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ABSTRACT

This report, which describes a study conducted through a literature search and a two-month visit to the People's Republic of China, is organized in three parts. In the first part, the general situation and historical development of the Chinese education system is discussed. Topics include the structural features of the country, party and state, population distribution and development, level of education, the socioeconomic framework, historical development, philosophical roots, the state bureaucracy and examination system, craft guilds and apprenticeships, development of a public education system, and the education system since the establishment of the People's Republic of China. The second section of the report examines structures and problems. These include the education system in the early 1980s, vocational education, adult education, vocational education teachers, competencies and forms of cooperation, financing, and characteristics of the Chinese employment system. The final section of the report presents 18 recommendations to improve vocational education and job training in China. A list of terms used in the study is given in English and Chinese, and a table presents statistics on Chinese schools and universities from 1949 to 1983. (KC)

中華人民共和國
職業技術教育

ocational training in the People's Republic of China Structures, problems and recommendations

CEDEFOP

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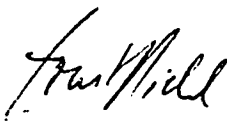
FOREWORD

The dissemination of information is one of the principal tasks of CEDEFOP. It must not necessarily be limited to what is happening in the Member States of the European Community.

CEDEFOP takes the opportunity to publish a study carried out by Prof. Joachim Münch and Matthias Risler, M.A., describing the vocational training system in the People's Republic of China.

The reader cannot remain unmoved by the vast changes and developments in this country of a billion inhabitants, particularly as some of the models described in the report - although they cannot be immediately applied to the western world - show a number of original features from which the European education and training policy-makers may draw some ideas.

We should like to thank Prof. Münch and Mr. Risler for their contribution.



Ernst Piehl
Director of
CEDEFOP

Introduction : Aim of the project

The idea of working on a project "Situation and Development Perspectives of Vocational Training in the People's Republic of China" took root at a time when in China the effects of the modernization course initiated in 1978 (the "4 modernizations") began to show themselves in agriculture and industry.

The opening of the frontiers, the encouragement of research, culture and technology also led to plans to reform the existing education system, which within the modernization process, was to act as a stimulant.

With the introduction of advanced technologies, not only in the form of single major projects, but also in the modernization of existing firms and the development of the somewhat neglected tertiary sector, vocational training and adult education and training were to play a central role. This was to become more significant as a result of the introduction of the "self-responsibility system" in agriculture and industry, for it is here that the workers' skills take direct effect.

Since 1980, a number of Chinese institutions have been interested in information on the vocational training systems of other countries. Delegations of education policy-makers and experts have travelled throughout Western Europe, Japan and the U.S.A. in order to find useful and comparable examples and experience. At the same time, international organizations and institutions from the industrial countries were asked to support China in its modernization efforts.

With the aid of the Deutsche Forschungsgemeinschaft, the project "Situation and Development Perspectives of the Vocational Training System in the People's Republic of China" was launched in 1983 with the aim of describing, analysing and appraising

the present vocational training system in China in order to provide a guide to those interested individuals and institutions in China and in other countries who are planning projects in and together with China.

A "pilot study" was carried out, the results of which have been available in book form since January 1984 : Münch/Risler "Stand und Entwicklungsperspektiven des Beruflichen Bildungswesens in der Volksrepublik China", Berlin 1984.
The pilot study enabled experience and information to be gained on the spot, this being deepened, extended and in a number of aspects corrected in the subsequent main study, as a consequence of a more detailed literature survey and a second (two-month) study visit to the People's Republic of China.

During the study visit, many contacts in the nine regions visited (Peking, Tianjin, Yantai, Dalian, Shenyang, Shanghai, Suzhou, Hangzhou, Shenzhen) showed considerable interest in the study. They not only made a substantial contribution to the results with information and advice, but stressed that foreign observers should not only analyse and describe,but, in particular, should make concrete proposals for the improvement of the vocational training system and vocational qualifications in all forms and at all levels.

The authors express their thanks to all the Chinese authorities and institutions, first and foremost the Ministry of Education in Peking, for their kind welcome and the effective support given in the organization and implementation of the study visit.

We obtained valuable ideas from the staff of the Pedagogical Research Institute of the East China Pedagogical University in Shanghai (Huadong shifan daxue 华东师范大学), the staff of the China division of the World Bank in Washington and from the members of the VITB (Vocational and Industrial Training Board) in Singapore, to whom we are most grateful.

Joachim Münch

Matthias Risler

A. GENERAL SITUATION AND HISTORICAL DEVELOPMENT OF THE CHINESE EDUCATION SYSTEM

1 General situation

1.1 Structural features of the People's Republic of China [1)]

1.1.1 Party and State

The People's Republic of China was established in 1949 as a Socialist State subject to the "People's Democratic Dictatorship led by the working class and based on the alliance of workers and peasants" (Constitution of the People's Republic of China of 4 December 1982). The working class is represented by the Chinese Communist Party which has existed since 1921 and has approx. 40 million members. Consequently, the party leadership is of central importance for the structure and government of the State and society.

The supreme decision-making body is the Central Committee which is elected at intervals of a number of years at the party congresses. The Central Committee elects the Politburo, the Secretariat and Secretary General of the Central Committee from amongst its ranks. In turn, the Politburo appoints a permanent committee. In addition to these bodies, the Central Military Commission, the Central Advisory Commission and the Central Disciplinary Control Commission are leading party bodies which play a key role. The oldest and most influencial members of the party and military leadership hold office in the above-mentioned bodies.

Apart from the Chinese Communist Party, there exist within the National United Front, as in other socialist countries, other parties and mass organizations which have but only a limited political influence. With a return to a more open policy in the late '70s, leading figures from these organizations have been gaining more influence. The State is represented externally by the President; the supreme legislative body is the National People's Congress, whose meetings normally follow the party conferences of the Communist Party of China. Executive powers lie

with the State Council of the People's Republic of China, which is made up of Ministers, the Chairmen of a number of commissions and the representatives of central authorities, (e.g. the Chinese People's Bank). The chairmanship of the State Council is held by the Prime Minister and his deputy. A number of commissions are charged with the coordination and control functions in specific areas, e.g.

- the State Planning Commission, which is responsible for the State plan,
- the State Economic Commission, made up of representatives of the individual ministries (for mechanical engineering, electro-technology, chemicals, textiles, light industries, agriculture, etc.),
- the Commission for Science and Technology, and
- the Commission for Science and Technology in the military sector.

A new commission has been set up in the field of education (Central Education Commission) which has absorbed the National Ministry of Education (May 1985). The Chairman is one of the Deputy Prime Ministers, Deputy Chairman is the former Minister of Education. The commission also includes representatives of the Economic Commission, the Planning Commission, the Ministry of Labour and Personnel and the Finance Ministry. Whilst the responsibility of the former Ministry of Education was limited to schools for general education and for a small section of the universities, the State Commission for Education has more extensive competencies covering various sectors of vocational training, adult and university education. China has 29 provinces (excluding Taiwan and including three municipalities under direct central control : Peking, Shanghai and Tianjin). Five provinces have a special status as autonomous regions. In other provinces there are a number of districts which have been accorded special rights of autonomy for the national minority peoples living there.

1.1.2 Population distribution and development

In 1984 the total population of the People's Republic of China is recorded as being 1 036 million (1983 : 1 025 million). The province of Sichuan has the largest population with more than 100 million inhabitants. With a total area of 1.6 million m² the population density amounts to 107 persons per km² (1982; Federal Republic of Germany: 247). However, the population is distributed quite unevenly throughout the country. The province Jiangsu (Capital Nanjing), for example, has a population density of 590 persons per km² whilst the autonomous region of Xinjiang (Sinkiang) has only 8 inhabitants per km². The urban population in 1984 amounted to 330 million (1983: 241 million) as opposed to a rural population of 705 million (1983: 784 million). Accordingly, by far the most Chinese live in rural areas. [2)]

Since the foundation of the People's Republic of China in 1949, the population has almost doubled; however, since 1976 there has been a marked drop in the population growth as a consequence of effective birth control measures, particularly in the municipalities. The following table shows the development over specific periods :

Population in millions	1949	1957	1965	1976	1983	1984
Total population	541.67	646.53	727.38	937.17	1 024.95	1 034.75
Urban population	57.65	99.49	130.45	163.41	241.26	330.06
Rural population	484.02	547.04	594.93	773.76	783.69	704.69
Population in %						
Urban population	10.6	15.4	18.0	17.4	23.5	31.9
Rural population	89.4	84.6	82.0	82.6	76.5	68.1
Male	51.96	51.77	51.18	51.49	51.58	51.63
Female	48.04	48.23	48.82	48.51	48.42	48.37

In the People's Republic of China there are, in addition to the largest group of the Han Chinese, 55 ethnic groups with the status of "national minorities". The Han Chinese account for 93.3% of the total population, whilst the 55 national minority groups account

for 6.7%. The following figures show that from 1964 to 1982, the population of the national minorities has increased at a greater rate than that of the Han Chinese majority (+ 68.4% as compared with +43.8%).

Han Chinese/national minorities (in millions)

	1964	1982
Total population	691 220 104	1 003 937 078
Han Chinese	651 296 368	936 703 824
National minorities	39 923 736	67 233 254

1.1.3 Level of education

When the People's Republic of China was established, by far the majority of the Chinese were illiterate; skilled workers accounted for only a small percentage of the labour force. According to official Chinese figures, there are to-day approx. 238 million illiterate in the People's Republic, i.e. less than a quarter of the total population (results of the third national census of 1982). Whilst 19.17% of the Chinese male population over 11 years of age is illiterate, this applies to almost half the female Chinese population in the same age group (45.27%).

To-day, more than 90% of the children of school age enter the (5 or 6 year) primary school. Whilst in rural regions the main objective is the general introduction of at least primary education, in the municipalities the lower middle school (2 to 3 year lower-middle school following primary school) is the rule. In a number of major cities such as Peking and Shanghai, and in the cities of the north-east (Manchuria) many children are able to attend the upper-middle school, and consequently spend a total of 10 years and more at school.

1.1.4 The socio-economic framework

China is rich in raw materials. However, owing to their geographical location, they are difficult to exploit commercially. Mining of the following minerals is carried out on a substantial scale, and to some extent, these are also exported : lead, gold, copper, magnesite, manganese, molybdenum, nickel, phosphate, mercury, silver, uranium, vanadium, tungsten, zinc and tin. China has rich coal and oil resources. If production is kept up at the same rate and on the same scale as at present, the resources will last for many decades. In 1985, 850 million tons of coal were produced (1984: 772 million tons). Oil is also produced on a considerable scale (1985: 125 million tons; 1984: 114.53 million tons); however, production in the commercial oil fields is declining so that great efforts are being made to discover new sources.

Since 1949, agricultural production has developed as follows :

Primary agricultural produce in million tons

	1949	1957	1965	1978	1983	1984	1985
Grain	163.92	195.05	194.53	304.77	387.28	407.12	378.98
Cotton	1.304	1.640	2.098	2.167	4.637	6.077	4.15
Vegetable Oil	4.193	4.196	3.625	5.218	10.550	11.852	15.78
Meat	3.385	3.985	5.510	8.563	14.021	15.250	17.55

The high growth rates between 1978 and 1983 - above all for cotton, vegetable oil and meat - are essentially the result of agricultural reforms under which responsibility for production is assigned to the individual farming units/households on a contract basis ("self-responsibility system", cf. p. 82).

In 1985, gross agricultural production amounted to 451 billion Yuan (1984: 361.1 billion Yuan), 93.5 billion Yuan of which being the result of village industry (1984: 55 billion Yuan). Industrial production, on the other hand, accounted for 875.9 billion Yuan (1984: 701.5 billion Yuan).

Agricultural side-line production (handicrafts and village industry) together with forestry production, livestock and fish farming account for a considerable proportion of the total agricultural production as can be seen from the following table :

Agricultural production in percent

	1952	1957	1965	1978	1983	1984
Agriculture	83.1	80.6	75.8	67.8	62.2	58.1
Forestry	0.7	1.7	2.0	3.0	4.1	4.1
Livestock	11.5	12.9	14.0	18.2	15.5	14.2
Fish farming	0.3	0.5	1.7	1.4	2.0	1.7
Side-line production	4.4	4.9	6.5	14.6	16.2	21.9

Before 1949 industrial activity was almost exclusively concentrated in the coastal municipalities and regions (textile, tobacco industries, light industry, shipbuilding, power plants) and in what was formerly Manchuria (heavy industry). In the course of industrial development in the '50s, the People's Republic established a relatively sound industrial basis.

In terms of per-capita income of approx. 300 US $ per year (1983), the People's Republic of China belongs to the poorer developing countries; however, if one applies additional indicators such as the average life expectation (1983: 67 years), medical provision and school attendance, China is located at the upper limit of the group of countries with a medium income. In addition, the economy is not characterized by a mono-structure typical of many developing countries. On the contrary, the People's Republic of China has a fully developed industrial production structure which provides a most favourable basis for the further development of its economy. Imports and transfers, above all the import of advanced technologies, are to be financed by increasing exports.

In order to make the overall economic system more flexible, efforts are being made to introduce elements of a market economy and to grant firms and households greater room for action. At the same time, it is intended to bring about a system of indirect control to replace the current rigid planned economy through the creation of tax and credit policy instruments.

From 1980, exports increased from 18.27 billion US$ to 27.36 billion US$ in 1985. [3] Whilst in the past China's chief exports were raw materials and agricultural produce, an increasing volume of industrial goods is being sold on the world market in addition to raw materials (above all non-ferrous metals and crude oil). In 1984, raw materials and industrial goods together accounted for 54.4% of exports. At the same time there is a steady increase in the number of foreign firms investing in China.

As a percentage of the total labour force in industry and agriculture, there has, since 1949, been a steady increase in the number of workers in industry; 6.7% in 1952 to 16.3% in 1984 (1983: 15.6%; the number of agricultural workers dropped from 93.3% in 1952 to 83.7% in 1984 (1983: 84.4%), but the figure is still very high.

Despite an overproportional increase over the last few years, there is still only a very small proportion of scientific/technical workers amongst the total labour force. Here the number of university graduates is an indicator. In 1983, only 3.11 million out of a population of over a billion held a university degree.

Unemployment is also a problem in the People's Republic of China. Although it does not appear in the official statistics, it is on the increase. In rural areas it takes the form of latent underemployment, whilst in the municipalities youth unemployment is primarily involved. There are a number of causes. Firstly, a high-birth generation is entering the labour "market"; secondly, surplus labour is drifting from rural areas into the towns, where it is not possible to make enough new jobs readily available. In addition, in accordance with the latest decisions concerning the modernization of the military service, soldiers are being demobilized, and these have an entitlement to a job. Finally, an additional bottle-neck is caused by those who, in former years, were unable to find a job upon completion of schooling, or those who, after the cultural revolution, returned to big towns from the country and were either partially employed or without any form of employment. For some years, efforts have been made to

promote the establishment of small industrial and service enterprises - also as a measure to combat unemployment. Whether or not this measure will prove successful depends essentially on the extent to which more young people can be trained for vocational qualifications than in the past. The lack of training - in all sectors of the economy - is one of the major obstacles for the achievement of the objectives pursued by the modernization programme. Consequently, great efforts must be made and unconventional methods applied in order to bring about a rapid and effective improvement in the quantity and quality of vocational training provision in the People's Republic of China.

2 Historical development [4)]

2.1 Philosophical roots

The Chinese education system, and indeed the whole of society bears the decisive mark of Confucianism, which for almost 2000 years, with intermittent breaks, was the dominant ideology since the time of the Han dynasty (206 BC to 220 AD). It formed the basis for the policies established by the imperial bureaucracy, a State system which did not collapse until the confrontation with foreign powers at the beginning of this century (1911). State officials were scholars who had to prove their knowledge of historical texts and their interpretation by examination, in this way gaining access to their office. They had to possess the moral fabric to administer, uphold and safeguard the State. They were not required to have specialist knowledge; for this there were craftsmen and other specialists.

Around the sixth to third centuries BC, the so-called 100 Schools of Thought, covering a whole range of philosophies developed in a period in which rivalling feudal lords were struggling for influence and supremacy in China. The teachings of Confucius (Kongzi, approx. 551 to 479 BC), aimed at educating the aristocrat to become the "superior man" (junzi). As opposed to the "common man" (xiaoren), the "superior man" observed the rituals (li), originally concerned with the harmony of men and the cosmos. This was closely linked with the ancestral cult and the agrarian cult, which went to form the calendrical structure of the almanac. The behaviour of the "superior man" was governed by humanity (ren). With filial piety (xiao) he served his ancestors and parents as required by the hierarchical structure of society.

A new feature in the teachings of Confucius was the reinterpretation of the criteria established by the traditional social hierarchy; for him, talent replaced aristocratic birth, and accordingly, his disciples were not all of noble origin.

Like the followers of other philosophical schools, a number of them managed to procure posts at the Royal Courts as counsellors in government affairs.

Of the other philosophical schools, the legalist and Taoist movements almost attained the same level of prestige as that of Confucius and his followers. The legalists were also primarily concerned with politics and the State. The central notion in their teachings was "law and order" (fa), which does not, however, constitute a legal norm. For the older legalists, the notion "fa" was taken as a means of achieving and maintaining the desired order in State and society. The feature of the legalist school was that it made no provision for an independent external force, such as humanity, justice or any other moral concept vital for the existence and functioning of the State. In common with the Confucianism, was the idea of a sole ruler whose absolute authority they acknowledged and maintained. It was this aspect which favoured a mixture of the two philosophies.

When the legalist school in this period of the Qin dynasty (221 to 206 BC) had become the official ideology, it adopted elements of the teachings of Confucius to form an orthodox Confucianism in a now united China ruled by the Han Dynasty (206 BC to 220 AD). In later history, legalism was always called on when the power of the State was to be strengthened and the ruler granted absolute authority.

The Taoist philosophy, said to have been established by Laozi (Daode jing) and Zhuangzi, concentrated on the concept of "dao" (the Way). This teaching has its origins in the oldest Chinese religion and defined the cosmic movements such as the course of the stars, the changing seasons, day and night, and the resulting principles for mankind. As in a world governed by dao, there is no necessity for the use of force, the ruler was recommended to "do nothing" (wu wei), signifying that he should rule only through the power of his virtue (de).

Elite officialdom found refuge in Taoist mysticism, which afforded them the necessary indifference over the centuries of civil war and the penetration of foreign peoples (from the end of the Han dynasty in 220 AD to the beginning of the Sui dynasty 581 AD). Alternating with "rational" Confucianism, which was mixed with elements of legalism to form the orthodox State doctrine, the "irrational" Taoist philosophy always made a deep impression on the Chinese intellectuals. The mystical leanings of individuals who sought to escape from a world restricted by rules and regulations, found their outlet in Taoism.

Buddhism, Islam and Christianity came to China as foreign doctrines which, to a varying degree, were able to adapt to and insert themselves into, and even change, the Chinese mentality. Buddhism, which was the most successful in this respect (arriving in China approx. 65 AD), flourished most in the period of the Tang dynasty (618 to 907). Monasteries, art and literature experienced a boom, but these suffered set-backs as a result of persecution, whenever religion and worldly influence threatened to limit the power of the Emperor.

