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ABSTRACT

Three centuries ago only religious schools and apprenticeship controlled by the guilds existed to provide training. Regular academic schools originated in religions that needed a well-educated clergy, and these schools offered the model for the universal basic and secondary schools that exist today in nearly all countries. The European guilds gave structure and substance to learning through the opportunity to study with a master. Apprenticeship has survived the centuries. At its most sophisticated, it has become very complex and structured, as in the German dual system. Three types of training have roots in the regular schools: arts and crafts schools, vocational and technical schools, and comprehensive high schools. Although France offers many other forms of skill training, the typical French system provides for the simultaneous delivery of skills and the regular school curricula. A system that has greatly influenced other countries is the U.S. comprehensive high school. Its main characteristic is to keep all students together until the end of the secondary level. Three systems are descendants of the apprenticeship tradition: the dual system from Austria, Germany, and Switzerland; enterprise-based training centers in Latin American countries; and the Japanese system in which vocational training is offered by large corporations. These systems cannot simply be transplanted from one society to another. They must be adapted to local conditions. In addition, their shortcomings in the country of origin tend to be exaggerated. (Contains 19 references.) (YLB)

TRAINING

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Five training models

by
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Torkel Alfthan

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Five countries, five training models

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I. Introduction

There are many ways to develop work-related skills and knowledge. In fact, in most countries there is a bewildering mosaic of schools, training institutions, enterprise-training provisions and apprenticeship programmes. As time passes there is no tendency for this institutional complexity to be reduced. In fact variety increases: different institutional formats, delivery methods, funding and forms of coordination coexist. Furthermore, these training formats have been evolving with time and there are reasons to assume that the rate of change may even increase.

Contrasting training institutions with regular academic schools, which are very stable, is helpful. In regular schools, teaching methods change little, and curricula need only fine tuning to remain functional for many decades. Despite enormous differences in quality, most academic systems look more or less alike and offer the same subjects to all students, to the end of secondary education.

Therefore understanding the diversity in training is no trivial matter. Probably the best way to organize the subject is to begin with a historical perspective and try to determine how today's training institutions have evolved from earlier types of institutions. Indeed, most education and training forms are a cross-breed of a limited number of original models of institutions.

Discussing the German system or the French system drastically simplifies matters. For instance, France has structured apprenticeship programmes, which are the hallmark of Germany's system. France has also training within enterprises, which is the distinguishing feature of the Japanese system. But the French system differs from those of the German and the Japanese in the sense that apprenticeship and in-plant training are not the main thrust of a system that relies mostly on vocational schools, which combine academic and vocational disciplines.

These institutional solutions are not adopted by countries randomly or at will. Instead, they have deep cultural roots in the country. They reflect national predispositions and traditions. Such roots have serious implications for policy. Attempts to change roles and styles of operation which conflict with their nature are likely to fail. By the same token, imported institutions which are too

§ The authors are from the Training Policies Branch of the International Labour Office. However, the opinions expressed here do not necessarily coincide with those held by the ILO. The authors are grateful to João Oliveira, J. Prokopenko and V. Gasskov for comments and suggestions but remain solely responsible for the final text.

distant from the local culture may be rejected. Institutions may be named and renamed at will and the permutation of words such as technical, vocational school, training centre is almost endless. Nevertheless, what matters is their nature and ethos. Low-status schools will not assume higher status by changing names. Schools dominated by academic values have great trouble in preparing skilled workers. Very frequently, motivation is low, the prejudice against these occupations remains alive and students show little interest in jobs that utilize the skills taught.

The vocational programmes traditionally offered at the level of higher education are not considered here. Including areas such as dentistry or engineering would enormously complicate the analysis.

In this article, the main families of training institutions are examined, starting from the simplest and older and moving progressively to the more contemporaneous and cross-bred institutions. Some of these systems are also linked with the countries in which they originated and prospered. In most cases comments on the strengths and weaknesses of each system are included .

II. Religious schools versus guild apprenticeship :

Three centuries ago only religious schools and apprenticeship controlled by the guilds existed. Regular academic schools originated in religions that needed a well-educated clergy and, in the case of the Protestants, wanted their followers to read the Bible. Progressively, these became the schools of the elites, but their emphasis on religion and philosophy clearly shows their origins. The strong classical tradition is illustrated by the teaching of Latin and Greek.

