literacy, laying the foundation for the subsequent booming work-study movement and influencing the development of China’s educational practice (Liu and Li, 2010). Thousands of Chinese students were scattered in factories and schools across France, experiencing the education model of combining work and study firsthand. They worked during the day and studied at night or in their spare time. This model not only allowed them to learn technology and theory, but also made them deeply understand the importance and value of labor. Through this practice, students have acquired valuable skills and experience, laying a solid foundation for applying the concept of work-study integration after returning to China. Some of the students studying in France came with the idea of learning the technology in French factories in order to revitalize Chinese industry after returning to China. When He Peizhen was in the preparatory school for work-study in France in Beijing, she recorded the following plan in her diary:

*My ambition is to work in industry. If I can stay in France to work, I will definitely go to an aircraft factory to learn how to manufacture aircraft. If there is an opportunity to go to university at that time, I will go to an engineering university. If not, I will use the salary I earn to invite my comrades back to China, and ask them to encourage us to raise funds to open a factory to manufacture civil aircraft, motorcycles, and all the necessary machinery (Tsinghua University Chinese Communist Party History Teaching and Research Group, 1980).*

At that time, many well-known figures such as Wu Zhihui, Cai Yuanpei, and Li Shizeng were advocates and organizers of the Work-Study Movement in France. Yan Yangchu also taught Chinese workers



in France and carried out vocational education practice thereafter. The more far-reaching impact was that important leaders such as Mao Zedong, Zhou Enlai, and Deng Xiaoping were all members of the Work-Study Movement in France. After the founding of New China, the state regarded the development of work-study and the establishment of school-run factories as an important part of the socialist education system with Chinese characteristics. It also profoundly influenced the reform of vocational education in modern China.

## 5 Conclusion and implications

This study contributes to existing scholarship by showing how transnational educational practices, particularly the French Work-Study model, were reinterpreted and localized within China's vocational education reforms. Our findings align with and extend prior theories of cultural capital and institutional transfer.

As part of China's social transformation in the early 20th century, the work-study movement in France demonstrated the important role of the work-study model in promoting social progress and technological transformation. Through participating in French industrial production, students studying in France learned about modern social systems and industrialization experience, and brought this knowledge back to China to apply it in vocational education practice. This educational model not only provides a platform for skill learning, but also allows students to gain an in-depth understanding of the operation of industrialized society, especially direct contact with workers' lives and working conditions, which enhances their understanding of social reform. This model has promoted the transformation of China's vocational education from classroom teaching to practice-oriented, emphasizing the deep linkage between education and industry. The reform of vocational education is not only about technical training, but also an important driving force for social progress. The experience of working in France has made students realize that technical skills are closely related to the transformation of social systems, and that national modernization depends on high-quality technical workers. With students' attention to the lives of the working class, vocational education has occupied an important position in China's modernization process and has become a key link in social reform and national development. However, the work-study model exposes problems such as the difficulty of balancing study and work and poor working conditions. These problems still exist in the process of vocational education modernization and require more sophisticated policy design and institutional guarantees.

Overall, the work-study model in the French work-study movement has laid the foundation for China's vocational education and promoted the combination of skill training and social progress.

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Future research should further explore the interactive relationship between vocational education and social and economic development, and analyze the multiple paths of education modernization from a global perspective.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

GL: Writing – review & editing, Writing – original draft.

## Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

## Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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