The teaching of Confucius that any man can achieve a state of virtue through education alone, and that education cannot be measured in terms of direct utility, is in its essentials still valid today. Preference was given to a classical education, which was the basic element in the preparation for a career in the administration, rather than to specialized education. Even today, general education has a higher status than a vocational education.

2.2 State bureaucracy and examination system

As early as the Han dynasty (206 BC to 220 AD) a rationally organized, hierarchical and centralist bureaucracy developed. In the social hierarchy, officials occupied the highest position, above the peasants, craftsmen and merchants (shi - nong - gong - shang).

Under the dynasties of Sui (581 to 618) and Tang (618 to 907), the examination system, which already had its roots in the Han dynasty, was revived and expanded. The examination involved the interpretation of the canonical texts. From the time of the Han dynasty these included the "five classics" (Shi jing - the classic of poetry; Shu jing - the classic of history; Liji - the classic of rituals, Yijing - the classic of changes, and Chunqiu - the Spring and Autumn annals). In the early years of the Sung dynasty (960 to 1279), the original canon was extended through the influence of Neo-Confucian philosophy, which had absorbed mystical elements of Taoism and Buddhism. From then on, the "four books", i.e. Lunyu (the conversations of Confucius), Mengzi, Daxue and Zhongyong formed part of the orthodox doctrine and were consequently subjects for examination. The number of individuals who could pass the examination was fixed in advance, as was the number of graduates at the various levels (shengyuan - "Bachelor"; juren - "Master"; jinshi - "Doctor". A successful candidate was not automatically entitled to an office.

Although in principle, under this examination system, access to official posts was open to all, it entailed many years' intensive study of the canonical texts in order to pass the examination. As such preparation mostly took place in private schools and through private (household) teachers, it was basically only wealthy families who could afford to have their sons educated. Women were excluded from administrative offices and consequently, were unable to take the examinations.

The complexity of the bureaucratic system and the lack of professional qualifications on the part of the officials were a major factor leading to the fall of the Empire, which was triggered off by the confrontation with foreign powers (from 1840).

In the examination system, moral values always played a more significant role than specialists knowledge, and the examination texts were interpreted by the candidates in accordance with the prevailing opinion of the times. In the imperial bureaucratic State, the qualification obtained by examination was always more important than the subsequent performance of the individual in office - a phenomenon which still has its traces to-day. Despite far-reaching changes in the political and social system, there are still sets of standard values which have dominated the Chinese mentality throughout the centuries up to the present day.

2.3 Craft guilds and apprenticeships

For many centuries China's economic structure was characterized by the unity of agriculture and subsidiary craft production; the peasant population was essentially self-sufficient. Agriculture provided food whilst subsidiary production supplied clothing, tools and other utensils.

However, as early as the spring and autumn of the Chunqiu period, 770 to 476 BC, there were craftsmen who had abondoned farming, as is recorded in the works of Mengzi and Hanfeizi. They developed a period of urbanization with the creation of trading centres, in which the craftsmen obtained supplies of raw materials and where they could find better markets for their products. For the main part, however, the cities were the seat of high-ranking officials and they never achieved the independent status and economic power attained by European cities following the Renaissance.

Trade did not develop in China on the same scale as in Europe, where sea transport provided a more favourable basis. In the social hierarchy of the Confucian State, the merchants formed the lowest class after the officials, peasants and craftsmen. They were always subject to the restrictions and controls of the bureaucratic State. If they acquired wealth (as did the salt merchants), they used it to buy themselves into an office or to buy land; however, the accumulation of such capital did little to form the basis for industrialization. Although large mines and factories already existed in the Sung dynasty (960 to 1279), their emergence was the result of State initiative.

As in medieval Europe, the further development of the crafts pursued by the families or clans led to the creation of guilds. They offered the craftsmen protection against arbitrary action on the part of the officials, and help to avoid undesirable competition. Prices, product qualities, wages, the number of apprentices and the duration of apprenticeships, etc., were fixed in guild ordinances. Any infringements were subject to stringent sanctions. It was strictly forbidden for guild members to do business with non-members. The Chinese term hang (guild, trade, branch) makes its appearance in the period of the Sui dynasty (581 to 618 AD). There was no strict division between crafts and guilds.

Apprenticeship training was also intended as a means of controlling access to the guilds. The number of approved apprenticeships was limited to the number of trained workers subsequently required within the guild. In this way the guilds could prevent the guild secrets from being "spread abroad" by a trained apprentice.

The Italian merchant Marco Polo, who lived in China from 1260 to 1294, records the existence of 414 guilds in the then capital

city of Hangzhou. Trade increased in the period of economic growth during the Sung Dynasty (960 to 1276 AD). Craft firms grew in size and began to employ unskilled labour. Large factories developed in the mining, silk production, porcelain manufacture and tea processing sectors. Porcelain, silk and tea were amongst the most treasured export articles.

In the mid 19th century, more and more foreign industrial goods were no longer limited to the coastal zones, but began penetrating the central regions. The craft guilds with their outdated production processes found it difficult to compete. The manufacture of fans, for example, was spread over five different guilds, each of which was only allowed to carry out with a single process.

The guilds began more and more to lose their independent status until in 1913 they were forced under the authority of the Chambers of Commerce. Nevertheless, during the period of the Republic (1911 to 1949) the crafts, with their products and services, continued to play an important role. In the mid '30s, there were 60 million craftsmen as opposed to no more than 3 to 4 million factory workers.

Independent craftsmen were able to maintain their status even into the '50s, after the establishment of the People's Republic of China in 1949. From 1954 to 1956, their firms were absorbed by cooperatives, although they still did not lose their independence completely. Both in urban and rural regions, craft firms are still to be found, and these are run either by individuals or in the form of collectives. The growing significance of the tertiary sector under the modernization programme, offers the crafts new opportunities for development, and, as a result, they are regaining popularity as a training institution.

2.4 Development of a public education system

The involuntary confrontation with foreign powers, which, beginning with the opium war (1840), led to a series of defeats, heralded the collapse of the Empire. Although a number of reformist imperial governors and other high-ranking officials joined together in the "self-strengthening movement" (1861 to 1894), the imperial court was not willing to accept any far-reaching reorganization of the State system. Meanwhile, Japan, in the course of the Meiji reform (1868 to 1894), had become in less than 30 years an industrial nation with a strong military force and efficient administration. Its victory in the Sino-Japanese war of 1894/95 was clear evidence of its power. From then on, Japan joined the group of powers competing for privileges in China.

In the first phase of the self-strengthening movement, the Chinese imperial court declined to make extensive reforms and concentrated on the development of a military sector based on a small foundation of heavy industry (shipyards, armaments and textile factories). These measures could not, however, rescue China from a situation of decline.

In the field of education, only isolated efforts were made. At the Fuzhou centre in Mawei, for example, engineers, shipmasters and translators were trained. A number of foreign language-schools were set up and students were sent abroad to study. Independent of these activities, Christian, and above all protestant missions, had opened modern schools, colleges and hospitals for the education and training of a progressive élite open to western ideas. Missionaries were amongst those who submitted pleas to the imperial court for the establishemnt of a public education system.

Since the time of Matteo Ricci (1594 in Peking), Jesuit monks had played an important part in the transfer of western science, which had made considerable progress since the European Renaissance, and up to 1838 Jesuits served the Empire as court astronomers. However, despite its achievements in education and medicine, Christianity fell into disrepute as a result of the close connections between missionaries and foreign merchants, and military action following the opium war (1840) - a taint which still exists to-day.

After the defeat of China by Japan (1895), the "self-strengthening movement" revived, but only for a short time. This period experienced the large scale establishment of coal and ore mines, the construction of steel-works and railways (for example between Hankou, the present day Wuhan, and Peking) and the setting up of telegraph links. Success was limited owing to a lack of capital, organizational difficulties and poor (mixed) State/private management.

During this same period, however, the imperial government decided to encourage Chinese students to study abroad. Accordingly, at the beginning of this century, there were more than 10 000 Chinese students in Japan alone. Finally, from 1903 onwards, a public education system was developed following the Japanese pattern, which in turn had taken the French and Prussian model as a basis. It provided a continuous link between primary schools, secondary schools and the already existing universities, and, at last, in 1905 the examination system granting access to officialdom was abolished - a measure which had been long called for.

After the establishment of the Chinese Republic was proclaimed by Sun Zat-sen in 1911, the first education Minister Cai Yuanpei set up a department for "social education" within his ministry. This department was assigned the task of promoting adult education, the illiteracy rate being 80%. However, traditional Confucianist

schools continued to exist along with the "new schools", and in its essentials, the elitist character of the education system was maintained. Soon after, Cai Yuanpei and other members of the government fled abroad when the first President of the Republic Yuan Shikai eliminated all the democratic forces, re-introduced Confucianism and prepared for the restoration of the imperial system.

It was only in connection with the May 4th Movement in 1919 that Confucianism was fundamentally criticized as being the cause of China's underdevelopment. This protest movement was triggered off by the condition of the Treaty of Versailles concluded at the end of the first World War, to the effect that the former German possessions should not be returned to China, but that they should be retained by Japan. In the major cities, and in particular Peking, there was an outburst of protest in which, for the first time, students, school-children, intellectuals, workers and members of other social classes were united.

The movement was led by intellectuals who had returned from their studies abroad in the USA, Japan and western Europe. A number of American professors, under whom the Chinese had studied, came to China for a series of lectures between 1919 and 1922, amongst them the philosophers and educationists John Dewey and Paul Monroe. For one year, John Dewey was visiting professor at the Peking university, the intellectual centre of China at that time.

The successful October Revolution in Russia (1917) also played a significant role in the new intellectual movement. Up to that time, Marxism, both as a doctrine and a criticism of European capitalism, had had little effect in China. This situation changed, for the Revolution had succeeded in a relatively backward rural society under conditions comparable to those in China. During the First World War, Chinese (140 000) had already been employed in ammunition factories in France. There, they had come

in contact with the Communist Party and the trade union movement, and a number of them became the founding members of the Communist Party of China.

Following the May 4th Movement in 1919, a new school system was set up on the initiative of the government in 1922 along the lines of the American system (6 - 3 - 3). Emphasis was placed on a pragmatic education, the development of the individual and on education in practical democracy; demands which had already been formulated by John Dewey and others. In 1923, however, only 17% of the children of school age attended a primary school (1928/29 : 21%).

Along with the "new schools" there continued to exist a considerable number of traditional educational institutions. In 1923, almost as many pupils were attending these schools as the "new schools".

A commission of the League of Nations, of which the then Prussian Minister for Culture C.H. Becker was a member, stated in a report following a study visit in 1931 that primary school education and vocational training had been dreadfully neglected and that only the élite had benefited. This, the report said, constituted an injustice for the mass of the population and was furthermore a risk for the future.

2.5 The education system since the establishment of the People's Republic of China

In the period following the Second World War and the Civil War between the nationalists (Guomindang under the leadership of Tschiang Kai-shek) and the communists (Communist Party under its leader Mao Tse-tung) in which the communists were the victors, China still had a very high illiteracy rate, and the education facilities were very poor, particularly in rural areas. There was a considerable lack of skilled workers and specialists in all

sectors. Existing elements of vocational training (apart from the traditional craft apprenticeship) and adult education had experienced very little development in the first decade of the Republic. A "general" elementary education system was only to be found in the Communist Party strongholds.

In the initial development phase of the People's Republic of China (1949 to 1957), the first five-year plan established the basis for the growth of heavy industries; numerous industrial plants were established in rural areas, and the infra-structure was improved by the construction of a number of railway links - with the support of the Soviet Union and the Eastern European countries. This development was accompanied by successive reorganization of agriculture in collectives. With the development of industrial areas, schools were set up for the training of skilled workers and technicians, together with a number of engineering universities. In the field of education, the fight against illiteracy and the training of technical cadres was the prime objective.

During the "Great Leap Forward" (1958 to 1960), people's communes were set up in rural areas, and with the help of a vast labour force, canals, dams and irrigation projects were completed and small rural industries established.

In the rural and urban areas, part-time schools (half-work/half-study schools) were set up, these being financed from local funds. As a result, the formerly neglected rural education system began to flourish.

The "Great Leap Forward" was followed by a phase of re-adjustment (1961 to 1965). After three difficult years, efforts were made in industry and agriculture to attain the level of success of the '50s. In education, the "two track system" became firmly established; apart from the education of the élite at universities and selected general secondary schools (key schools), provision was made for the training of the masses in vocational training

and adult education courses and in the rural education system. In the process, the percentage of vocational training courses at secondary school level in urban areas increased, reaching 50% in some municipalities - a level which has again become a target.

There followed the phase of the Cultural Revolution (1966 to 1969) and the period up to the death of Mao Tse-Tung and the dispersal of the group around his widow Jiang Qing (1976). After years of public unrest, the discussion centred on the question of the development concept to be followed in future. In education, the main issue was the interpretation of the concept "both red and expert", in other words, whether the selection and training of specialists should be subject to political or performance criteria.

Most vocational training schools were closed and all universities moved into the country or discontinued their teaching activities. Young school-leavers were sent to the country to work in agriculture, and the criticism designed to humiliate the intellectuals not only found verbal expression, but also took the form of physical violence, maltreatment and death.

B. STRUCTURES AND PROBLEMS

1 The education system in the early '80s

1.1 The reform movement and the "4 modernizations"

The present spate of reforms in the People's Republic of China leads back to the end of 1978 when the "reform wing" amongst the leaders of the Communist Party of China (Central Committee) around Deng Xiaoping was the leading faction. It was then that the modernization course was plotted, which became known as the "realization of the 4 modernizations". Its objective is, by the year 2000, to make China an advanced country which can measure up to the present day industrial nations in the fields of industry, agriculture, science and technology, and last but not least, in the military field.

The concept of the modernization course has its origin in the early '60s. During the Cultural Revolution, this programme was shelved and replaced by the "road to independence and self-confidence". This, however, led China into isolation. In the early '70s, the modernization programme was reformulated when the People's Republic of China joined UNO (replacing Taiwan) and established diplomatic relations with a number of western countries, including the Federal Republic of Germany.[5)]

Following the death of Chairman Mao Zedong and the dispersal of the leading group around his widow Jian Qing (1976), the door to a re-orientation was opened. At first, attention was concentrated on a number of large scale projects, a move which over-reached China's economic potential. In the years following 1978, the overambitious objectives were reduced to a realistic scale, and instead of expanding production by setting up new "turnkey" factories, work began on the reorganization and modernization of the existing industrial plants.

With the introduction of the system of self-responsibility (cf. p.82) in agriculture, the economic activity in rural areas has shown a marked increase. The growth in the production of cereals is such that for large areas of China a subsistence level is guaranteed. Furthermore, subsidiary production in rural areas has developed considerably, and the peasant population, at least in the more prosperous regions, has become a new market for the products of urban light industries.

In industry, experiments are being made with a number of different methods of motivating and mobilizing workers towards a higher performance. The introduction of a bonus system did not lead to the desired objective, as in the individual firms, the bonuses were a linear element of the wage and consequently there was no competition amongst the workers within the firms.

In a second step, consideration was given to the possibility of taking the workers' qualifications as a basis in order to increase the productivity of existing firms. This phase has not yet been concluded; it is here in particular that new changes are to be expected with the introduction of the self-responsibility system in the municipalities (cf. p.82). The acquisition of formal educational qualifications is gaining in importance in connection with the calculation of wages and salaries, i.e. wage and salary categories are to be based on education and training levels.

1.2 The education system - an overview

To-day, the education system has roughly the same form as in the '50s, the period in which the People's Republic of China was established.

The primary school level (5 to 6 year primary school - xiao xue 小学) has been developed throughout the country, although outlying regions, above all the mountainous areas, are inadequately

catered for. In the rural regions, the introduction of the five year primary school continues to be the first priority. As a national average, the attendance rate at primary school level amounts to approx. 94% (November 1984). However, up to 1983 the five year primary school had only been introduced on a general scale in 600 of a total of approx. 2 000 districts.[6)]

In the municipalities, the six year primary school is the rule, the five year school the exception. This is followed at secondary school level by the (3 year) lower-middle school (chu zhong 初中). It has been generally introduced in urban areas so that here the school period lasts nine years (6 + 3). The continuation of the lower-middle school is the upper-middle school (gaozhong 高中) which, in general, covers a period of three years. It is divided into a general and a vocational middle school (in rural areas: the agricultural middle school).[7)]
The number of pupils passing on to the upper-middle school varies according to the region. The figures are particularly high in those cities with more than a million inhabitants. The general middle school is still the most popular as it leads directly to the examination qualifying for entry into the universities.