Although religious at first, these schools offered the model for the universal basic and secondary schools that exist today in nearly all countries. Because their roots were imbedded in educating the offspring of the traditional ruling classes, they tended to favour theoretical argument and disregarded - if not disdained - all practical work . In fact, not until the Enlightenment did these schools introduce science subjects in their curricula. Thus, they neither catered to those who needed to learn occupational skills nor valued such pursuits.

Only a small and privileged elite attended academic schools. The majority of youth had no access to any school, either for economic or social reasons. For the vast majority, the only chance of gaining skills, knowledge and an occupation was to study with someone. This process could be casual: watching, imitating and unstructured tutoring. However, the European guilds that date from the Middle Ages began to give more structure and substance to this type of learning. They also established thresholds of competence which the apprentices must reach and strict requirements for becoming a journeyman and then a master. Under this system the apprentice offered his labour to the master craftsman in exchange for a small wage and on-the-job learning. In some cases, parents also had to pay the master for sharing his knowledge.

The crafts guilds had powerful control over the apprenticeship system. They «were the embodiment of a highly regulated and stratified system which aimed to ensure that the community obtained its manufactured products at controlled prices. But these goods were produced by men trained to traditional standards by traditional methods within a traditional framework. Generation followed generation in certain progression from apprentice to journeyman to craftsman» (Perry). Controlling prices and limiting the supply of skills in the interest of job security were major preoccupations of the guilds. Given their direct links to the needs of the labour market, apprenticeship has proven quite

efficient at transferring skills, especially when technology is stable or changing slowly. Apprenticeship's strongest side is its practical orientation. The other side of the coin is that the system chronically neglects theory. This neglect slows the adaptation of workers to new job requirements under conditions of rapid technical advance and limits their skills in areas where greater conceptual mastery is required.

Apprenticeship, whether more or less structured, has survived the centuries. In the industrialized countries it has taken all possible paths. At its simplest, it remains the predominant mode of acquisition of semiskilled trades and occupations, sitting by Nelly. At its most sophisticated, it has become very complex and structured, as in Germany - the so-called dual system.

Apprenticeship also exists in developing countries, often with structures that are remarkably similar to those associated with the European guilds. African apprenticeship can be highly regulated by custom and tradition. But, as had been the case in Europe, under conditions of cultural uprooting and poverty, it may degenerate into mere exploitation of cheap labour. These are difficult situations in which regulation may reduce the number of masters taking apprentices and unemployment may be worse than exploitation. Despite these faults, apprenticeship in many places remains one of the most important forms of transmission of skills in the crafts and simpler occupations. In fact, in many places it may constitute the bulk, if not the only training offered, as school-based training may be marginal or non-existent.

III. The school-based solutions

In this section three types of training that have roots in the regular schools are surveyed. The first and simplest are the arts and crafts schools. The second are the vocational and technical schools. As they are known today, these schools provide an academic curriculum combined with preparation for specific trades or skills. The third is the comprehensive high school, in which the practical subjects are offered in one single school attended by all students from a given geographical area, irrespective of their career interests.

A. Structuring training for the poor: the arts and crafts schools

For a long time one could only learn the humanities in schools and the practical skills on the job. The idea of using the school structure for learning trades and crafts took hold only in the last century. From the point of view of the present essay, the exact history of this development matters less than merely noting that before this development poor children who failed to enter apprenticeship would be left without an occupation.

Some of the first experiments in conveying practical skills in a school-like structure were the arts and crafts institutions. Their main areas were the traditional trades and occupations. These schools, catering to the poor and the working classes, tried to offer training in trades roughly similar to those offered by apprenticeship.

These humble origins have carried over their consequences, up to the present, to many vocational schools. Their low class stigma persists in many cases, despite energetic efforts to improve their intrinsic quality and their image. Their inability to attract students of higher ability levels is, at the same time, the cause and consequence of the low status.

Very few arts and crafts schools still exist in their original versions. However, the idea is powerful and in some cases it is irreplaceable. In apprenticeship, learning with a master takes a long time, requires pedagogical skills from the master that cannot be controlled, offers little in terms of theoretical

or conceptual knowledge, and depends on the existence of enough willing masters. In addition, it tends to freeze the set of skills learned, as masters only teach what they have been doing.