It is only in the last few years that the vocational training courses at secondary school level have regained their popularity. However, the historical peak in the history of the People's Republic, i.e. 1964 and 1965, has not yet been reached.[8)]
At that time, roughly half of the school population at upper-middle school level attended vocational training schools. Whilst in 1980, the figure was only 15%, it has meanwhile steadily increased (1984: 34%; 1985: 36%).[9)]

At present, the majority of lower-middle school-leavers neither attend higher level schools, nor do they take up regular vocational training. From 1980 to 1984, the number of lower-middle school-leavers fluctuated between 9 and 11 million, whilst only approx. 4 million pupils were enrolled in the higher level schools (including the vocational training courses).[10)]

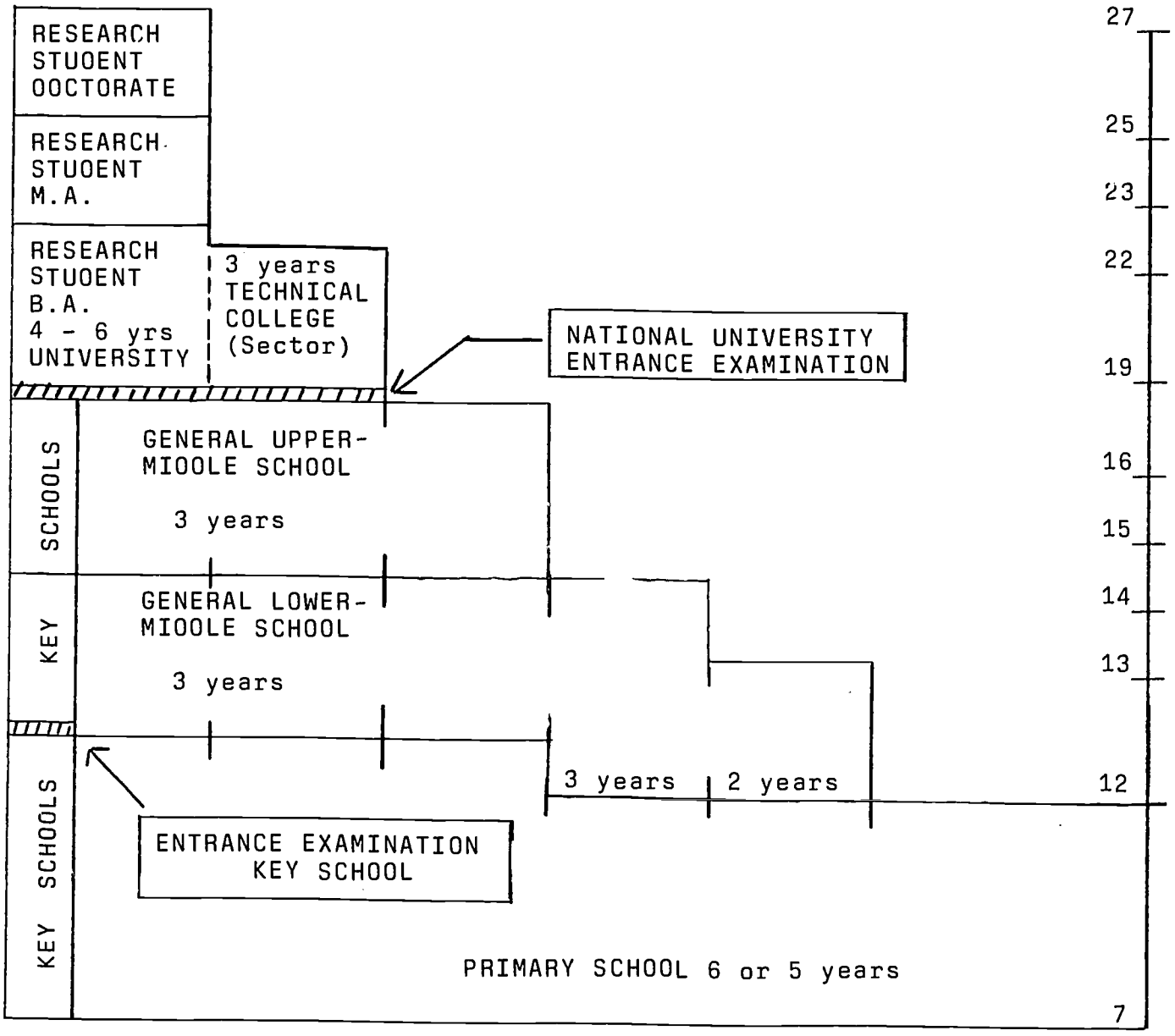
The universities and technical colleges experienced only a limited increase in the number of enrolments over the past six years since 1978, whilst at the same time the number of general upper-middle school-leavers declined. This is due, to some extent, to the conversion of general upper-middle schools to vocational middle schools. Nevertheless, the chances of upper-middle school-leavers to gain entry to a university or technical college is still limited (10.15% in 1982 and 16.62% in 1983).[11] In the People's Republic of China, there are roughly the same number of students at technical colleges and universities as in the Federal Republic of Germany - although the population is 17 times as high - (1983: 1.2 million; 1984: 1.4 million; 1985: 1.73 million).[12]

In spite of the limited capacity of the universities and technical colleges, this is for many young people and their parents the only worthwhile aim. As a result, year after year millions of young people (lower- and upper-middle school-leavers) leave the general education system without any vocational qualifications and with no chance of studying. For this reason, a number of the existing (general) upper-middle schools are being converted into vocational training schools.

Together with the secondary technical schools (zhong zhuan 中专) and the skilled worker training schools (jigong xuexiao 技工学校), these schools provide young people at upper-middle school level (1984: 34%; 1985: 36%) with an opportunity for vocational training. Despite the considerable efforts which have been made and the success achieved, this is still only a modest percentage compared with China's real need for people with vocational qualifications.

A special feature of the Chinese education system is the existence of key schools and key universities (zhongdian xuexiao, zhongdian daxue 重点学校、重点大学). In general, the staff is more highly qualified and the material conditions (classrooms, laboratories, libraries, etc.) of a higher standard than in the majority of the regular schools.

THE GENERAL EOUCATION SYSTEM



These schools developed in a critical period when staff and equipment of the general education schools were so limited that they could not meet the standards required by the universities. The key schools offer their pupils a relatively good chance of obtaining the established minimum marks in the national university entrance examination, and consequently have attained the character of schools for the élite. Accordingly, a place in these schools is

much sought after. Competition amongst pupils for enrolment in the key schools already begins in the primary school, as even entry to the lower-middle schools is solely by examination.

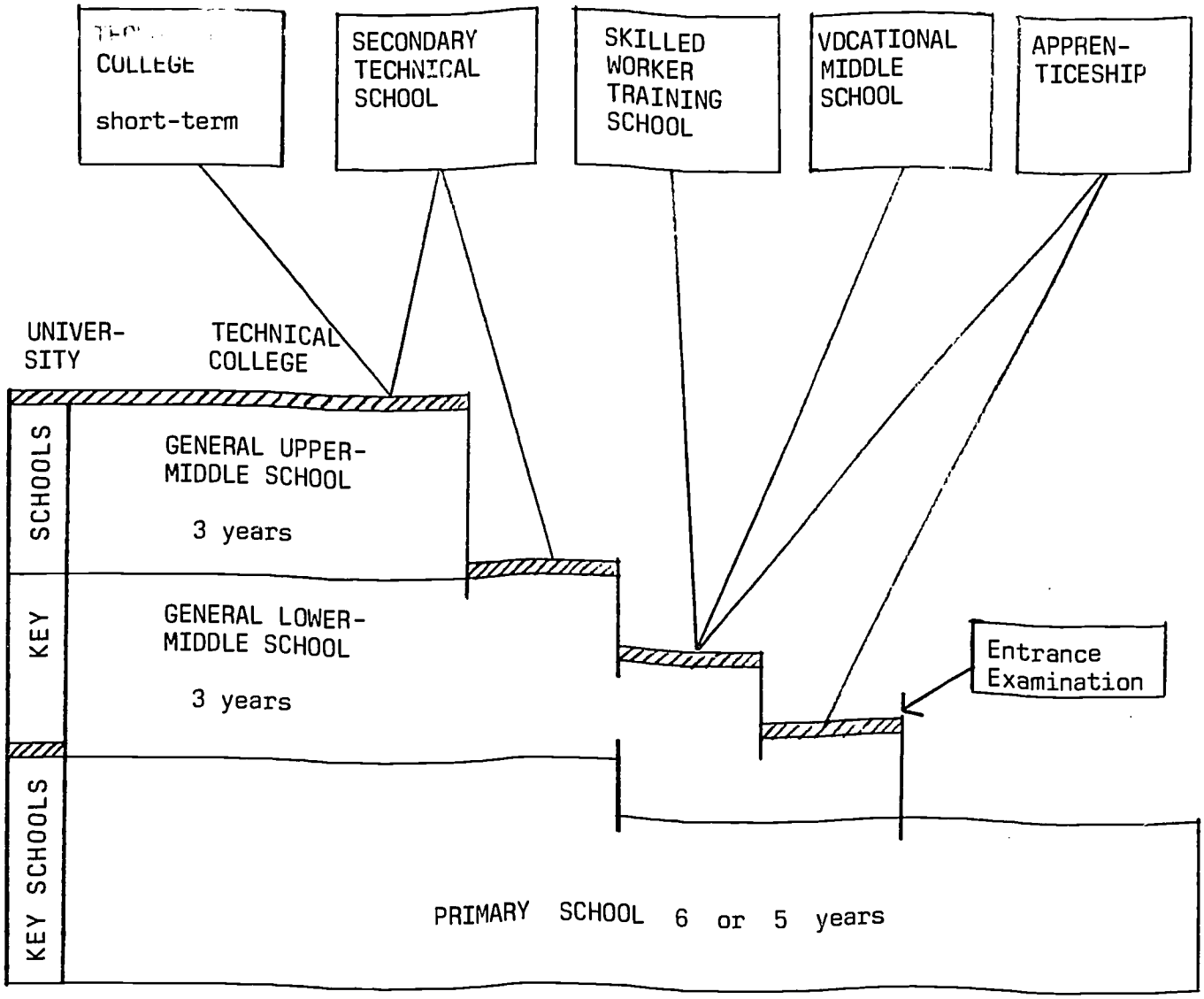
The principle of key education is also a feature at university level although less consistent; here too, the teachers and lecturers are better qualified, the libraries better equipped and, last but not least, the positions available on completion of studies have a higher prestige rating, so that it is correct to speak of an elitist education. For a better understanding of this situation, it should, however, be recalled that the People's Republic of China still does not have the resources to equip all its schools and universities to at least roughly the same standard.

1.3 The status of vocational training in the education system

In the People's Republic of China, vocational training encompasses, apart from the technical colleges and universities, a whole series of training courses at secondary school level which, in general, require the participant to have obtained a lower-middle school certificate. Apart from the three vocational training schools: the secondary technical school (zhong zhuan 中专), the skilled worker training school (jigong xuexiao 技工学校) and the vocational middle school (zhiye zhongxue, zhiye gaozhong 职业中学、职业高中), there are also apprenticeships and short-term training courses for school-leavers.

In the history of the People's Republic of China, vocational training has been affected by political changes much more than has the education system as a whole. During the cultural revolution, many vocational training schools were closed, as they were seen to reflect the "two-track education system" ("education for the masses" versus "education for the élite").

TRAINING PATHS



General education up to university level provided access to the more prestigious positions in society, whilst a vocational education was seen to be a second class education. As a consequence of this criticism, there developed a single type of school in which all the pupils were to learn and participate in production work.

For this reason, many vocational training schools were closed and converted into flats or put to other purposes, and it was not until after 1978 that vocational training schools of various types were successively reopened. Vocational education continues to be of low status, and the development of vocational education schools, over the last few years, has by no means been consistent. Whilst there has been a marked increase in the number of vocational middle schools, there has been a stagnation in the development of secondary technical schools and the skilled worker training schools.

Apart from the vocational education schools, apprenticeships still play an important role; however, the content and organization of apprenticeships has so far received little attention.

In the course of the "4 modernizations" the economy cannot be developed further without the creation of a reservoir of qualified workers at the different levels. Accordingly, vocational education and training is an absolute essential. It covers both the initial training of young people and the remedial training of adults who are already in employment, but who did not receive adequate training at an earlier stage. Accordingly, adult education and training was included in the work of the project "Situation and Development Perspectives of Vocational Training in the People's Republic of China".[13)]

1.4 The specific role of adult education in the People's Republic of China

To-day, adult education in the People's Republic of China involves, for the main part, general education. There are two reasons:

- The general education system experienced only a limited development and in the years 1966 to 1976 was not fully operational, so that a considerable backlog developed as regards the need for school-based general education.

- The public higher education sector had not, and still has not, reached a high stage of development. Accordingly, adult education has an important function with regard to the acquisition of higher education qualifications, above all, at technical college level.

As the opportunities for young people to undergo initial vocational training were and are limited, there are many adults who still have a need for a vocational qualification.

As a consequence, there is an extremely wide range of adult education structures and sponsors. As long as there is a deficiency, the education authorities are willing to promote, or at least tolerate, the activities of a multiplicity of sponsors.

Adult education takes the following forms:

- a regular course of studies for adults at technical college level, leading to a technical college diploma (only a small number of universities have the authority to grant higher education diplomas to the students in their evening or correspondence courses).
- remedial school-based general education courses such as the "dual remedy" (shuang bu 双补), with which a lower-middle school-leaving certificate is obtained.

- Adult vocational education in the form of secondary technical schools for workers and staff, and for the further education of the cadres.[14)]

Adult education is provided and sponsored by different sectors of the economy which are governed by the individual ministries (in this case adult education is termed worker and employee education - zhigong jiaoyu 职工教育), and is also provided by the local school authorities (leisure-time schools and colleges), individual universities (evening and correspondence studies) and radio and television universities.

In the present reform phase, there has been a marked increase in the number of participants at adult education institutions since 1978 [15)]. Considerable investment has been made in the expansion of a number of institutions. In general, it can be said that within the overall education system, adult education (and vocational education) has recently gained in importance. However, it has not yet achieved, in the opinion of the authors, the status it deserves within the general modernization process in China.

2 Vocational education

2.1 School-based vocational education at secondary school level

From the phase of the cultural revolution, the current political leaders of the People's Republic of China adopted, as the only possible educational path, that provided by the general education schools, passing from the primary school to the lower-middle school and on to the upper-middle school. For the children and youths in the large cities and the neighbouring rural areas, this was the rule, although the school period was shorter: primary school in most cases only 5 years, lower- and upper-middle school together, also 5 years ("comprehensive middle school" - wanquan zhongxue 完全中学).

Following the change of power in 1976, the various vocational education schemes such as the secondary technical school (zhong zhuan 中专) and the skilled worker training school (jigong xuexiao 技工学校) were reopened and were joined by a new school form, the vocational middle school (zhiye zhongxue, zhiye gaozhong 职业中学、职业高中). A small number of "vocational schools" already existed in the early '60s. They were mostly governed by the local education authorities and trained workers for the service sector.

In 1979/80, the politicians in the Ministry of Education rediscovered these "vocational schools" (zhiye xuexiao 职业学校), and decided to convert a number of the upper-middle schools so that up to 50% of the courses were of a vocational character. The main reason for this move lay in the fact that millions of school-leavers who had been turned down by the universities were "waiting for work" (daiye 待业) without having any qualifications for specific occupations or occupational sectors.

At secondary school level the technical schools and the skilled worker training schools are the traditional vocational education institutions. Whilst the technical schools come under the individual sectorial administrations, the skilled worker training schools are governed by the employment authorities and the factories which run them. The pupils leaving these two types of school are entitled to employment. Those leaving the technical schools enter the corresponding sectors, e.g. mechanical engineering, chemical industry, textiles, etc., whilst those from the skilled worker training schools join the factory which runs them.

Despite the great demand for qualified workers, which is by no means covered at skilled worker, master craftsman and technician levels, the responsible administrations seem to find it difficult to expand the schools under their control, opening them up to applicants outside their sector. The reason for this lies, to some extent, in the fact that for each pupil who is enrolled, a

work unit is guaranteed, whilst on the other hand, the manpower figures are planned in advance and cannot be readily increased. On the contrary : with the introduction of the "self-responsibility system", workers appear as a cost factor which limits the attainable profit and which, accordingly, must be kept as small as possible.

In rural areas, where most pupils leave school after five years at primary school or after an additional two years at a lower-middle school and, at most, join general or vocational education courses again as adults, an effort has been made recently to include agricultural and technical subjects in the syllabus of the lower-middle schools. However, this does not, for the main part, involve an immediate vocational qualification but is rather a form of vocational preparation or guidance.

In rural areas,however, vocational courses at upper-middle school level mostly served to prepare the pupils for a cadre function. Following the latest agricultural reforms (self-responsibility system) these schools are gaining in importance as institutions in which the pupils can be trained for "specialized households" (zhuanye hu 专业户, cf. p. 83).[16)]

2.1.1 Vocational middle schools

(zhiye zhongxue, zhiye gaozhong 职业中学、职业高中)

It is in the major cities that vocational middle schools have been opened up over the last five years. These have been highly successful and in most cases operate in close cooperation with firms and the governing sectorial administrations, which are interested in obtaining qualified potential imployees. These partners contribute to the financing of the schools, provide teachers and instructors for the courses, and offer opportunities for work experience. Subsequent employment in a

work unit (e.g. in a factory) is in most cases guaranteed by contract. The percentage of practical training amounts to between a third and a half of the total school period, depending on the subject and the school.

It is planned to introduce vocational subjects into the syllabus of the remaining general upper-middle schools (putong gaozhong 普通高中) - but excluding the key-schools. The aim is to prepare the pupils for working life, should they fail to take the hurdle of the national university entrance examiniation. Whilst experiments are being carried out, it is not yet possible to determine whether this type of vocational orientation will supply school-leavers with a suitable basis for work.

Secondary technical schools (zhong zhuan 中专) and skilled worker training schools (jigong xuexiao 技工学校) normally belong to different sectors or individual firms and grant their school-leavers the right to employment in a work unit, whilst the vocational middle schools still form a part of the general education system [17]. Lessons are often held in existing school buildings as frequently these schools were former general upper-middle schools which were converted to vocational middle schools.

Observations, discussions and interviews carried out during the study visit show that the most frequent form of cooperation is that between the education authorities on the one hand, and the sectorial administrations or individual firms on the other. This can involve the sectorial administrations for light industries, the textile industry, commerce, the arts and crafts. mechanical engineering and electrical industry, for example, but also the local organization of the State travel bureau.

The cooperating administration of the individual firm (firm or workshop under a sectorial administration)

- provides subsidies to cover the overheads (mostly per pupil/year),

- provides "practical instructors" (cf. p. 70 f) for training in the school factory (cf. p. 53 f), the products being often put to further use by the cooperating partner,

- provides technical instructors/teachers for the lessons in theory,

- provides opportunities for work experience, and

- agrees to provide jobs for all or a proportion of the school-leavers.

It would appear to be normal for newcomers to be put into grade 1 of the eight grade wage scale for workers. In general, it is no longer necessary for the school-leaver to undergo an apprenticeship, as practical experience has been evidenced in the work experience periods. (cf. point 5 : competencies and forms of cooperation).

A small number of vocational middle schools are run entirely by firms or sectorial administrations. In such cases, the influence of the education authorities on the training programme and the provision of teachers is limited to the general education subjects and to the supervision of instruction in these subjects. There are also cases where the education authorities run vocational middle schools under their own responsibility. Here it is likely to be more difficult for the school-leavers to gain access to work units which correspond to the line of instruction of the school.

Vocational middle schools educate their pupils mainly for the following occupations :

- Cook (for restaurants and works canteens), tailor/tailoress, salesman/saleswoman, workers in arts and crafts, hotel staff, tourist guide, etc.

In most cases the school-leavers become workers and only in exceptional cases cadres. The school factories (cf. p. 53)

with which the vocational middle schools are combined, are sewing shops, assembly workshops for radio and television sets, "model canteens" (i.e. restaurants run by the school), "model guest houses" and arts and crafts workshops.

In the rural regions, as only a limited number of children attend the general upper-middle schools, more emphasis is to be placed on practical experience already at lower-middle school level. This is achieved by including vocational preparation items in the syllabus. Experiments are also being carried out with vocational middle schools which do not follow on from the lower-middle schools but come after the five to six year primary school. In future - as in the towns - it is planned to educate 50% of the school-children in agricultural upper-middle schools. For school-children in rural regions, there is very little chance of moving on to technical college or university.

Problems :

- The sole basis for the selection of subjects is whether firms or sectorial administrations can be induced to cooperate, as in this way, provision can be made for the employment of school-leavers in the work units.

- In a number of important craft trades, no provision is made for training either at vocational middle schools or in other vocational schools or in the form of an organized apprenticeship. The same applies to clerical occupations (cf. recommendation 15, p. 101).

- It would seem that the content of training is not always aligned to the needs of the future work-place.

- So far, little use has been made of training schedules for practical instruction.

- The school factories (cf. p. 53 f) do not in all cases have a training function. Frequently, they represent for the school a means of improving the material status of the school and the teaching staff, the vocational education function occupying a background position. This is particularly the case when the production range is not in line with the school syllabus.

- There is a considerable lack of qualified trainers and specialist teachers (cf. recommendation 16, p.104).

2.1.2 The secondary technical schools (zhong zhuan 中专)

This is a form of school[18] which was created during the industrialization phase in the '50s, based on the Soviet model. The training of future skilled workers (middle level) at the technical schools followed five years at primary school and two to three years at lower-middle school. At that time, few pupils attended the general upper-middle school and, if they had attended a university, the period of education and training would have been much longer.