Therefore, under the most varied names and structures, this idea of using school strategies to learn practical occupations survived and prospered. One way or another, today's vocational schools and centres are first, second, or third generation mutations of this original idea. The graph below illustrates this development - from religious school to academic school and then using the school format to teach practical subjects as in the vocational schools - and contrasts it with the parallel developments that took place with apprenticeship (discussed later).

What is important to notice is that they all share some advantages and shortcomings. Since one instructor can teach many students, it creates the possibility of very fast expansion in the skill base of society. By the same token, they have the potential of transmitting skills that are not widespread in the productive sector, i.e. transferring technological knowhow.

Having to recreate working conditions that permit practical learning, they have costs that may be much higher than those of learning while producing in a real enterprise. And considering that their typical students cannot pay, these charges end up being absorbed by the State.

Also on the negative side, they are more removed from the real needs of the labour market than apprenticeship. It stands to reason that apprentices learn while directly performing productive practical tasks. Not so with school-based learning. It may drift away from market needs and, indeed, this happens only too often.

They may be successful, or they may fail. But they rarely escape their inheritance. They have to keep fighting the low-class stigma traditionally attached to them and the tendency of mismatches developing between the training offered and that demanded.

B. The vocational schools: The French system

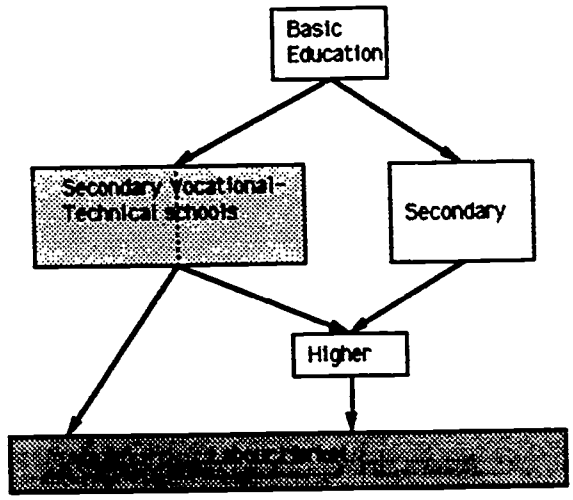
The original arts and crafts schools were very modest in their offering of the regular school subjects. Initially, basic literacy was considered sufficient. In fact, in the last century some well-known politicians stated publicly that the working class should not go to school in indiscriminate numbers.

But such extreme views failed to impose themselves and the academic content of such hybrid schools never ceased to increase, up to today. As a result, sooner or later an important decision arises. Should the vocational content be offered after the student finishes his academic education or during this process?

Some countries opted for the simultaneous delivery of skills and the regular school curricula. These are vocational schools. While France also offers many other forms of skill training, this solution can be identified for purposes of illustration as the typical French system.

The majority of French youngsters attend courses which, at least on paper, offer academic level, and do not preclude access to higher levels of education. That is to say, in theory at least they are not dead ends. It must be stressed however that this is not a single unified system where all students attend the same school. After the age of thirteen, students begin to be tracked to different types of schools. Without going into detail, we can say that those students who have better scholastic aptitude and wish to continue their studies may stay in the purely academic tracks, while those who want practical training can attend vocational schools and acquire an occupa-

tion. Access to higher education is possible for this latter group, but it is extremely difficult for them to succeed in this path.



Secondary Vocational/Technical Schools

Another variant that is also typical of the French system is technical schools. This system combines academic subjects (with formal equivalence of diplomas), technology and hands-on training. But notice that the difference between technical and vocational schools is elusive. In principle, technical and vocational tracks are offered to students with the same level of formal schooling and the most visible difference is the relative weight of shop versus classroom activities. Technical schools usually prepare for supervisory roles in factories or for high end skilled occupations such as electronics and drafting. Their curricula are less specialized than those of vocational schools. For example, they may offer one generic course in mechanics instead of the multiple alternatives availabile in vocational schools (machinist, turner, welder, etc.).

However, the two schools may be similar only on the surface. In many countries, technical schools are the junior brothers of the engineering schools - and notice that in France the engineering schools (counted among the «Grandes Écoles») are indeed prestigious. Their prestige tends to be higher than that of the arts and crafts schools which catered originally to those too poor to be apprentices.

Both schools are very important pillars in the French technical/vocational system. They are numerous and can offer very high quality training.