Since that time, there have been considerable changes. Since the late '70s (in the towns), a greater percentage of young people stay at school after completing the lower-middle school. In most cases they attend the general upper-middle school for reason of the fact that the vocational education courses at secondary school level has not been developed to an adequate degree. As a consequence - owing to the limited capacity of the universities - a great number of young people are applying to enter the technical schools "from above", the syllabus being a further development of the lower-middle school level.

At the same time, these schools take on fewer school-leavers from

the lower-middle schools, a development contrary to their original function.

For those applicants who have completed lower-middle school, the period of schooling at the technical schools amounts to four years. However, at present there are a number of regions in which there is a backlog of former pupils of the upper-middle schools which has gradually to be reduced. In these cases, the duration of schooling at technical schools amounts to two years.

The original concept of the technical schools, which require a relatively low level of general education, provides for a very high proportion of general subjects and technical theory. The normal relationship between general subjects/technical theory/ practical work is 40%/30%/30%. Vocational or work experience is not a prerequisite. For many activities in the technical/industrial sector, the "surplus" of theory has proved to be a disadvantage. The training programme differs only to a limited extent from that of the technical colleges, and particularly short-term vocational colleges (duanqi zhiye daxue 短期职业大学) recently established or in the process of development.

The real task of the secondary technical schools, however, is the supply of skilled workers (middle level) for firms and administrative bodies, but also for schools and hospitals :

- Accountants, planners/cost accountants, nurses, technicians, laboratory assistants, agricultural technicians, teachers at primary school level, kindergarten staff.

In all, the pupils are trained for 345 different occupations in industry, agriculture, forestry, the health service, public administration (finance) and commercial organizations, in the field of sport and fine arts. Almost half the pupils at secondary technical schools attend teacher training schools for primary school teachers[19].

Almost all those who have passed through technical schools are given lower category cadre posts within the sector of the respective provider, thus establishing their status as middle-level skilled workers and executives[20]. However, there is an increase in the number of graduates from universities and technical colleges, and these are taking up positions in firms and administrations which, from their qualification structure, were planned for those completing secondary technical school. This is especially the case in the production departments and design bureaux in industrial firms.

The secondary technical schools are run by various sectorial administrations who have a corresponding need for middle-level skilled workers or lower-level cadres. These are the provincial sectorial administrations for the various branches of industry : mining, iron and steel industry, heavy industries, light industries, mechanical engineering, electrical industry, textile industry, commerce and finance, the health sector (hospitals) and the education system (teacher training for primary school).

The responsibility for the supervision of this sector - probably as a consequence of the high percentage of general subjects in this school form - lies with the education authorities; the curricula are established by the Ministry of Education and apply nation-wide. Specialist/technical training falls under the responsibility of the individual sectorial administrations so that a form of "dual management" (shuangchong lingdao 双重领导) - cf. p. 75 - has developed.

Problems :

- Seen from the number of pupils, most schools are small; however, they offer a great number of different specialist/technical

subjects. They cover such a large catchment area (often covering a whole province) that all or most of the pupils must be accommodated in hostels.

- Only a small number of school-leavers acquire a job in the specialist field in which they have been taught, as it is difficult to plan the actual future demand. The degree of specialization makes it practically impossible for the school-leavers to take on tasks which deviate from the original training programme. This in turn makes it more difficult to adjust to changing technologies.

- Chinese observers have pointed out that the emphasis given to the various factors does not correspond to the current and future demand. For example, too many people are trained in skills for mechanical engineering and electro-technology, and too few for administrative and management functions[21].

- In view of the small numbers leaving secondary technical school, the supply of middle-level skilled workers and executives falls far short of the demand. As a consequence, these posts are in part taken up by graduates from the universities and technical colleges.

  However, as the supply of university and technical college graduates also falls short of the demand, the result is the ill-use of what are already inadequate resources.

2.1.3 The skilled worker training schools (jigong xuexiao 技工学校)

The task of these schools is the training of skilled workers for factories and other production units[22]. As a rule, the training period covers three years. Theoretical and practical instruction/ production work each take up briefly half of the training period.

The subjects taught are skill-related theory, arithmethic/technical calculations, technical drawing and a number of general subjects. The entrance requirement is the completion of lower-level middle school. In 1983, 3 440 schools of this type were attended by approx. 700 000 pupils who were taught in 206 different skills (1984: 628 000)[23].

All the individuals leaving the skilled worker training schools become workers. Upon completion of training, they enter the first or second grade of the eight grade wage scale but can quickly reach the third wage grade. Within the hierarchy, they should occupy the middle positions (grades 4 to 6 of the wage scale) whilst the lower positions are reserved for workers who are given familiarization training on the job or undergo an apprenticeship covering, in most cases, three years. (cf. chapter 8 2.2).

In the past, it was very difficult to advance to the higher levels of the eight grade wage scale. In most cases the person concerned had to have been with the firm for many years, and any advance was not subject to any objective qualification standards. At present, a number of changes are occurring in this field, but it is difficult to tell what direction these developments are taking.

Skilled worker training schools exist both within firms, which, in turn, are governed by various sectorial administrations (or firms), or as independent schools under the responsibility of the employment authorities. The majority of pupils attend those schools which are to be found in the firms. The schools of the employment authorities would seem to have a model function. Normally they are better equipped than the schools in the various firms.

As these schools do not, however, directly belong to a sectorial administration, the school-leavers have no entitlement to employment in a work unit. In view of the high training standards of these schools, it does not, however, seem to be difficult, as a rule, for school-leavers to find jobs. A proportion of the school-

leavers are required by research institutes for their workshops and laboratories. It is common practice for school-leavers with good results to "stay on at school" (liu xiao 留校) upon completion of training, where they are employed as teachers.

The schools which come under the employment authorities also serve these authorities as experimental units for training courses and teacher training, and as a model for the "training of trainers". The college for vocational pedagogics in Tianjin is cooperating with the ILO (International Labour Organisation, International Labour Office, Geneva and Vienna) in the field of the continuing training of teachers. This cooperation involves counselling and investment aids (Tianjin zhiye jishu peixun xueyuan 天津职业技术培训学院).

Problems :

- So far, written documents and drawings for practical instruction in the form of "basic training courses" are an exception.

- There would appear to be a tendency also for the skilled worker training schools in the firms to be detached from the production process, thus losing their advantage of being close to a practical work situation.

- There appear to be difficulties in aligning the number of specialist/technical subjects and pupils to the actual needs of the relevant work units.

2.1.4 The role of the school factories

The school factories (xiaoban gongchang 校办工厂) have remained an important characteristic of the Chinese school system. The

concept of the school factory dates back before the establishment of the People's Republic of China, when the schools, owing to the lack of State subsidies and State control (Japanese occupation, civil war), had to find ways and means of financing themselves. From the very beginning, financial considerations were linked with socio-political objectives. One intention was, with the aid of school factories, to keep school costs as low as possible or to cover them completely. However, school factories were also seen as a means of creating a new type of worker/peasant intellectual who would not become detached from his or her class.

During the period of the "Great Leap Forward" (1958/59), school factories were used to link education with productive work. Accordingly, these schools were able to set up factories and workshops, and, vice versa, the public administrations, factories, mining industries and agricultural cooperatives were allowed to set up schools.

With the Cultural Revolution (1966-1969), the school factories were given a new role - that of preventing the intellectuals from becoming a new bourgeoisie. Accordingly, school and university education was closely linked with practical needs. Pupils were taught how to manufacture useful products, and, in many cases, this production process formed part of the "State Plan". Consequently, the school factories acted as producers/ suppliers, making use, for the main part, of craft skills and techniques. In the school factories of the technical colleges, prototypes of complex machines and appliances were designed and manufactured.

Even to-day, many schools and universities have their own school factories. However, their production programme is not always linked with the training syllabus. The school factories of the universities offer students of scientific and technical subjects an opportunity for work experience. Another aspect which should not be overlooked is the financial contribution of these school factories : From the profits, laboratory and workshop equipment

can be purchased and the extension or construction of training premises can be financed. There are, however, cases in which this money is used to provide accommodation for the teachers, and others where a part of the money is distributed amongst the staff as a bonus.

2.2 Apprenticeships

Although in official documents and statements little mention is made of vocational training in the form of apprenticeships, it is by no means insignificant from the quantitative point of view. In 1983, there were an estimated 2 million apprentices in industry, the construction and transport sectors - not counting the commercial and service sectors. In addition, 960 000 individuals took part in short-term training measures (cf. chapter B 2.3). In comparison, only approx. 700 000 pupils attended the skilled worker training schools in the same year.[24)]

For many professions, an apprenticeship or short-term training course is the only form of training, whilst the skilled worker training schools provide training for only a small number of more specialized occupations (fitter/mechanic, turner, electrician). According to information supplied by the Ministry of Labour and Personnel in Peking, the skilled worker training schools provide training for 206 different occupations, most of them in the metal-working and electrical sectors. Apprenticeship training covers approx. 900 different occupations and activities.

In China, apprenticeships do not take form of the "dual system". Although in some firms, apprenticeship contracts are signed, the contracting parties are not the firm and the apprentice but the "master craftsman" (shifu 师傅) - in most cases an older, highly experienced worker - and the apprentice (xuetu 学徒). However, the training content is not stipulated in the contract. Instead,

reference is made mainly to moral commitments : for the master craftsman, this concerns the obligation to pass on his knowledge to the apprentice, and for the apprentice, it is the commitment to obey the master craftsman and to learn.

As a rule, practical training is limited to a familiarization with all activities connected with a single work place. Both the master craftsman and the apprentice participate in the production process, the master craftsman receiving a bonus for the additional task of instructing the apprentice. The latter receives a grant which is smaller than the wage in wage grade 1 for workers.

In a number of large firms, practical training is supplemented by theoretical instruction, e.g. in technical drawing and arithmetic. This instruction is normally given by members of the technical staff. There are no fixed standards both as regards syllabus and teaching materials.

A sector in which apprenticeships have traditionally played an important role, and which has, assumedly, not been entirely lost to the present day, is that of the crafts. At this point, it should be recalled that, to the present day, China is essentially an agricultural country (80% of the population live in rural areas), and that the modern sector (industry, modern transport system, etc.) provides employment for only a small proportion of the population. There is thus a great gap between agriculture and industry, which, theoretically, can be filled by the crafts and small industries.

As late as the '50s, the crafts played a by no means insignificant role in the overall economy and, by tradition, were organized in private firms. However, in the following period these lost

ground. It is certain that many of these craft firms had apprentices, and in the course of the current economic reform policy, a large number of craft firms have re-emerged. Whilst the relevant knowledge and skills exist, these are passed on in the true Chinese tradition within the family. The son is "apprentice" to the father although this relationship is not formally considered to be an apprenticeship.

It is here that a great training potential is to be found, in which, in the opinion of the authors, there is considerable room for development. The difficulties experienced by many collectives which have been set up by, or together with, unemployed young people or school-leavers are frequently the result of a lack of technical knowledge and skills; both, however, are still to be found in the former craftsmen's families. In southern China and in the rural regions of other provinces, it would appear that the crafts have, to some extent, continued to exist throughout the '50s up to the present day in the form of private family enterprises.

It would not, therefore, seem unfeasible to adopt the existing forms as a basis, and to make use of existing knowledge, experience and potential on a larger scale. (cf. recommendation 12, p. 98).

Problems:

- Apprenticeship training in its present form cannot be considered as an organized form of training.
- Apprenticeship contracts - if concluded at all - do not specify the training content and objectives.
- Although this form of craft apprenticeship may provide an adequate vocational qualification, this is not necessarily the case in industry. As job rotation is an unknown feature and as there is also a lack of apprentice workshops, training is limited to a small number of specific skills.

- With some exceptions, no provision is made for theoretical instruction.

2.3 Short training courses for school-leavers and the unemployed

Short courses (duanqi peixun 短期培训) are available, above all in the cities where they are, for the main part, organized by "labour-service companies" (laodong fuwu gongsi 劳动服务公司). They appear in various forms :

- the learning of practical skills "on-the-job";
- theoretical courses in vocational training centres (zhiye peixun zhongxin 职业培训中心) and in firms (familiarization training), which, in some cases, serves as a preparatory stage for an apprenticeship;
- theoretical and practical courses in vocational training centres run by the labour authorities. Frequently, these courses are organized by the "labour-service companies" which fall under the responsibility of the labour authorities.

(cf. recommendation 14, p. 100)

2.4 Training in technical colleges and universities

Consideration has only been given to post-secondary education institutions to the extent that they train qualified personnel for firms and schools, i.e. engineers, teachers, etc. Normal university research and instruction were not taken into account. The following describes some of the structural features of the Chinese technical colleges and universities.

Some technical colleges and universities come under the responsibility of the Ministry of Education and the higher education authorities of the provinces and municipalities. Others are governed by the sector administrations of the relevant ministries established for the various sectors of industry, the health service, the financial sector, commerce, agriculture, etc.

This plurality of competencies is one of the reasons for the great number of higher education institutions. In a number of cities, there are more than 10 to 20 different universities and technical colleges (in Peking there are over 50 and in Shanghai more than 30), the number of students ranging from several hundred to 10 000 but, in most cases, little more than 1 000.[25)]

Matriculation both for universities and technical colleges is by national university entrance examination, a lower number of marks being required for technical colleges than for the universities. University studies last four years and studies at technical colleges three years. The university degree corresponds to a BA. At present, the universities have only a limited number of post-graduate students (yanjiu sheng 研究生) who are working towards the higher degrees of MA and doctorate[26)]. This situation is expected to change, however, in the near future. The reason is that in the recent past, academic degrees have been regaining significance as a result of the fact that the classification of teachers and researchers has been made subject to their scientific qualifications.

Teaching staff at the universities and technical colleges are classified as follows :

- Professor (jiaoshou 教授)
- Associated professor (fu jiaoshou 副教授)
- Lecturer (jiangshi 讲师)
- Assistant (zhujiao 助教)[27)]

It is the will of the political leaders that the technical colleges and universities should undergo rapid expansion, in order, as far as possible, to cover the urgent need in the current reform phase for well trained academics with up-to-date knowledge.

It would appear that the former constraints - for example the obligation for student to live in - are being relaxed. There are, however, still a number of obstacles which can only be overcome medium-term :

- So far, it is not normal for students whose parents do not live at the place of study, to rent private accommodation.
- Public transport is already overburdened in most cities.
- From the Chinese point of view, there are ideological and educational reasons which speak in favour of maintaining the ties to the campus.

Recently, there have been a number of new developments in the technical college sector. Whilst in the past, the universities and technical colleges almost always came under the responsibility of different ministries and their subordinate sector administrations, new technical colleges are now being opened which, at municipal level, accept students who, by a narrow margin, had failed the national university entrance examination.

New regulations apply to this new type of technical college :

- A subscription is levied.
- An "allocation" (fenpei 分配), i.e. the allocation to a work unit, is no longer guaranteed.
- No accommodation is made available, i.e. the students continue to live with their parents.

Included in this new type of technical college are the new

short-term vocational colleges (duanqi zhiye daxue 短期职业大学) of which there are 17 in the whole of China and which have been selected for a development programme with the aid of the World Bank. Whilst the period of study at a technical college is normally three years, a number of these institutions offer a course of studies of one to two years. These are predominently in technical and economic subjects.

The task of the short-term vocational colleges is to provide practical and appliable qualifications above skilled worker level and below engineer level. This is referred to as the "post-secondary vocational and technical education level" (gaodeng zhiye jiaoyu 高等职业教育)[28)]

There have recently been efforts to upgrade existing vocational and technical middle schools to form technical colleges. In some cases, however, this does not apply to the whole institution; the aim is to allow those school-leavers with good results to continue learning and to achieve a higher qualification without having to pass through the lengthy process offered by the adult education system. The "middle-level vocational training centre" in Suzhou, and the technical school for electro-mechanical engineering in the industrial suburb of Shanghai, Minhang (Suzhou shi zhongdeng zhiye jiaoyu zhongxin 苏州市中等职业教育中心 , Shanghai jidian zhizao xuexiao 上海机电制造学校) are examples.

In order to qualify for these institutions, it is necessary only to have completed lower-middle school.

- Those students attending a vocational middle school, after completing the normal three-year training period, continue for a further year in order to obtain the technical school qualification, which is followed by another year leading to a technical college "degree".

- Students attending a technical school, after completing the normal four-year training period, continue for a further year in order to obtain the technical college degree. So far, little experience has been gained with this type of "build up" so that a general appraisal is not as yet possible.

Problems :

- For universities and technical colleges - at least those belonging to the individual sector administrations - there is still the structural problem of being limited to a specific sector. Often the units are too small and the teaching staff and the premises are not put to full use. Furthermore, the individual subjects are split up so finely that it is difficult to place a former student in a work unit matching the qualifications obtained.

- As a consequence of the tendency to "upgrade" technical schools into technical colleges, there is a further distortion of the already unfavourable relationship between the numbers of medium- and top-level staff in the employment system. It will not be possible to compensate for the general lack of qualified middle-level staff, i.e. skilled workers, master craftsmen, technicians, trainers. This upgrading process undermines the function of the technical school and it is at the workplace that the displacement process from higher to lower levels, also found in other countries, takes place.

3 Adult education

3.1 Adult education in rural areas

Adult education in rural areas is still concentrated on programmes to overcome illiteracy and in "spare-time" schools at primary school, and to a certain extent, lower-middle school levels. At the next higher level, that of the upper-middle school, there are a number of agricultural/technical schools for adults[29]. It is intended that for the main part, young farmers should benefit from the limited opportunities to acquire vocational experience and knowledge, as it is hoped that this group will quickly put into practice what they have learned.

Problems:

- Despite the great demand, which is still increasing following the rise in "side-line" production in the agricultural sector in the so-called "specialized households" (zhuanye hu 专业户), accounting for 14-17% of the farming households[30], there are still very few schools of this type in China. Adult education measures mostly aim at improving the general standard of education, whilst vocational qualifications still play a minor role.

- On the other hand, as a result of the relatively dense network of agricultural experimental stations reaching down to district and communal levels, there exists a considerable skill potential which, given the appropriate form, could be used for teaching purposes. In a pilot project of the FAO (Food and Agriculture Organisation of the United Nations, Rome) in Wuxian, Province of Jiangsu, and Shuangliu, Province of Sichuan, this combination of existing resources is being tested. This means, however, that such projects are still the exception. (Jiangsu Wuxian, Sichuan Shuangliu nongye tuiguang zhongxin 江苏吴县、四川双流农业推广中心).

3.2 Adult education in the sectors and enterprises

Large scale education programmes are conducted in the firms on the basis of centrally planned specifications. However it is difficult to assess the results. The programme with the largest number of participants is that known as "shuang bu 双补 " ("dual supplementary programme") which is available to all young industrial and clerical workers who entered working life between 1968 and 1980.

This programme was scheduled for conclusion at the end of 1984 or in the course of 1985. The aim of this programme was to raise the general standard of education of this population group to the level of those leaving lower-middle school and in some cases upper-middle school. It was also designed to improve technical knowledge [31)]. The second part of the "dual supplementary programme" seems so far to have been of secondary significance. During the study visit, it was rarely possible to obtain clear information with regard to the technical content of the programme.

Whilst the "dual supplementary programme" is oriented to the objectives formulated by the State Council of the People's Republic of China to be fulfilled by the responsible sectorial administrations, the objectives and directives applicable to engineers are established centrally (by the individual ministries). Engineers must have obtained a technical college degree and have a knowledge of two foreign languages.

These specifications are one reason for the high number of participants at the various adult education institutions at technical college level. For many engineers and technicians this is also an opportunity to update the knowledge they acquired years before.

A whole range of education measures are available to members of the staff between these two levels; technical college level on the one hand and "dual supplementary programmes" on the other. Again, emphasis is not on the acquisition of an additional vocational qualification, the verification of a former general educational qualification or an additional qualification. Nevertheless, this could provide the basis for additional vocational training in the form of updating or career development training.

Although the Ministry of Labour and the sectorial administrations require that the workers be graded in the enterprises according to objective qualification criteria, it would seem that no general standards exist. In a number of major firms however, a new education programme has been introduced. This provides preparatory courses for the grading examinations for wage groups 4 to 6. This programme is intended to replace the "dual supplementary programme" in the course of 1985.

It is possible that, with the introduction of the "self-responsibility system" in industry, the wage and qualifications structures in then relatively independent commercial firms become a matter of greater interest to the management and administration. Company qualification measures will then appear as a cost factor and, accordingly, in-company training programmes could have a noticeable impact on the results of the company activities.

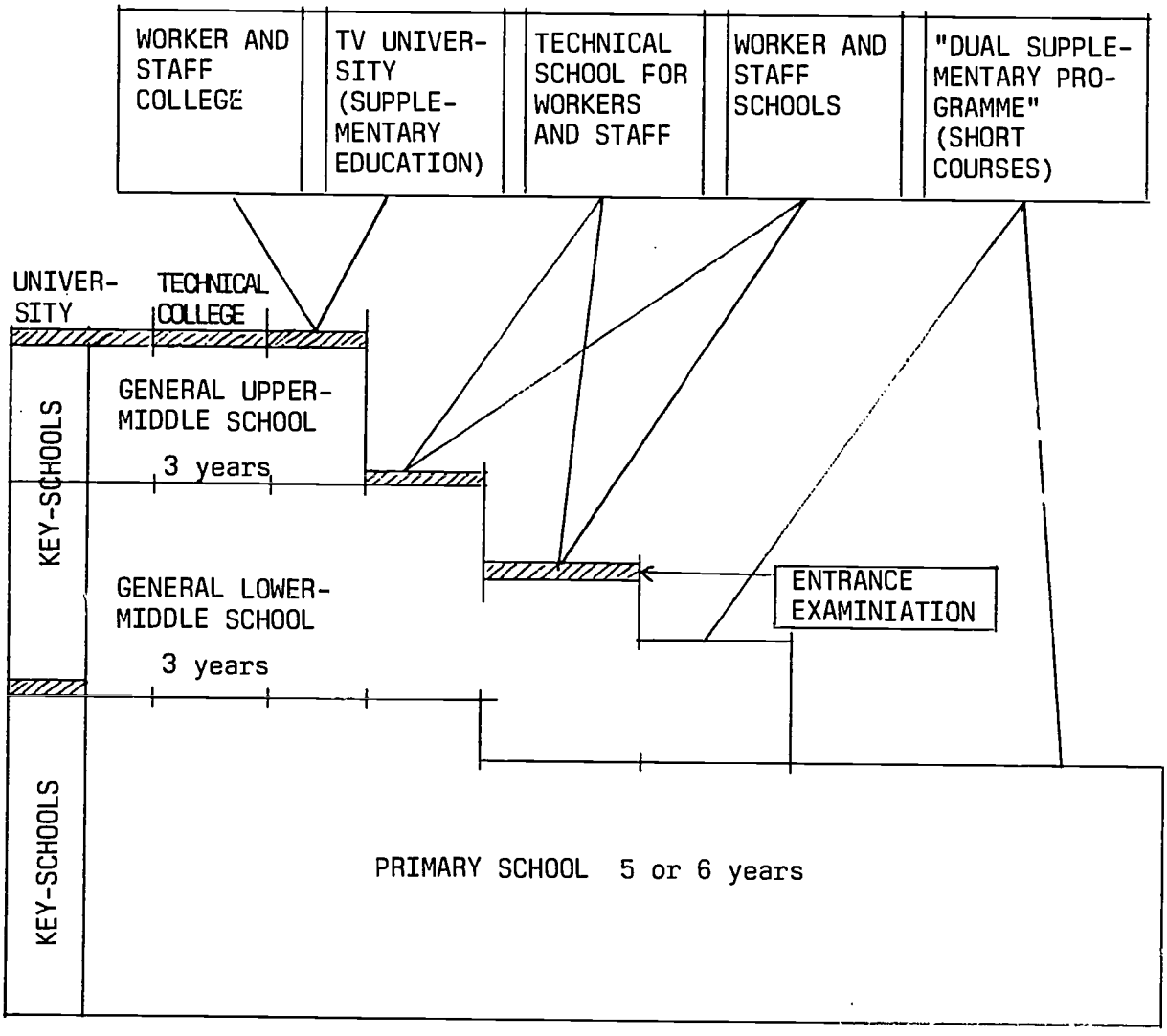
During the study visits, it was not possible to identify any education or training provision for foremen, master craftsmen, instructors and technicians, although this does not mean that it is non-existent. However, there would appear to be a lack of clear concepts in this area, The establishment of "vocational colleges" and "short-term vocational colleges" (cf.p.61 f), which have been given the task of producing qualified workers above skilled worker level and below engineer level, shows that this deficiency has been recognized. The question remains,

however, whether this choice - so removed from reality is the best one.

Problem :

Adult education within the sectors takes on the tasks of the normal vocational colleges and technical schools where these do not have sufficient capacities to meet the objectives of the competent ministries. As a result, however, insufficient attention is being given to adult vocational training, which could benefit both from the close link between the training institutions and conditions in practice, and the vocational experience of the teaching staff.

ADULT EDUCATION WITHIN THE SECTORS AND ENTERPRISES



3.3 Adult education outside the sectors and enterprises

Outside the enterprises, adult education is catered for by the local school authorities. For this purpose, they run spare-time schools (mostly at middle-school level) and spare-time colleges (with the status of technical colleges), which, in many cases, are run jointly with interested enterprises.

In this context, the television universities are of great significance, both with regard to the number of participants and the development prospects. The Central Radio and Television University (zhongyang guangbo dianshi daxue中央广播电视大学 in Peking, and the provincial television universities (1983: 28; 1984: 29) offer study courses at technical college and university level. In addition, their programme covers a whole range of individual courses. In 1983, a total of 478 000 took part in the television university courses, including 414 000 in a regular full course of studies. In 1984, there were 599 100 full course students. [32)]

A feature of the television universities is that with relatively expensive programmes, a great number of participants can be reached, so that the costs per head are low. It is to be expected that the television universities in China will continue to play an important role even when the general education system has reached a higher level of development, and that it will not only serve as a transitional solution at those times when there is a shortage of provision. As an indicator, transmitter stations and production centres are being set up at key locations as part of the World Bank project.

In China, favourable conditions exist for the television universities : in the firm, the participants generally watch the television programmes in groups, and there they are given supplementary training based on the TV programme.

But also those workers who cannot be relieved of their duties entirely can watch the television programme during working hours, and at least part of the supplementary training takes place in working hours. As Chinese firms are normally well equipped with staff, there are relatively few bottle-necks in the production process.

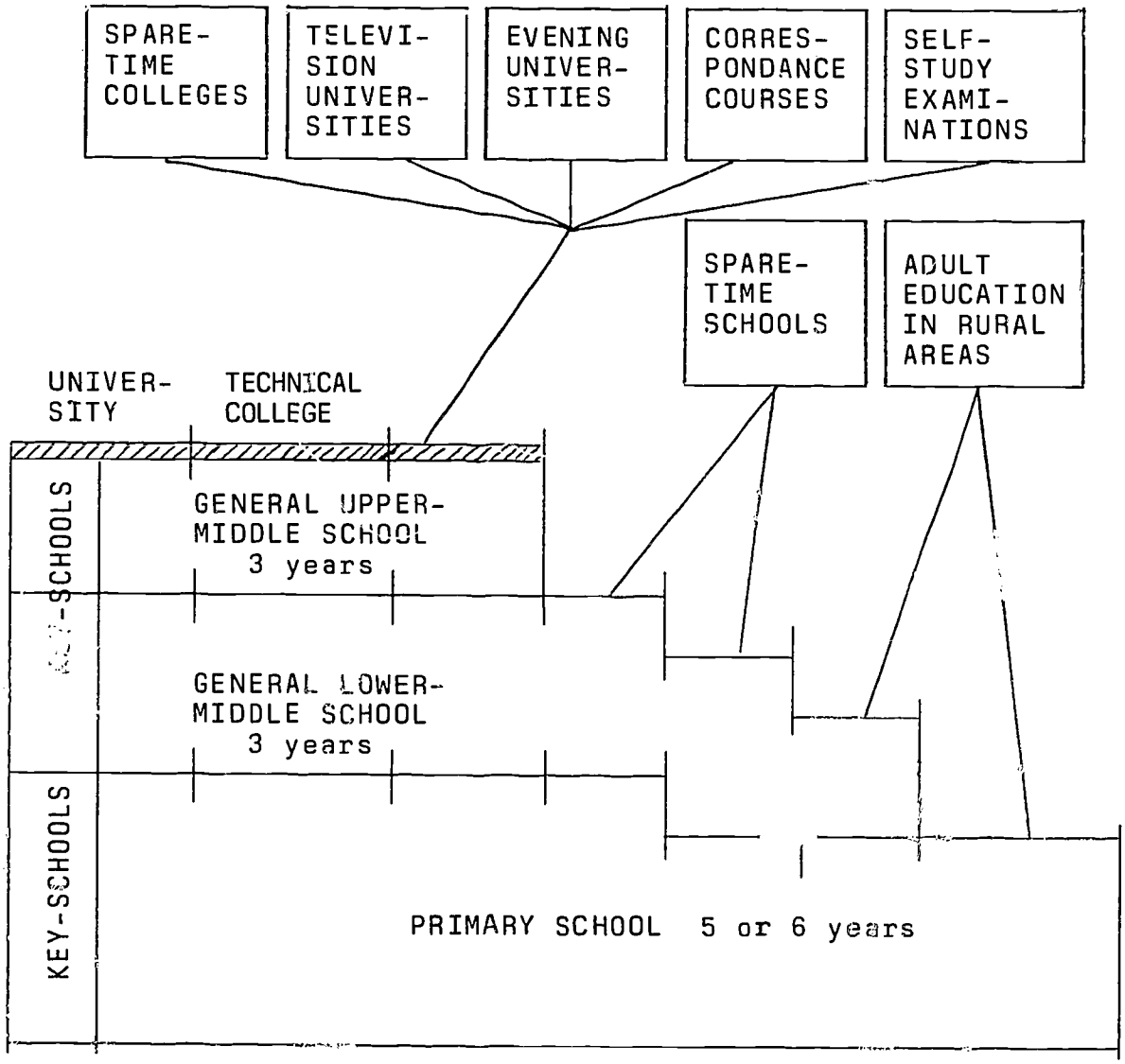
So far, evening and correspondence courses (with 272 600 participants in 1983 and 319 100 in 1984) [33], are of less significance. These courses are provided by the normal universities but also include the courses of scientific, technical and other institutions. Chinese researchers have calculated that these courses are extremely cost-effective - assuming that the basic resources of the regular universities concerned are not included : the universities make available teachers and instructors for a small additional fee, provide laboratory facilities at favourable rates or free of charge and offer accommodation in student hostels to those correspondence course students in those periods when attendance is required.
The training standards can be maintained,as regular teachers and instructors and standard books and other texts are employed for the courses.

With the introduction of examinations in "self-study courses" (zixue kaoshi 自学考试) students are given the additional possibility of revalidating existing qualifications and acquiring new ones.

By studying at adult education institutions, those technicians and engineers, teachers and doctors who, although working in these professions, are still clasified as workers, can acquire formal recognition of their theoretical and practical qualifications,on the basis of which they can join the wage group for the cadres. Others, whose former education certificates are no longer recognized (above all those obtained in the early and mid-seventies), have the chance of obtaining a normal,

accepted education certificate. Participation in adult education study programmes enables them to update their knowledge and participate in the modernization of existing plant facilities and the introduction of new technologies.

ADULT EDUCATION OUTSIDE THE SECTORS AND ENTERPRISES



Problems :

- As various providers run their own adult education institutions, we again find, as in the case of the sectorial technical colleges,that the schools and universities are small and cost-intensive and that existing capacities cannot be made full use of.

- The tendency to upgrade courses - a feature of the general education system - is also to be found in adult education, although there is only limited provision at the middle-level of the qualification hierarchy.

4. Teaching staff in the vocational education sector

The following types of teacher/instructor are employed in vocational training :

- for courses in general education, basic vocational and specialized vocational subjects: teachers of theory (lilun jiaoshi 理论教师)
- for practical instruction : teachers of practical subjects (shixi jiaoshi 实习教师) and "master craftsmen" (shifu 师傅).

The minimum requirement for theory teachers in vocational training schools is a technical college certificate. Teachers of general education subjects have the highest qualification level. Many of these teachers have completed normal university studies. The situation is much less favourable for teachers of theory in technical subjects. Although staff is available to a certain extent for the basic natural science subjects, there is a clear lack of teachers in those subjects for which professional

experience and a knowledge of complicated and modern technologies is essential. This is also an indicator of the predominence of the natural sciences at universities and technical colleges.

For the teachers in practical subjects, the situation is marked by a lack of uniformity. Practical instruction is given by both graduates from technical colleges and by workers who have not, however, been prepared for this task.

With the exception of three universities (Tianjin, Changchun, in the Province of Jilin, and in Changzhou in the Province of Jiangsu) no provision is made for the training of teachers for vocational training. Accordingly, far too few teachers are being trained specifically for vocational training schools. Initial and continuing teacher training are institutionally separated : initial training takes place at teacher training colleges and universities. There are two teacher training universities : one in Peking and one in Shanghai. The continuing training of teachers is the task of special continuing training universities for teachers (jiaoshi jinxiu xueyuan, jiaoyu xueyuan 教育进修学院, 教育学院).

Problems :

- No specifications exist either for theory teachers, teachers of practical subjects or "master craftsmen" with regard to their pedagogical aptitude.

- Apart from instructions issued by the Ministry of Labour and Personnel to the effect that trainers must have reached at least the fourth grade in the eight grade wage-scale, there are no standards to be met by the teachers of practical subjects and the "master craftsmen", and even this requirement is rarely met.

- To date, practical instruction is rarely based on a vocational training syllabus. Material for basic training courses would

seem to exist in pilot schools for technical workers run by the labour authorities (seen in the second technical school for technical workers of the labour authorities in Shanghai). There is also a marked lack of training ordinances and occupational profiles on which training can be based.

- In many cases, the teachers in practical subjects are those who upon completing their education in vocational training schools stayed on at school (liu xiao 留校), and, accordingly, have no practical work experience. The reason for this system lies in the fact that the schools are able to obtain qualified school-leavers for their teaching staff, particularly as it is difficult to attract suitable specialists from the firms to become teachers.

- The teachers of theoretical subjects are only required to teach for a limited number of hours, as is the general custom for teachers in China. The consequences are felt particularly in those areas where few specialists are available anyway, i.e. in subjects involving technical theory and in specialized vocational subjects.

5. Competencies and forms of cooperation

As is the case in many other countries, vocational training and adult education are not the responsibility of a single Ministry and its dependent authorities, for example the National Ministry of Education and its subordinate education authorities at provincial, municipal, district or community levels.

In rural areas, vocational training and adult education are primarily the responsibility of the education authorities and the agricultural administration authorities, with the exception

of State factories and mines in rural regions, which, together with the relevant education and training facilities fall under the authority of the respective sectorial administrations.

The school authorities come under the general education system and the local adult education institutions such as the "peasants' schools" (nongmin xuexiao 农民学校) at village and communal level. Many schools at this lowest level - apart from a small number of key-schools - are run by the villages and communes themselves ("run by the people" - min ban 民办).

The coordination of adult education in rural areas has been assigned to the committees for the training of workers and peasants (gongnong jiaoyu weiyuan hui 工农教育委员会). According to information supplied by the Ministry of Agriculture, the agricultural stations which in particular act as advisory bodies for the peasants, cooperate on a regular basis with the agricultural schools (nongye jishu xuexiao 农业技术学校) at 400 locations.

In the towns and cities, three different organizational structures bear the responsibility for vocational training and adult education :

- The Ministry of Education and the subordinate school and university authorities
- The Ministry of Labour, the subordinate labour authorities and the "Labour Service Companies" (laodong fuwu gongsi 劳动服务公司)
- The various industrial ministries, e.g. for mining, metallurgy, mechanical engineering, electrical industry, armaments, light industry, textiles, chemical industry, etc., the ministries for trade, finance, transport, health, etc., with their subordinate sectorial administrations and firms.

In the case of a number of universities and technical colleges, the technical schools and the skilled worker schools, a number of ministries and their subordinate administrations share the

institutional responsibility :

- In the case of the technical schools (zhong zhuan 中专) there is an institutional link between the school authorities and the respective sectorial administration (principle of "dual competency" - shuangchong lingdao 双重领导)
- In the case of the skilled worker training schools (jigong xuexiao 技工学校) an institutional link exists between the labour authorities and the respective sectorial administration (principle of "dual competency" as above) except the schools of the labour authorities.

Cooperation on a volontary basis exists for the vocational middle schools (zhiye zhongxue, zhiye gaozhong 职业中学 职业高中) which, with few exceptions, fall within the responsibility of the school authorities. For special disciplines, the latter call on interested sectorial administrations to cooperate wherever appropriate.

In the municipalities, the coordination of adult education is assigned to the worker and employee education committees (zhigong jiaoyu weiyuan hui 职工教育委员会) or the committees for the education of workers and peasants (gongnong jiaoyu weiyuan hui 工农教育委员会). Depending on the local circumstances, these are supervised either by the Economic Commission or the municipal government, or take the form of departments of the local school authorities. In some cases, the committees are responsible for all adult education institutions,whereas in others, competency is limited to only a certain number.