But given the fact that vocational and technical schools with a similar structure are also very common in many other countries, it may be worth discussing some of their features. The marriage in the technical schools of academic subjects with technology and practical skills is not a stable one (Castro, 1988). They often drift too far one way or the other. The practical side risks giving the school a low status, scaring away the brighter students. Alternatively, very often the academic curriculum takes over *de facto*, driving the practical subjects to a marginal condition, alienated from the mainstream of the school's activities. This is common in many countries where the lure of academia is strong. Not infrequently, these schools lack equipment and experienced instructors. This results in less practical technology training and divorces them even further from labour market needs.

Technical and vocational schools often fall under the tutorship of general education administrators, exacerbating the conflict between industrial practice and the purely academic ethos of the school. In other cases, more enterprising principals who try to establish closer links with industry, find that rules, regulations, and zealous ministry officers hamper this collaboration. Nevertheless, there are many excellent technical schools, even in countries not known for the quality of their training systems. This occurs particularly among those schools that both respond to the needs of local industry and have a very definite focus on technical competence.

Technical and vocational schools can be of high quality, offering adequate

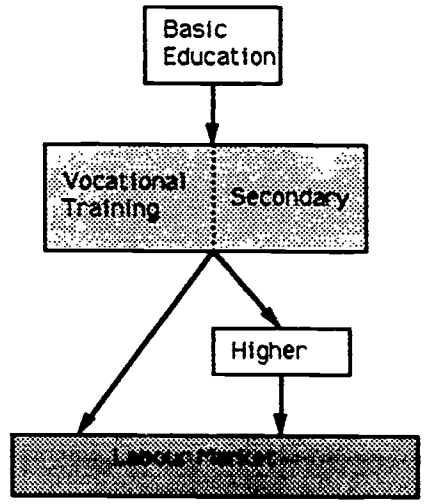
preparation in theoretical and practical subjects. Their main drawback tends to be a certain curriculum rigidity and their distance from the labour markets. Very often also, curricula are not updated at the same rate as technology changes in industry. France has found a solution to this problem. In order to make up for this curricula rigidity, the French schools offer a wide range of short duration courses to enterprises. A levy on the payroll finances a very large informal training network where the Chambers of Commerce play a large role and a maze of institutions (including the regular vocational schools) receive funds to train personnel from enterprises.

In many developing countries these schools may not be as successful. The weaknesses of the solution - tolerable in France and other industrialized countries - are amplified in countries of less industrial maturity. Manual trades are looked down upon and this obviously weakens their prestige. Financial difficulties undermine the quality of the programmes, increasing the gap between them and the labour market. However, one cannot say that this solution has failed completely in the countries in which it was adopted. There are several cases of success, at least partial, especially in Asian countries where industrialization has been rapid.

A similar model has been followed by Eastern European countries. Generally, they adopted systems not much different in structure from the French. In these countries, vocational education takes place mainly in vocational or technical schools at the secondary level. These institutions run parallel to the academic schools that prepare students for higher education. The main difference is the relatively small enrollment in the academic streams, compared to the vocational ones. More than two thirds of the youth attend technical and vocational institutions in Eastern European countries.

C. Comprehensive high schools: The American system.

Another system that has greatly influenced other countries is the American comprehensive high school. Its main characteristic is to keep all students in the same school until the end of the secondary level and to add diverse vocational subjects to the academic curriculum. Almost all schooling and training below higher education, encompassing the entire age group, takes place in the same school. Latin, welding, basket weaving, or mathematics are offered to the same group in the same school. Sixty five per cent of American high school students enroll in one or more vocational subjects. Figure 2 shows these paths from basic education to the labour market.



Diversified High School

The positive aspect of the system is that all students are together until the end of secondary level. They are not physically separated along the way, as in other systems that track some students to vocational and others to paths that lead to universities.

For these reasons, the system is greatly appreciated in other countries. Curiously enough, it attracts disparate groups: leftist groups that value equal opportunities, as well as those who gravitate towards American cultural influence. As is the case with the French system, the American is also widely imitated. International agencies promoted or financed it in developing countries. But even without admitting the American influence, some countries may adopt similar solutions. The idea of keeping students of all social origins in the same school for the entire basic and secondary cycles carries much weight. (In practice, this social mixing fails to materialize in larger cities where the poor and the rich do not live in the same neighbourhoods.)

Unfortunately, adapting this system to less industrialized countries is difficult. As in the case of the French model, the shortcomings that are acceptable in the country of origin tend to become more serious in other societies. When such schools operate far from the industrialized environment, they may not work very well.