EDUCATION INSTITUTIONS AT SECONDARY SCHOOL LEVEL - COMPETENCIES

MINISTRY OF EDUCATION
SCHOOL AUTHORITIES AT PROVINCIAL, MUNICIPAL, DISTRICT, COMMUNAL LEVELS

教育部,教育厅(高教厅)
教育局(高教局)教育部门

MINISTRY OF LABOUR AND PERSONNEL 劳动人事部
LABOUR AUTHORITIES AT PROVINCIAL, MUNICIPAL, DISTRICT LEVELS 劳动部门 劳动局

"LABOUR SERVICE COMPANIES" 劳动服务公司

SECTORIAL MINISTRIES (BRANCHES) IN INDUSTRY, COMMERCE, FINANCE, HEALTH
SECTORIAL ADMINISTRATIONS AT PROCINCIAL, MUNICIPAL, DISTRICT LEVELS
ENTERPRISES

....部
业务部门
系统
公司
工厂

TECHNICAL SCHOOLS ("dual responsibility") 中专 中等专业学校		TECHNICAL SCHOOLS ("dual responsibility") 中专 中等专业学校
	SKILLED WORKER SCHOOLS ("dual responsibility") 技工学校	SKILLED WORKER SCHOOLS ("dual responsibility") 技工学校
VOCATIONAL MIDDLE SCHOOLS (cooperation with sectorial administrations and factories) 职业中学 职业高中		VOCATIONAL MIDDLE SCHOOLS (cooperation with school authorities) 职业中学 职业高中
	SHORT-TERM TRAINING ("Labour Service Companies") 短期培训	APPRENTICESHIPS (firms) 学徒培训
VOCATIONAL TRAINING CENTRES 职业培训中心	VOCATIONAL TRAINING CENTRES 职业培训中心	VOCATIONAL TRAINING CENTRES 职业培训中心
SPARE-TIME SCHOOLS 业余学校		WORKER AND EMPLOYEE SCHOOLS 职工学校

EDUCATION INSTITUTIONS AT UNIVERSITY AND TECHNICAL COLLEGE LEVEL - COMPETENCIES

MINISTRY OF EDUCATION SCHOOL AUTHORITIES AT PROVINCIAL, MUNICIPAL, DISTRICT, COMMUNAL LEVELS 教育部，教育厅（高教厅） 教育局（高教局）教育部门	MINISTRY OF LABOUR AND PERSONNEL LABOUR AUTHORITIES AT PROVINCIAL, MUNICIPAL, DISTRICT LEVELS "LABOUR SERVICE COMPANIES" 劳动人事部 劳动部门 劳动局 劳动服务公司	SECTORIAL MINISTRIES (BRANCHES) IN INDUSTRY, COMMERCE, FINANCE, HEALTH SECTORIAL ADMINISTRATIONS AT PROVINCIAL, MUNICIPAL, DISTRICT LEVELS ENTERPRISES ....部 业务部门 系统 公司 工厂
UNIVERSITIES 大学 TECHNICAL COLLEGES 专科学校		UNIVERSITIES 大学 TECHNICAL COLLEGES 专科学校
SPARE-TIME COLLEGES 业余大学		WORKER AND EMPLOYEE COLLEGES 职工大学
EVENING UNIVERSITY CORRESPONDENCE STUDIES 夜大学 函授教育	NO COMPETENCIES	
TELEVISION UNIVERSITIES 电大 a) CENTRAL RADIO AND TELEVISION UNIVERSITY b) PROVINCIAL TELEVISION UNIVERSITIES 中央广播电视大学 省、市办电视大学		TELEVISION UNIVERSITIES SUPPLEMENTARY COURSES 电视大学辅导站，辅导课
SELF-STUDY EXAMINATIONS 自学考试		

6. Financing

General education is financed by the Ministry of Education and the provincial and local school authorities. Many schools in rural areas are organized and financed by the collectives. At the most, they receive a subsidy from the State school authorities ("minban" schools - minban民办= "run by the people").

The three types of schools at secondary level are financed by the respective provider organizations :

- The vocational middle schools (zhiye zhongxue, zhiye gaozhong 职业中学, 职业高中) are financed by the school authorities, assuming that they fall under the competency of these authorities. When run on a cooperative basis, it is often the case that the cooperating partner - a sectorial administration or enterprise (unit) - provides the teachers/instructors and the mechanical equipment. Furthermore, the cooperating partner often makes regular contributions to cover overheads, whereby it would seem that the amount depends on the number of school-leavers "on order". The municipal financing authorities may also provide a non-recurrent subsidy whenever provision is made for a new discipline. If, however, a vocational middle school is set up by a sectorial administration or an enterprise (unit) under its own responsibility, these bodies finance the school themselves, the school authorities acting purely in a supervisory capacity.

- In the case of the skilled worker schools (jigong xuexiao 技工学校) financing is the responsibility of the enterprise (unit) or the sectorial administration to which they belong. However, those skilled worker schools which are run by the labour authorities are financed exclusively by the latter.

- The technical middle-schools (zhong zhuan 中专) are financed by the sector to which they belong. In this context the school and university authorities are also taken to be "sectors" for those middle schools at which primary school teachers are trained.

A similar organizational structure can be seen at university and technical college level : the Ministry of Education and the subordinate provincial and local university authorities only bear the costs of a small number of universities (offering courses in natural sciences and the humanities) and teacher training universities (where middle school teachers are trained), whilst the many specialized universities and technical colleges are financed by the responsible sectorial administrations, the respective training courses being oriented to the needs of these administrations.

In the field of adult education, it is the individual sectorial administrations (ministries, provincial and local sectorial administrations) which finance the education institutions within the sectors, e.g.
- worker and employee universities
- technical middle schools for workers and employees
- worker and employee schools

and the many other courses offered in this sector.

Local education institutions outside the sectors, i.e.
- spare-time universities and
- spare-time colleges

are financed by the respective school authorities, but also receive funds from the local municipal governments.

Television universities, evening universities and institutions offering correspondence studies are funded by the various providers or the sectorial administrations to which they belong.

The sectorial administrations and enterprises finance all the training activities in their field of responsibility, appropriate amounts being earmarked in their budget. Furthermore, the enterprises may invest part of their profits in educational activities. Concerning staff qualification structures, the ministries and their sectorial administrations set the objectives to be met by the individual units (e.g. number of university and technical college graduates and technical middle school-leavers as a percentage of the total staff). If these objectives cannot be met by their own education institutions, the task of training the required personnel is assigned to external institutions, in return for which a financial contribution is made.

Accordingly, the sectorial administrations have an important part to play in the financing of vocational training and adult education. For this reason, the school and university authorities governed by the Ministry of Education cannot claim to hold the lead in this field.

7. Characteristics of the Chinese employment system

In order to understand the problems in the relationship between education and employment, it is necessary to become familiar with some special features of the Chinese employment system.

a) The "unit" (danwei 单位)

The "unit" is the factory, administration, hospital, transport company, school or university in which the individual works, and often lives.

The unit, therefore, has the function of "employer", making provision for accommodation and social security (health insurance and old age pensions).

So far, the following rule applies to a large part of the urban population (but not the peasants) : if you join a unit, you join it for life. Any career development is limited almost exclusively to one's own unit. Mobility exists within one and the same unit and, in the case of the cadres, amongst units within the same sector.

Specific vocational qualifications appear to be of less significance for the position held by a worker than is the case in Europe. It is much more important to belong to a "good" or "bad", rich or poor unit. Here, parallels can be drawn with Japan.

b) "Allocation" (fenpei 分配)

The education system continues to be closely tied in with the employment system.

Individuals completing training courses are allocated to the work units according to the needs of the latter, so that for some training courses there exists what can be called a "job guarantee". This applies to the universities, technical colleges, technical middle schools and the skilled worker schools run by the enterprises.

c) "Replacement" (dingti 顶替)

Under certain circumstances, young job-seekers may take over the jobs of their parents when they retire. In such cases, the parents' unit arranges for any necessary vocational training at a skilled worker school or in the form of an apprenticeship.

d) "Cadre" (ganbu 干部), "Worker" (gongren工人)

In the Chinese employment system, there are basically three categories : the workers, the peasants and the cadres. In rural areas

the State administrations and other institutions such as the experimental farms are occupied by the cadres, whilst the peasants make up the majority of the rural population.
In the municipalities, posts in the State-owned enterprises, the collectives and other units are occupied by both workers and cadres.

Workers are normally employed for tasks involving physical labour; they occupy different grades in an eight grade wage-scale. Most are to be found in grades 2 and 3 at the lower end of the scale. When beginning working life, those who have completed an apprenticeship, vocational middle school or a short-term training course, are placed in the first grade of the wage-scale for workers; those coming from skilled worker schools are immediately "promoted" to at least the second grade of the wage-scale in view of their higher vocational qualifications.

According to the different qualifications, wage grades 1 to 3 are the categories for unskilled and semi-skilled workers, grades 4 to 6 for skilled workers and grades 7 and 8 for specially qualified workers with considerable work experience. In China such workers are often referred to respectfully as "Masters" (shifu, lao shifu 师傅, 老师傅), and here too, the term has its origin in the crafts.

In the People's Republic of China, the cadres not only have management functions or are members of the party system, but occupy almost all white-collar posts. The status of "cadre" is dependent upon the level of secondary education attained, i.e. all those completing technical middle schools, technical colleges and universities have in the past been allocated cadre posts regardless of their specific qualifications and the tasks they are required to fulfil in their jobs.

As a rule, university graduates are placed in grade 22 of the cadre scale. Technical college graduates join the next lower grade 23, whilst normally those leaving technical middle school are normally placed in grade 24. In the course of one's career, it is possible to move into higher grades, in which the salaries are higher and decision-making powers greater.

The term "employee" is not normally used in the People's Republic of China as a wage category. It does, however, occur in the term "worker and employee schools" and "worker and employee universities" for education and training institutions run by the sectors or enterprises catering for those already employed.[34] As in the case of university staff with the categories professor, associated professor, lecturer and assistant, a hierarchical structure exists for the engineers, translators and interpreters :

- The position of chief engineer and chief reviser corresponds to the level of professor.
- The positions of deputy chief engineer and deputy chief reviser correspond to the level of associated professor.
- Engineers, translators and interpreters are to be found in the same category as the lecturers.
- The assistant engineer, assistant translators and interpreters are equivalent to assistants.

These four functional categories are incorporated in the cadre hierarchy, with room for a certain degree of discretion in individual cases.

e) "Self-responsibility system" (zeren zhi 责任制)

In the course of the agricultural reforms in the 1980s, the rural collective has been organized in such a way that to-day almost every peasant household has a certain production function

for which it is fully responsible. After a trial period in rural areas, which according to the Chinese leadership is likely to be successful, this system will be applied to the municipalities and consequently to industry, trade, transport, services, etc. This means that the individual economic units will become more autonomous and have greater decision-making powers. Key industries such as mining and heavy industry, etc., are exceptions and these will continue to be governed by the central planning bodies [35].

f) "Specialized households" (zhuanye hu 专业户)

With the introduction of the self-responsibility system, there developed in rural areas, in addition to the majority of households which are mainly concerned with cereal production, the so-called "specialized households" and "key households", which are involved in chicken breeding, fish farming, fruit growing, pig breeding or transport. Whilst the "specialized households" concentrate on a single line of production, the "key households" are involved in a number of types of production, in some cases including arable farming. However, they only produce for the market in one line of production.

For the employment system, the specialized households are of importance to the extent that they have a need for skilled workers and, more recently, are entitled to employ school-leavers and university graduates, these being employed under contracts of limited duration.

g) "Temporary workers" (linshi gong 临时工)
"Contract workers" (hetong gong 合同工)
"Self-employment" (geti qiye 个体企业)

The introduction of the self-responsibility system in the municipalities will result in a more flexible employment system. Already there are various forms of employment for temporary workers who are taken on by a unit on a day-to-day basis, and for contract workers, who are employed for a period of several months, a year

or more.

The "temporary workers" so far represent the lowest class amongst the municipal population. They belong to the group of those who, whilst employed, do not belong to a certain unit, and therefore, do not have the benefit of the "guaranteed bowl of rice" (tie fanwan 铁饭碗) which includes health insurance and social security. The construction workers coming from rural areas also belong to this class.

"Contract workers" are employed in firms which have a fluctuating production volume as a result of export orders. They are also taken on by new firms which wish to experiment with the recruitment of temporary staff. In the special economic zones, this is the usual form of employment. During their period of employment, the "contract workers" enjoy the same rights as permanent staff. They are also entitled to terminate their contracts but their contracts may also be terminated by the firm.

"Self-employment" existed in the past although very few reports are available. This form of employment developed before many private firms were dissolved or merged into the collective in the late '50s and '60s. The individual workers are entirely self-reliant and work as traders, craftsmen or entertainers (on the market place).

Problems :

- Rigidity of the employment system : As the sectors tend to cater solely for their own needs and have learned to expect little or no external support, they carry out their own training, as much as they can but only as much as they need. This means that there are too many small technical schools and worker and employee universities in which the teaching staff are not fully occupied and are often inadequately qualified.

In different sectors, parallel courses are offered for the same subject matter; there are too few people in the individual classes; the sectorial administrations and enterprises "hoard" qualified staff which could be put to (more) effective use elsewhere.

- Lack of mobility : Once employed, the workers seldom leave the work unit. Lifelong job security, referred to by the Chinese as tie fanwan 铁饭碗 (the guaranteed bowl of rice) offers little motivation for work. As the "distribution" of jobs by the State is controlled from above, and the personal wishes of the school-leavers and university graduates bear little weight, the workers often find themselves in jobs which do not correspond to their aspirations. As the workers have to be paid anyway, whether they make an effort or not, there is a tendency for everyone to do just as much or as little as one's neighbour, in order not to stand out in the crowd.

- Overburdening of the units : A unit which has to cater for everything is a State within the State. The management and economic resources are burdened with a multitude of tasks which have nothing to do with the production or training task of the unit ("all eat out of the same big pot" - chi da guo fan 吃大锅饭).

Over the last few years, a number of steps have been taken to make the employment system more flexible. However, the solution of structural problems requires a fundamental change in the normal method of transition from the education system into working life. For the education system, this means that in future it will be required to qualify people for jobs and skills and not for a specific educational level. Knowledge obtained through training must be usable and "transferable".

C. RECOMMENDATIONS

Recommendation 1 : Development of vocational training
Basic recommendation

In China, as in many other countries, emphasis is traditionally placed on general education. Higher education schools offering general education subjects are given priority treatment and the status to be achieved through a university education is much sought after. In the Chinese tradition, characterized by Confucian educational ideals, vocational training plays a subordinate role.

If China is to leave the stage of relative poverty, it must carry out structural reforms and modernize its production system. In the late '70s, the People's Republic of China took a step in this direction with its political programme of the "4 modernizations" (industry, agriculture, science and technology, defence).

Apart from the purely technical aspect, the modernization of agriculture and industry also has implications with regard to qualifications. With the introduction of advanced technology, it is intended to catch up on international developments. This will not be possible, however, unless the rural and urban population acquires a level of education permitting them to absorb and apply new knowledge, particularly as the People's Republic of China aims to compete successfully on the world market.

At the same time, consideration must be given to the fact that the great number of people who are either unqualified or are not properly qualified for their work represent a great burden for the national economy. In order to achieve the set objectives but also to limit current risks, priority must be given to the quantitative and qualitative development of vocational training. This also means that for a foreseeable period a greater amount

must be invested in this field.

The present education system and qualification structure are marked by a lack of proportion between the upper and middle levels (upper level : university and technical college graduates = engineers, doctors, teachers, etc. - middle level : those leaving technical school and those qualified in continuing education programmes = technicians, "Masters", "instructors", accountants and office staff), the upper level being predominant. Workers in the lower level do not have sufficient vocational qualification to be able to play an active role in the modernization process.

At present, there is a tendency for many people at the middle level to move up into the upper level. Inversely, despite their qualifications, many people in the upper level find themselves charged with middle level functions (i.e. engineers working as technicians, teachers as instructors, etc.). Although this may be an acceptable situation for those countries with a high percentage of university graduates, this is not the case for present day China.

In the current development phase, China requires a high potential of skilled workers in agriculture and in other sectors of the economy in rural areas and a similar potential in industry and trade, transport and the service sector in urban areas. The training of skilled workers and employees at lower level must be developed and restructured. Middle-level workers must be recruited from the lower level after undergoing further education and training or alternatively be trained in special technical schools.

In the field of adult education, it is necessary, medium-term, to shift the emphasis from general to vocational adult education. In turn, this requires the further development of general and vocational education institutions for children and young people.

The adult education system can then concentrate on the qualification of skilled workers for the middle level, such as master craftsmen, instructors, technicians, etc.

Recommendation 2 : "Committee(s) for vocational training and adult education"
"Office for vocational training and adult education under the State Council of the People's Republic of China"

Any observer of the Chinese education system will see that the classical academic education stream from kindergarten through primary and secondary schools to the technical colleges and universities is organized in a relatively clear way, whilst those streams more closely linked with the employment system, i.e. vocational education and adult education courses are characterized by a multiplicity of competencies. This is also the case in many other countries - not least in the Federal Republic of Germany. This does not mean that it is in every way negative, as the many providers share the various burdens and are able to offer initial and continuing training for their own specific needs.

Nevertheless, for a large country such as China, with its overall limited resources, it would be advisable to coordinate its efforts and, in the case of new investments, to concentrate on strategic points. In order to regulate the system and take selective action, a coordination body should be set up by the State Council of the People's Republic of China (government) and not only at ministerial level or by other subordinate central administrations. This could take the form of a "national committee for vocational training and adult education" similar

to the existing "National Committee for Worker and Employee Education" which is, however, governed by the State Economic Commission.

Day-to-day work should be carried out by a "bureau for vocational training and adult education of the State Council of the People's Republic of China" or a similar institution.

The various ministries currently responsible for initial vocational training, but which work independently of each other, i.e. the Education Ministry, Ministry of Labour and Personnel, the Ministry of Agriculture and the various ministries for industry, trade, transport, health (e.g. ministries responsible for mechanical engineering, electrical industry, textile industry, light industry, trade, transport, health, etc.) should be represented on the committee by appropriate decision-makers and experts. This also applies to those bodies responsible for adult education.
In many cases, the same institutions are involved, including those institutions represented on the National Committee for Worker and Employee Education (zhongguo quanguo zhigong jiaoyu weiyuan hui 中国全国职工教育委员会) such as the Trade Union Federation, the Communist Youth Association, the National Association of Women, etc.

The committee should submit proposals and draft decisions to the State Council who, in turn, would forward them to the different ministries and other central administrations for implementation. The committee should be empowered to set up mixed commissions made up of representatives of the respective ministries and other administrations and to carry out "on-the-spot" investigations. The committee should be able to draw on the advice of one or more research institutions (Central Institute for Educational Research under the Ministry of Education - zhongyang jiaoyu yanjiusuo 中央教育研究所), and suitable university research institutes.

Committees with the same composition should also be set up at provincial, municipal or district levels as it is at these levels that many decisions are taken and funds distributed.

In such large countries as China, cooperation is often much easier at regional and local levels than under a central administrative organization.

Recommendation 3 : Legislation

At present, China is preparing a number of legislative acts through which the role of education within the society is to be reformulated and strengthened. These include a "basic law on education", a law governing general compulsory schooling, a law on the financing of education, a teacher training law and a "law on the protection of schools" [36].

In the field of vocational training and adult education, any legislation should contain provisions concerning the organization, compentencies, financing, control, cooperation, examinations, vocational training contracts, objectives and content of vocational training, etc.

Vocational training should be controlled by competent supervisory bodies which, at local level, are made up of representatives of the school authorities, labour authorities and various sectorial administrations. They should be responsible for the recognition of firms and schools as vocational training establishments. If the training facilities (in certain firms) are inadequate, individual training elements should be detached and assigned to the vocational training centres (c.f. recommendation 14, p.100).

Recommendation 4 : Discontinuation of the allocation system "Allocation" - fenpei 分配)

The training courses at secondary school level, including apprenticeships (c.f. recommendation 12, p.98), like the technical colleges and universities, should be gradually withdrawn from the automatic system of "allocating" school-leavers and graduates to the various work units. On the one hand, school-leavers and graduates should be able to choose their place of work according to their qualifications and interests, and on the other, the firms (units) should have the possibility of giving priority consideration to aptitudes and abilities when recruiting.