All students, regardless of scholastic aptitudes, are expected to remain in the same school. In practice, those who are weaker in academic subjects are tracked to vocational disciplines, which sometimes can be perceived as punishment. Therefore, while all remain under the same roof, the paths followed by students may be differentiated. Comparing this system with others, which track students and channel them to different institutions (vocational, technical, or academic), *de facto* segregation may be even less satisfactory. Weaker students of comprehensive schools are constantly confronted with their peers who follow more prestigious courses leading to higher education institutions. In countries such as the Israel, Sweden or United States, although manual activities do not have the same status as non-manual, the differences are only moderate. But in poorer countries, the contrast in prestige between different careers may neutralize any effort to offer meaningful training in manual skills. The ethos of the school disdains training for trades and those who are forced to enroll do not take the endeavor seriously.

Community colleges are progressively taking over the task of vocational training in the United States. As the average schooling level of the population increases, the tendency to postpone training to the post-secondary level becomes greater. Other industrialized countries may well take the same path.

IV. The descendents of the apprenticeship tradition

In the schemes examined above practical subjects are offered in schools or in school-like institutions. This essay will now review solutions which can best be understood as developments of the training that takes place in the work place. In that sense, these solutions are descendants of the apprenticeship tradition.

A. The «dual system» from Austria, Germany and Switzerland

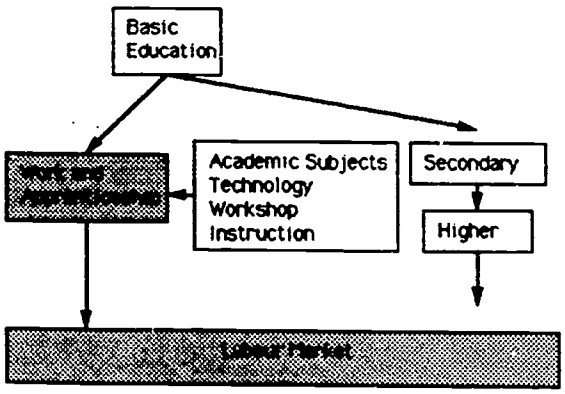
As mentioned before, some European guilds had apprenticeship structured to a very high degree. With the required adaptations, this system has survived in most countries. It exists, for instance, in the United Kingdom and in France and in some trades it retains, to a surprising degree, its medieval forms and rites. It also exists in the United States, mostly under the auspices of strong trade unions like those of electricians and plumbers. But today their overall weight in training the labour force is very modest, if not marginal in most countries.

However, there are three major exceptions to this phasing out of apprenticeship in industrialized countries. These are Austria,

Germany and Switzerland. They are essentially the German-speaking nations of Europe. In these three countries, apprenticeship evolved and became a system which absorbs at least three fourths of the corresponding age groups (90% in Germany).

Instead of adding practical subjects to schools, these countries preferred to add school subjects to training on the job. Since the three countries have very similar systems, let us consider the Swiss system.

After ten years of regular schooling, students will take up a job in the area they choose (or in whatever area is available if the labour market is tight). There are about three hundred trades offered to Swiss apprentices, from blacksmith to bank clerk. Three to four days per week they will work in the enterprise, under the supervision of a qualified master craftsman. The remaining days are spent in a training centre studying technological subjects, languages, mathematics and science. This simultaneous learning at work and in a training centre is at the origin of the expression «dual system». At the end of two to three years, students must pass a test which marks the end of their apprenticeship. Afterwards, they may remain with the same employer or move somewhere else.



Dual System

Those youth who choose to follow an apprenticeship take a different path from those who remain in academic schools. While some provisions have been added in Germany to move from apprenticeship to higher education, two to three years of additional schooling is required. As a result, very few apprentices manage to gain access to higher education. Those who enrol as apprentices know full well that this road does not lead to the university. However, in these countries universities are not the only path to career development. There are several examples of vice-presidents of Swiss banks who do not have university degrees and just about every bank manager is a former apprentice.