In future, the managements of the enterprises will, in any case, be given - and use - greater powers to dismiss staff. Also, more firms will be completely shut down and the employees will have to be retrained - if possible on the basis of a broader and more general vocational qualification.

However, institutional safeguards will be necessary. These could take the form of a social security system financed from State funds and by the employing firms. This means that a claim to an old age pension will be detached from an affiliation to a specific unit and that entitlements can be transferred.

Recommendation 5 : Definition of occupations, grading of qualifications

The strict classification within the worker and cadre hierarchies, which in the past has been based on formal and rigid standards, should gradually be made more flexible. The transfer from the worker to cadre status should also depend on qualification and functional criteria Accordingly, highly qualified workers could become cadres, e.g. through a master craftsman examination (c.f. recommendation 17, p.105). The decisive criterion should be the person's practical professional aptitude and not general education qualifications.

A system of regulation based primarily on general, quantitative planning figures should be avoided. It is necessary to differentiate the current and expected future qualification needs more clearly than in the past, i.e. within the individual units, departments and jobs. The aim should be to move from exclusively formal qualifications to concrete, practical qualifications. Vocational training should become less theoretical and more practical.

The sectorial administrations should propose definitions for occupations and occupational groups and these should be agreed upon at the level of the "national committee" with the participation of the Ministry of Labour and Personnel. Occupations and occupational groups should be equivalent across the various sectors. The training for electricians, for example, should not be sector-oriented (mechanical engineering, electrical industry, light industry, textile industry, etc.), but should be standard. At the same time, this would facilitate a move from to unit or sector to sector.

Qualified workers with management/supervisory functions should,

as long as the worker and cadre hierarchies are separated, be given the status of cadres. In a transition phase, the wage grades 1 to 3 should apply to "lower-level workers", wage grades 4 to 6 to "intermediate grade workers" and wage grades 7 to 8 to "upper-level workers", the latter having a possibility of being classified as cadres.

Clerical and service occupations must also be defined. These must not necessarily be bound to the cadre status. Here too, cadre posts should be reserved exclusively for management and technical functions - particularly in a phase in which, together with the introduction of the self-responsibility system, clerical work in the different economic units is expanding - whilst clerical staff should be classified as "employees" corresponding to the worker status.

Recommendation 6 : Training programmes and framework regulations

It is necessary to establish the form and content of training programmes which lead to the individual occupations, provision being made for alternative routes, where feasible and expedient (i.e. for specific occupations both apprenticeships and school-based training). In the process, information could be gathered on the advantages and disadvantages of different forms of training which could possibly be generalized at a later date. In Singapore, positive experience has been gained with this dual system of school-based and in-company training as recommended here. In our opinion, this approach is preferable to an exclusive orientation to the German "dual system".

Occupational profile, curricula and teaching materials should be developed jointly by the Education Ministery, the Ministry of Labour and Personnel and the ministries of the sectors concerned. This could take the form of framework regulations which could be adapted to the different local and technical conditions.

Recommendation 7 : Adult education in universities and technical colleges

For the time being, adult education at this level should continue as in the past, the different certificates and diplomas being mutually recognized in the various work units. The worker and employee universities (zhigong daxue 职工大学) which are governed by the sectorial administrations, should coordinate their education provision with the local spare-time universities (yeyu daxue 业余大学) of the school authorities and the evening universities of the regular universities (ye daxue 夜大学). Institutions within the sectors (worker and employee universities) should be opened to external students in order to achieve a greater utilization of teaching staff and room capacities. No more than one worker and employee university per sector should exist in any one locality.

The utilization of training and education facilities within the sectors for supplementary courses of the television university should, under all circumstances, be continued, and here, too, external students should be entitled to study, any compensatory payments being agreed upon by the units concerned.

Recommendation 8 : Adult education at secondary school level

The education and training of adults at secondary school level continues to be of great importance, in view of the considerable backlog. Furthermore, the self-responsibility system (cf.p.82)

is becoming more and more established both in rural areas and in industry and the tertiary sector. Accordingly, operational skills, readily applied in practice are playing an increasingly important role. Accordingly, adult education and training at secondary school level must assist in the conversion of the present system of classification (workers and cadres) to a new employment system based on real qualifications.

With a steady rise in the level of general education of young adults, the part played by adult vocational training can increase, resulting in a general improvement in the qualifications of employees. This should be accompanied by a reduction in the proportion of general education provision. It should not be the task of sectorial administrations to organize courses for those wishing to catch up on their general education, as has been the case in the past. The resultant free capacities could then be put to use for the vocational training programmes. The planning and implementation of programmes for those wishing to catch up on general education should be assigned to the school authorities. From the institutional point of view, this task could be carried out by the spare-time schools (yeyu xuexiao 业余学校) in the municipal districts and in rural areas and could possibly be combined with radio and television courses.

Recommendation 9 : The principle of vertical mobility

Efforts should be made to realize the principle of vertical mobility. Young people having completed vocational training courses should also be entitled to go on to study at technical colleges and universities, their vocational training qualifications being credited when matriculating. In this way, vocational training in general could be upgraded in that it would no longer be looked on as a "second choice". At the same time, the time-consuming and costly detour through the adult education and training institutions could be avoided.

Recommendation 10 : The future of the technical schools
(zhong zhuan 中专)

The technical schools should keep their task of educating and training technicians and middle-level cadres for industry, agriculture, schools, the health sector, the economic/finance and trade sectors. They are quite able to provide the skills required of technicians, primary school teachers, nursing staff and accountants, and there would seem to be no economic reason which would justify a transfer of the training of these groups to post-secondary level.

For specific disciplines, however, consideration could be given to supplementary training courses at the new short-term vocational colleges (duanqi zhiye daxue 短期职业大学), particularly in those locations in which they could absorb the great reservoir of general upper-middle school-leavers.

In the technical/industrial occupations requiring more practical, manual skills, the more theoretical training courses of the technical schools should be replaced by a qualified apprenticeship (cf. recommendation 12, p.98) or by the training courses of the skilled worker schools (jigong xuexiao 技工学校).

A further theoretical training course should only follow several years' professional experience (cf. recommendation 17, p.105). This option applies, above all, to the training of technicians.

The main objective of a reform of the technical schools should

be an increase in pupil capacity. This can be achieved through

- dispensing with the automatic entitlement to cadre status and the "allocation system" (cf. p.82 f), i.e. the allocation to a specific work unit;
- an easing of the obligation to live in, i.e. a certain number of pupils who do not live on the campus should be entitled to enrol;
- opening the schools to those applicants who will not remain in the sector concerned upon completing their training.

Recommendation 11 : Organizational integration of skilled worker schools (jigong xuexiao 技工学校) and the vocational middle schools (zhiye zhongxue, zhiye gaozhong 职业中学, 职业高中)

At present, skilled-worker schools and vocational middle schools are governed by two different administrations. It should be decided whether the skilled worker schools should (again) be placed under the authority of the Ministry of Education [37] or whether a system of "joint responsibility" should be introduced, similar to that applied to the technical schools (school authorities/sectorial administration) and the skilled worker schools (labour authorities/sectorial administration).

Although with such an organization, there are "frictional losses", their close link with the firms and other work units, which will subsequently "take on" the young people after training, must be seen as a positive feature. There is the further advantage, already shown by the vocational middle schools set up in cooperation with the firms, i.e. training in close-to-practical conditions with on-the-job training, specialist teachers and instructors, financial support from the firms, etc.

The selection of the disciplines in which courses are offered at the vocational middle schools is currently based on the short-term needs which have been identified. Longer-term planning would, however, appear to be more expedient and the decision as to whether courses should be offered in a new discipline should not depend solely upon the willingness of a partner firm to cooperate. At present, no training is available for a number of craft trades as there is no (state-owned) partner firm to provide the necessary funds and to take on young people after training.

New courses should be developed and offered for the craft trades, the clerical occupations and for those running small independent businesses. In this context, parallel training courses could be offered in the vocational middle schools in the form of apprenticeships, and at vocational training centres. (cf. recommendation 15: New recognized skilled occupations, p.101; recommendation 12: A new apprenticeship, p.98, and recommendation 14: Vocational training centres, p.100).

Recommendation 12 : A new apprenticeship (xuetu peixun 学徒培训)

Apprenticeships are an important form of training. In 1983, there were 2 million apprentices in industry, trade and transport alone, whilst there were a total of approx. 3 million pupils in the three school-based forms of vocational training at secondary school level [40].

However, apprenticeships in their present form are more of a "substitute" than an organized training course, so that they should be reorganized and supplemented by school-based training, at least one day per week. The reformed apprenticeship could lead to the same certificates or diplomas as those provided by the vocational training schools at secondary school level.

There are four arguments in favour of maintaining and developing apprenticeships, but in a new form :

- School-based training courses have limited capacities and apprenticeships could offer additional training opportunities with subsequent employment prospects for a great number of young people.
- Even if supplementary theoretical instruction were to be introduced, the cost of apprenticeships would still be lower than the cost of school-based vocational training for skilled workers.
- For the main part, apprenticeships have, in the past, been offered in those subjects for which there is no provision at vocational training schools.
- Apprenticeships provide training which is close to reality. As opposed to those attending schools, the apprentice becomes familiar with practical working conditions from the very beginning.

In order to derive benefit from the advantages of apprenticeships, the following "minimum requirements" must be fulfilled :

- Apprenticeship contracts between the training firm (and not the "master craftsman" as in the past) and the apprentice. The contract should not only specify the moral commitments of the contracting partners, but also describe the occupation envisaged, the training syllabus and objectives.
- Training provided by qualified instructors (cf. recommendation 16, p.104).
- Control by competent supervisory bodies.
- Clearly formulated and binding training contents and objectives.
- Supporting theoretical instruction.
- The range of products produced by the training firm must be such as to ensure that the training objectives can be achieved.
- The training firm must be equipped in such a way as to guarantee qualified training.

Small firms, above all the crafts, should be encouraged and enabled to train apprentices. In this way, use could be made of the knowledge of experienced craftsmen. If supplementary training is necessary, the local vocational training centres could be called on for support.

Recommendation 13 : School factories (xiaoban gongchang 校办工厂)

There are two reasons for maintaining the institution of school factories :

- to provide training near to reality,
- the sale of products provides the schools with additional financial support (still an important factor).

In the existing school factories, the training function should be given greater emphasis. If vocational training schools do not have their own school factories, suitable partner firms should be found to take on trainees.

Recommendation 14 : Vocational training centres
(zhiye peixun zhongxin 职业培训中心)

Depending on the local circumstances, vocational training centres should be set up by the school authorities, labour authorities or at least by a sectorial administration. In the process, use should be made of existing facilities, to the extent that these can be developed further. These centres should offer those vocational training courses which are not part of the provision of vocational training schools :

- Theoretical instruction for apprentices from firms which are unable to provide such instruction themselves.
- Practical training to familiarize workers (possibly technicians) and apprentices with advanced processes. This assumes that the vocational training centres are well equipped to cover :

- processes which do not exist in the firms but which will be introduced,
- processes which have already been introduced but for which there is no training,
- processes for which no training can be offered in the firms owing to the mono-structure of the production system.

- Training of trainers - at least for a transitional period, when no special instructor training institutions exist.
- Counselling of firms, transfer of technical knowledge and experience from firms into the vocational training centres.
- Training of in-company training counsellors.
- Short-term theoretical and practical courses for workers in collectives and individual firms.

At a number of locations, training centres have already been set-up by the labour authorities or the associated "labour service firms" (laodong fuwu gongsi 劳动服务公司). However, so far their tasks are extremely limited. It should be determined to what extent they can be developed or should be integrated in new vocational training centres set-up by other bodies.

Recommendation 15 : New recognized skilled occupations

The present vocational training system in the People's Republic of China is mainly oriented to the "modern" sector and industry. In the past, training for agriculture was mainly concerned with the training of technical and administrative cadres. In the municipalities,training is mainly carried out for industry.

The service sector, trade, the crafts and the administration

sector within production firms, however, have a considerable demand for skilled workers, and so far, it has not been possible to cover this demand by specific training activities. Furthermore, the change in the economic structure and the development of the market economy have resulted in the creation of new jobs requiring qualifications for which again there are no appropriate training courses or occupational and training profiles.

Production and commercial firms have a need for

- secretaries
- clerical workers
- accountants (to a certain extent the technical schools provide training for this occupation, however, the training is linked to the cadre status.)
- employees in the sectors sales/marketing, purchasing, balance-sheet/profit and loss accounting, banking service, insurance department, dispatch, legal service, cash desk and secretariat of the Directorate/management
- warehouse keepers
- sales-persons.

In the insurance agencies and institutions of law (public prosecutor's office, the courts, solicitors' bureaux), there is a need for :

- secretaries
- clerical workers
- accountants

In the construction sector, the demand is for :

- masons	- joiners	- plumbers/tin-smiths
- carpenters	- concrete workers	- scaffolders
- fitters	- mechanics	- electricians

At present, these functions are mostly carried out by contract workers (hetong gong 合同工) and temporary workers (linshi gong 临时工) coming from rural areas, some of whom have

undergone an apprenticeship there, have gained their experience "on-the-job" or have "inherited" their trade from their father. In the long run, this demand in the municipalities cannot be covered exclusively by this labour force - particularly from the qualitative point of view.

In the crafts, the following occupations are required :

- smiths
- upholsterers
- bicycle mechanics
- watch/clockmakers
- wheelwrights
- joiners
- locksmiths
- hairdressers
- shoemakers
- vulcanizers
- fitters

In the hotel, restaurant and catering sector, there is a need for qualified personnel in the following occupations :

- cooks
- bakers
- waiters
- confectioners
- noodlemakers
- mechanics/fitters for repair and maintenance (for lifts and heating equipment)
- electricians, also for repair and maintenance work
- fitters for repair and maintenance of water pipes and sewage systems
- qualified personnel for laundries and dry-cleaners

The above list is by no means complete and there must not necessarily be any training provision for each of the named occupations. However, there is a great need over and beyond the present coverage in terms of qualifications and occupations which should, when necessary, be catered for. Systematic studies should be undertaken to determine how training can be provided most effectively and economically for which occupations. Consideration should be also be given to the possibility of combining apprenticeships with theoretical training courses.

Recommendation 16 : Teacher and instructor training

For teachers at vocational training schools, a technical college degree is sufficient. At the teacher training universities, departments for vocational education and training could be set up. In addition to the already existing teacher training universities for vocational education and training (cf. p.71) additional specialized technical colleges specializing in the training of teachers at vocational training schools should be created.

Furthermore, teacher training departments should be set-up in natural science, technical, agricultural and other universities or the universities should be charged with the training of teachers in the respective disciplines. In addition, teachers in vocational training and adult education could be trained at worker and employee universities (zhigong daxue 职工大学), and at the spare-time universities (yeyu daxue 业余大学).

The "practitioners" (in the schools) and the "Masters" (in the firms) cf. chapter B 4, p.70, should be selected and trained according to set standards. For this purpose, a centre should be established, long-term, in each town. In an interim phase, training could take place in a vocational training centre (cf. recommendation 14, p.100). Pedagogics, psychology and didactics are subjects which should be integrated and applied in practice, both in the training of teachers of theory and in the initial and further training of instructors.

Skilled workers with several years' professional experience should be employed as trainers. They should undergo special instructor training, for example at a vocational training centre, in order to increase their specialist knowledge and acquire pedagogical skills.

Recommendation 17 : Training of skilled workers, master craftsmen and technicians

Within the current modernization process, middle management plays a central role. At present, however, no appropriate initial and continuing training measures are available for this staff, who are charged with management and control functions at working group, department and workshop levels.

This personnel requires both technical and organizational skills coupled with a broad-based technical knowledge. With the advent of organizational reforms in the enterprises, the introduction of the self-responsibility system in industry, the introduction of new products and new manufacturing processes, these qualifications are becoming more important than ever, particularly as China wishes to compete with more and more high quality products on the world market.

An efficient link must exist between the engineer in the drawing office and the worker in the workshop. This task is assigned to the skilled workers, the master craftsmen and the technicians.

For the time being, the courses for this group must be organized at existing vocational training centres. As the People's Republic of China is not familiar with this type of qualification, it would be expedient to call on the support of foreign experts for the development of programmes in pilot centres. Furthermore, suitable Chinese experts could be sent for training abroad.

Recommendation 18 : Pilot projects in the field of vocational training

As has been customary in China for some time, pilot projects should

be set up in the field of vocational training. In each case, it would be necessary to determine whether a successful project can be applied on a general scale or whether the results are isolated with no real prospects of transfer to other areas. This question must also be asked when involving foreign partners, even if there is the possibility of obtaining financial support.

We would propose the organization of pilot projects in particular for the following areas :

- Vocational training centres
- New forms of apprenticeship
- Instructor training at vocational training centres
- Courses for master craftsmen and technicians at vocational training centres
- Training of teachers at vocational training schools

Notes

1/ All the figures in this section are taken from :

a) Zhongguo tongji nianjian (Statistical Year Book of the People's Republic of China) 1984 and 1985, Peking

Figures from 1949 to 1984

b) Zhongguo baike nianjian (Year Book of the Encyclopaedia Sinica) 1984, Peking

Figures for 1983

c) Communiqué of the National Statistical Office of the People's Republic of China concerning the economic and social development

- for the year 1984 : published on 9.3.1985
- for the year 1985 : published on 28.2.1986

Figures for 1984 and 1985

2/ The sharp increase in the urban population is assumed to be the result of the change in the allocation criteria. The former People's Communes are now taken to be small towns.

3/ Imports of foreign consumer goods such as cars, colour television sets, video-recorders, etc., led in 1985 to a critical foreign trade deficit of 14.9 billion US$ (imports : 42.26 billion US$; exports : 27.36 billion US$).

4/ This section is based on the corresponding sections in the "China Handbuch", published by Wolfgang Franke and Brunhild Staiger, Düsseldorf 1974, in particular the articles by R.P. Kramers (Confucianism), T. Prokora (Legalism), H. Steininger (Taoism), H. Welch (Buddhism), R.P. Kramers (Christianity, Christian Missions)

The section on craft guilds and apprenticeships is based on an unpublished manuscript by M. Risler.

5/ - 1964 formulated by the then Prime minister Zhou Enlai in the report of the government during the first session of the third National People's Congress. Hongqi (Red Flag) Peking 1965, No. 1, p. 8
- 1975 also reformulated by Zhou Enlai in the report of the government during the fourth session of the Fifth National People's Congress. Hongqi (Red Flag), Peking 1975, No. 2, p. 23

Details taken from Zao Ruobing : Zhongguo Jiaoyu (The Education System in China) 1949 - 1982. Huafeng Shuju (Huafeng-Verlag), Hong Kong 1984

6/ Xinhua News Agency (engl.), London 10.11.1984
Renmin Ribao (People's Newspaper), Peking 13.11.1984
Guangming Ribao (Guangming Newspaper), Peking 22.7.1983

7/ For simplicity's sake, only the one term "vocational middle school" is used in the present text for this type of school. The general upper-level middle schools converted to vocational schools are called
- in rural areas, "agricultural middle schools" or "agricultural upper-level middle schools" (nongye zhongxue, nongye gaozhong 农业中学, 农业高中)
- in the municipalities : "vocational middle schools" or "vocational upper-level middle schools" (zhiye zhongxue, zhiye gaozhong 职业中学, 职业高中)

8/ Beijing Daily, Peking, No. 42, 1982, p.24

9/ Figures for 1980 and 1984 :
Renmin Ribao (People's Newspaper), Peking 16.1.1985
Figures for 1981 : 23%
Beijing Daily, Peking, No. 42, 1982, p.24
Figures for 1983 : 26.3%
Xinhau News Agency (engl.), London 19.7.1983
Figures for 1985 : Communiqué of the National Statistical Office of the People's Republic of China concerning the economic and social developments in 1985, 28.2.1986

10/ Lower-level middle school-leavers
1980 : 9.649 million
1981 : 11.542 million
1982 : 10.322 million
1983 : 9.603 million
1984 : 9.504 million

Enrolments in	a) General upper-level middle schools	b) Vocational school courses
1980 :	3.834 million	774,800 { excluding skilled
1981 :	3.278 million	699.800 { worker schools
1982 :	2.793 million	845.400
1983 :	2.598 million	1.509 million
1984 :	2.623 million	1.796 million

All figures taken from the cited Year Book and communiqué of the National Statistical Office of the People's Republic of China

11/ In 1984, the relationship was more favourable because of a further increase in the number of places for students at universities and technical colleges, and the considerable drop in the number of school-leavers from the general upper-level middle schools

	New students	General upper-level middle school-leavers
1980 :	281,000	6.161 million
1981 :	279,000	4.861 million
1982 :	315,000	3.106 million
1983 :	391,000	2.351 million
1984 :	475,000	1.898 million
1985 :	619,000	no figures available

Statistics of the Ministry of Education of the People's Republic of China (Chinese), Peking, Sept. 1984
Communiqué of the National Statistical Office of the People's Republic of China for 1984, published on 9.3.1985, and for 1985, published on 28.2.1986

12/ Sources as in note 11

13/ In this report "Adult education" refers to all general and vocational education and training measures outside the general education stream of primary school - middle school - technical college/university and the initial vocational training of young people. Accordingly, "adult education" covers both the important internal sectorial worker and employee education (zhigong jiaoyu 职工教育) and the variety of education and training provision outside the sectors : spare-time schools and universities, radio and television schools and universities, evening and correspondence study courses, etc.

14/ For the definition of "Cadres" cf. p.80

15/ Figures for adult education in 1983 :
- at university and technical college level 926,000 participants
- at secondary school level 9.748 m. participants
- at primary school level 8.172 m. participants

Sources : Communication on the fulfilment of the National People's Economy plan 1983, National Statistical Office of the People's Republic of China, 29.4.1984, in : "China aktuell", Hamburg, April 1984
Participants at university and technical college level 1984: 1.292 million; 1985: 1.725 million
Sources : Communiqué of the National Statistical Office of the People's Republic of China, for 1984, published on 9.3.1985, and for 1985, published on 28.2.1986

16/ For a definition of the term "cadres", "self-responsibility system" and "specialized household" cf. chapter 2.1, p.44).

17/ For the definition of the term "unit" cf. p.45.

18/ Zhong zhuan (中专) is the abbreviation of zhongdeng zhuanye xuexiao 中等专业学校 .
For statistical purposes, the technical shools are normally sub-divided in
- "technical schools" or "middle level technical schools" (zhongdeng jishu xuexiao 中等技术学校) and
- "pedagogical middle schools" or "middle level pedagogical schools" (zhongdeng shifan xuexiao 中等师范学校).
The term "technical schools" is somewhat misleading as all disciplines (including non-technical disciplines) belong to this type of school, except the pedagogical disciplines.
For this reason, the term "specialized secondary school" (zhongzhuan 中专) is still used as the general term.

19/ Source : Zhongguo baike nianjian (Year Book of the Encyclopaedia Sinica), Peking 1980, p.544

Pupils in	1983	1984
Specialized secondary schools, total	1,143,299	1,322,000
Of which "technical schools" (see above)	688,438	811,000
Of which "pedagogical middle schools"	454,861	511,000

Figures for 1983 in
Statistics of the Ministry of Education of the People's Republic of China (Chinese), Peking, Sept. 1984, and : Zhongguo baoke nianjian (Year Book of the Encyclopaedia Sinica), 1984, Peking

Figures for 1984 :
Zhongguo tongji nianjian (Statistical Year Book of the People's Republic of China), 1985, Peking

20/ For the definition of "cadre" cf. p.80

21/ Jiaoyu yanjiu (Pedagogical Research) No. 8, Peking 1981; Renmin Ribao (People's Newspaper), Peking 12.9.1984 and 26.11.1984, and talks held during the study visit in autumn 1984.

22/ In Chinese terminology, reference is not made to a "skilled worker" but to a "middle level technical worker" (zhongdeng jishu gongren or zhongji jishu gongren 中等技术工人, 中级技术工人)

23/ Source : Ministry of Labour and Personnel of the People's Republic of China, talks with Mr. Guan Yutai, Head of the Departement for Vocational Education and Employment, on 22.10.1984
Figures for school-based vocational training

	1983	1984
1) Pupils at vocational and agricultural middle schools	1.22 million	1.745 million
2) Pupils at technical schools	1.143 million	1.322 million

Figures for 1983 : Statistics of the Ministry of Education of the People's Republic of China (Chinese), Peking, Sept. 1984, and :
Zhongguo baike nianjian (China-Year Book) 1984, Peking.

Figures for 1984 : Communiqué on statistics concerning the economic and social development in 1984, published by the National Statistical Office of the People's Republic of China on 9 March 1985, printed in "China aktuell", Hamburg, March 1985.

3) Pupils at skilled worker schools 1983 : 700,000

Figures for 1983 : the Ministry of Labour and Personnel of the People's Republic of China, 22.10.1984

Figures for 1984 : Zhongguo tongji nianjian (Statistical Year Book of the People's Republic of China), 1985, Peking.

24/ See Note 23
1984 : 628,000
In zhongguo tongji nianjian (Statistical Year Book of the People's Republic of China), 1985

25/ Source : Zhongguo baike nianjian (China-year book), Peking 1980, p.556 and 557
Dalian, province of Liaoning : 13 universities and technical colleges
Shenyang, capital of the province of Liaoning : 16 universities and technical colleges

Liaoning province total : 62 universities and technical colleges; 74 adult education institutions at university and technical college level, 2 universities for administrative cadres, 1 provincial television university.

26/ In the People's Republic of China, a difference is made between "basic studies" (benke 本科) at normal universities and "technical studies" (zhuanke 专科) at the technical colleges. "Basic studies" normally cover a period of 4 years and "technical studies" 3 years. In the new "short-term vocational colleges" the period of study can be shorter.
Students for higher degree ("yanjiusheng 研究生) 1984 : 57,000
Source : Communiqué on statistics related to the economic and social development in 1984, published by the National Statistical Office of the People's Republic of China on 9 March 1985 Printed in "China aktuell", Hamburg, March 1985

The majority of the higher degree students are preparing for an M.A. degree

27/ University staff 1983 :

Professors	4,427
Associate Professors	29,058
Lecturers	137,631
Assistants	103,469

and lectors (= former assistants) 28,334
Source : statistics of the Ministry of Education of the People's Republic of China (Chinese), Peking, Sept. 1984

28/ Renmin Ribao (People's Newspaper), Peking 12.9.1984 and 26.11.1984
Up to the end of 1983, 52 technical colleges of this type had been established (total of universities and technical colleges 805). At this time, 27,300 students attended these institutions; in 1983 there were 14,200 new enrolments.
Source : Zhongguo baike nianjian (China-Year Book) 1984, Peking.

29/ Rural schools :
The agricultural (technical) schools (nongye jishu xuexiao 农业技术学校) with the status of a specialized middle school, catering for initial training; the agricultural upper-level middle schools (nongye gaozhong 农业高中), mostly for young people; the peasants' schools (nongmin xuexiao 农民学校) for adults, with the status of primary schools or lower middle schools. In addition, short-term training courses are provided.

30/ Information from the Ministry of Agriculture and Fishery of the People's Republic of China in Peking on 20.10.1984

31/ "Dual supplementary programme" for the school-leavers of the years 1966 - 1980 :
Courses designed to help participants catch up on their general education (bu wenhua 补文化) 26.63 million, of whom 9.89 million passed the final examination (= 38%)

Courses designed to help the participants to catch up on their technical education (bu jishu 补技术) 21.11 million, of whom 6.98 million passed the final examination (= 33%)

Figures up to the end of 1983. Source : National Committee for Worker and Employee Education in Peking, 19.1.1984

32/ Figures for 1983 : Statistics of the Ministry of Education of the People's Republic of China (Chinese), Peking, Sept. 1984, and
zhongguo baike nianjian (China-Year Book), Peking, 1984

Figures for 1984 from zhongguo baike niangian (Year Book of the Encyclopaedia Sinica), 1985, p.452

33/ Cf. Note 32

34/ In the translation, the Chinese order "zhigong xuexiao", "zhigong daxue" (职工大学) "for employees and workers" has been reversed

35/ Introduction of the self-responsibility system in agriculture - in accordance with a regulation issued by the Central Committee of the Chinese Communist Party early December 1980. Renmin Ribao (People's Newspaper), Peking, 5.11.1980. Reference in "China aktuell", Hamburg, Nov. 1980, p. 983 f

Introduction of the self-responsibility system in the municipalities - included in the Resolution of the Central Committee of the Chinese Communist Party on the reform of the economy, adopted at the 3rd plenary session of the 12th Central Committee of the Chinese Communist Party on 20 October 1984.

36/ This is to prevent the misuse of school-rooms or even whole schools as occurred in the cultural revolution.

37/ Up to 1980, the general education subjects offered by the skilled worker schools fell under the responsibility of the Ministry of Education.

38/ See Note 23.

Terms used in this study

Adult education	chengren jiaoyu 成人教育
Agricultural middle schools	nongye zhongxue 农业中学
Agricultural schools for adults in rural areas	nongye jishu xuexiao 农业技术学校
"Allocation" system (state job allocation system)	fenpei 分配
Apprentice	xuetu, yitu 学徒, 艺徒
Apprenticeship	xuetu peixun 学徒培训
Assistant	zhu jiao 助教
Assistant engineer	zhuli gongcheng shi 助理工程师
Associated professor	fu jiaoshou 副教授
Cadre	ganbu 干部
Central radio and television university	zhongyang guangbo dianshi daxue 中央广播电视大学
Chief engineer	zong gongcheng shi 总工程师
Collective	jiti qiye 集体企业
Contract worker	hetong gong 合同工
Correspondence studies	hanshou jiaoyu 函授教育
Deputy chief engineer	fu zong gongcheng shi 副总工程师
Engineer	gongcheng shi 工程师
Enterprise, firm	qiye 企业
Evening university	ye daxue 夜大学
Factory	gongchang 工厂
Firm, company	gongsi 公司
General upper-middle school	putong gaozhong 普通高中
Key household	zhongdian hu 重点户

Key school and university	zhongdian xuexiao 重点学校 zhongdian daxue 重点大学
Labour employment authorities	laodong ju 劳动局 laodong bumen 劳动部门
Labour service company (labour authorities)	laodong fuwu gongsi 劳动服务公司
Lecturer	jiangshi 讲师
Lower-middle school	chuzhong chuji zhongxue 初中初级中学
Master, master craftsman	shifu 师傅
"Min ban" schools (schools in rural areas "run by the people")	minban xuexiao 民办学校
Ministry of Education From summer 1985 onwards : State Education Commission (SEdC)	jiaoyu bu 教育部
Ministry of Labour and Personnel	laodong renshi bu 劳动人事部
National university entrance examination	quanguo gaokao 全国高考
Peasants' spare-time school	nongmin yeyu xuexiao 农民业余学校
Postgraduate student	yanjiu sheng 研究生
Post-secondary education institutions (universities and colleges)	dazhuan yuanxiao 大专院校
Post-secondary vocational and technical education (vocational college, short-term vocational college)	gaodeng zhiye jiaoyu 高等职业教育
Primary school	xiaoxue 小学
Private enterprise ("self-employment")	geti qiye 个体企业
Professor	jiaoshou 教授
Pupils, students (in schools)	xuesheng 学生

Replacement	dingti 顶替
Research student	yanjiu sheng 研究生
School factory	xiaoban gongchang 校办工厂
School authorities (province, town/district)	jiaoyu ting 教育厅 jiaoyu ju 教育局
Sector (of the company)	xitong yewu bumen 系统业务部门
Sectorial administration	xitong yewu bumen 系统，业务部门
Self-responsibility system	zeren zhi 责任制
Self-study, self-study examination	zixue kaoshi 自学考试
Short-term vocational college	duanqi zhiye daxue 短期职业大学
Skilled worker (middle level technical worker)	jishu gong 技术工 zhongdeng jishu gongren 中等技术工人
Skilled worker (training) school	jigong xuexiao 技工学校
Spare-time college	yeyu daxue 业余大学
Spare-time school	yeyu xuexiao 业余学校
Specialized household	zhuanye hu 专业户
Specialized secondary school	zhongzhuan 中专
Technical school	zhongdeng zhuanye xuexiao 中等专业学校
State-owned enterprise	guoying qiye 国营企业
Student	xuesheng 学生
Supplementary courses (television university)	fudoa ke 辅导课
Teachers in practical subjects	shixi jiaoshi 实习教师
Technical college	zhuanke xuexiao 专科学校
Technical college education	zhuanke 专科
Technician	jishu yuan 技术员

Television university	dianshi daxue 电视大学
Temporary worker	linshi gong 临时工
Theory teachers	lilun jiaoshi 理论教师
Training courses, Short-term training	peixun ban 培训班 duanxun ban 短训班
Unit	danwei 单位
University education	benke 本科
Vocational college Short-term vocational college	zhiye daxue 职业大学 duanqi zhiye daxue 短期职业大学
Vocational middel school	zhiye zhongxue 职业中学
Vocational school	zhiye gaozhong 职业高中 zhiye xuexiao 职业学校
Worker	gongren 工人
Worker and employee college	zhigong daxue 职工大学
Worker and employee education	zhigong jiaoyu 职工教育
Worker and employee education committee	zhigong jiaoyu weiyuan hui 职工教育委员会
Worker and employee schools	zhigong xuexiao 职工学校
Work unit	danwei 单位

SCHOOLS AND UNIVERSITIES - STATISTICS

			1949	1957	1965	1976	1979	1980	1981	1982	1983
Universities and technical colleges	Students	大学	117,000	441,000	674,000	565,000	1.02 m.	-	1.279 m.	-	1.207 m.
	Teachers		16,000	70,000	138,000	157,000	237,000	246,900	249,900	286,900	302,919
	Schools		205	229	434	392	633	675	704	715	805
	Staff		46,000	155,000	332,000	439,000	574,000	631,900	666,300	729,800	763,374
Middle schools (all)	Students	中学	1.268 m.	7.08 m.	14.32 m.	59.05 m.	60.25 m.	56.78 m.	50.14 m.	47.03 m.	---
	Teachers		83,000	293,000	709,000	2.81 m.	3.19 m.	3.17 m.	3.09 m.	2.87 m.	
	Schools		5,216	12,474	8,099	194,595	147,266	124,760	112,505	107,829	---
	Staff		128,000	534,000	1.10 m.	3.56 m.	4.13 m.	4.24 m.	4.12 m.	3.99 m.	
Secondary specialized schools	Students	中专	229,000	778,000	547,000	690,000	1.20 m.	1.24 m.	1.07 m.	1.04 m.	1.143 m.
	Teachers		16,000	58,000	55,000	80,000	113,000	128,600	135,900	149,500	156,344
	Schools		1,171	1,320	1,265	2,443	3,033	3,069	3,132	3,076	3,090
	Staff		24,000	137,000	121,000	197,000	262,000	298,400	325,700	351,600	
of which, technical schools	Students	中等技术	77,000	482,000	392,000	386,000	714,000	761,300	632,100	628,000	688,438
	Teachers		7,000	43,000	44,000	52,000	79,000	91,000	98,400	110,200	115,880
	Schools		561	728	871	1,461	1,980	2,052	2,170	2,168	2,229
	Staff		11,000	107,000	101,000	139,000	194,000	222,700	248,900	272,300	284,189
of which, pedagogical schools	Students	师范学校	152,000	296,000	155,000	304,000	484,000	482,100	436,900	414,000	454,861
	Teachers		9,000	15,000	11,000	28,000	34,000	37,600	37,500	39,300	40,464
	Schools		610	592	394	982	1,053	1,017	962	908	861
	Staff		13,000	30,000	20,000	58,000	68,000	75,700	76,800	74,700	79,659
Agricultural, vocational middle schools	Students	农职业中学			4.43 m.			453,600	480,900	703,600	1.22 m.
	Teachers				197,000			23,200	28,900	40,500	73,500
	Schools				61,626			3,314	2,655	3,104	5,481
	Staff				30,600			48,000	46,000	63,000	112,400
Worker - peasants schools	Students			22,000							
	Teachers			1,000							
	Schools			58							
	Staff			3,000							

Source : Zhongguo baike nianjian (China year book), Peking, 1980 - 1983 and statistics of the Ministry of Education of the People's Republic of China, Sept. 1984.

N.B. : No figures are quoted for the skilled worker schools.

SCHOOLS AND UNIVERSITIES - STATISTICS

		普通中学	1949	1957	1965	1976	1979	1980	1981	1982	1983
General middle schools Total	Students		1.04 m.	6.28 m.	9.39 m.	58.36 m.	59.05 m.	55.08 m.	48.59 m.	45.28 m.	43.98 m.
	Teachers		67,000	234,000	457,000	2.73 m.	3.08 m.	3.02 m.	2.84 m.	2.68 m.	2.59 m.
	Schools		4,045	11,096	18,102	192,152	144,233	118,377	106,718	101,649	96,474
	Staff		104,000	394,000	677,000	3.36 m.	3.87 m.	3.89 m.	3.74 m.	3.58 m.	3.49 m.
		普通高中									
Middle schools upper level	Students		207,000	904,000	1.31 m.	14.83 m.	12.92 m.	9.70 m.	7.15 m.	6.40 m.	6.29 m.
	Teachers		14,000	40,000	78,000	694,000	668,000	570,700	494,500	465,800	451,100
	Schools		1,597	---	---	60,535	---	31,300	24,447	20,874	18,876
	Staff		---	---	---	---	---	---	---	---	---
		普通初中									
Middle school lower level	Students		832,000	5.38 m.	8.03 m.	43.53 m.	46.13 m.	45.38 m.	41.44 m.	38.88 m.	37.69 m.
	Teachers		53,000	194,000	379,000	2.03 m.	2.41 m.	2.45 m.	2.35 m.	2.21 m.	2.14 m.
	Schools		2,448	---	---	131,617	---	---	---	---	---
	Staff		---	---	---	---	---	---	---	---	---

Source : Zhonggguo baike nianjian (China year book), Peking, 1980 - 1983 and statistics of the Ministry of Education of the People's Republic of China, Sept. 1984.

N.B. : No figures are quoted for the skilled worker schools.

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