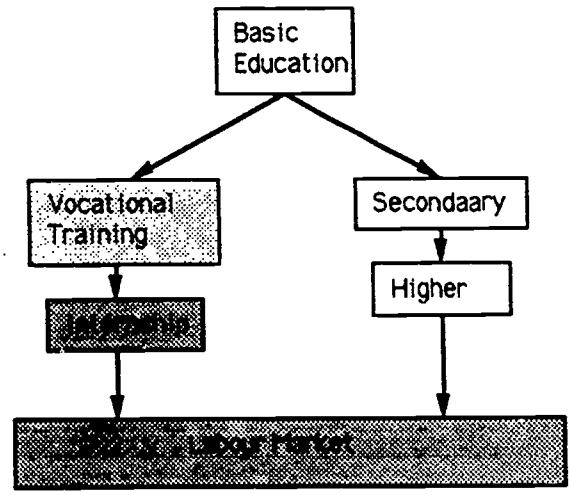
Many observers of the training scene claim that apprenticeship is quite successful in these three countries. It offers a good combination of theory and practice, it has a built in adjustment between supply and demand and it enhances good work habits and a sense of craftsmanship. Furthermore it has high prestige and attracts a good share of well-endowed youth.

Nevertheless, it remains a system that is particularly difficult to reproduce in other cultures. It requires that society attaches a high prestige to manual occupations - which is not at all the case in less industrialized societies where manual occupations are disdained. It also requires very exacting coordination between the public administration of the system, the employers (and their associations) and workers' organizations. Synchronizing the first job with the formal training and supervision of the apprentice while at the firm are very taxing activities that often go beyond the capabilities or the traditions of countries that try to implement it.

B. Training outside the school: The Latin American system

Latin American countries are not known for the excellence of their education systems. However, in the field of vocational training they have developed a system that is quite successful for industrializing countries: enterprise-based training centres. Some of the centres were operated by the railroads - in the past, one of the greatest consumers of skilled labour. In fact, the Brazilian Industrial Training Service (SENAI) - the pioneer in Latin America - was created by engineers who operated a railroad training centre.

The system was also heavily influenced by the Swiss dual system. In fact, in many cases the dual was tried. However difficulties of implementing it year after year, led to its progressive phasing out in favour of full-time training at the centre, followed by a supervised internship. (During periods of unemployment, the centres tend to take trainees for whom no provision of internship is made.)



Vocational Training Centers

As they exist now in most Latin American countries (the main exceptions are Argentina and Mexico, which never adopted the system), the systems are operated by the labour Ministry, by employers' associations, or by autonomous bodies. Some of their features deserve comment. They are separated from academic schools, thereby sheltering trades training from the prejudices against manual occupations and the attractions of higher education. The centres tend to operate close to the labour market, keeping good ties with industry. They are financed by a payroll levy (usually about 1%), which gives them financial stability and a long-range planning horizon. Their great autonomy and financial security have enabled them to fend off economic crisis and political interference. However, this may be a mixed blessing because it allows them to become heavily bureaucratic and less responsive to market changes.

The explosive growth of the informal sector brings new challenges to these systems. Their high costs and heavy structures are not well adapted to the need to train poorer workers in the informal sector. When the conventional markets dry up and the only jobs available are in the informal sector, the problems become worse. Lo and behold, on the basis of recent research, it seems a system that has worked well in developing countries.

C. Training enterprises: The Japanese system

Large enterprises throughout the world offer training to their workers, ranging from short introductory courses offered to workers joining the firm to full-fledged university degrees. If the requisite skills cannot be found in the market, enterprises train employees in them, offering training, so long as they do not lose too many of the workers they train to their competition..

However, Japan stands apart from other countries in enterprise-based training. The formal structure of the Japanese system offers a wide range of solutions. Within the official training system there are vocational schools, more or less as in France. But a few vocational subjects are also part of the regular academic schools attended by most students, like in the United States. Moreover, there are independent vocational tracks in the regular schools. Most of these programmes are of respectable quality but not all prestigious.

The hallmark of the Japanese system is the vocational training offered by large corporations. Regular secondary schools are of good quality and very competitive. However, they offer relatively little in addition to mathematics and science. The preparation for work that sets Japan apart from other nations is the lavish provision of in-service training throughout the life of the worker. Courses beyond the immediate and specific needs of workers are offered, creating a workforce that is dedicated, disciplined, flexible, and versatile. In that sense, the modest vocational content of preservice training is compatible with the lifetime training commitment of large firms.

This system, of course, has limitations. It requires low labour mobility, otherwise, the incentives for firms to offer such training fall dramatically. In addition, small and medium-sized firms (which employ 70% of the industrial workers) cannot offer such abundant training to their workers and therefore depend on school-based training, which is adequate but not outstanding.

V. Conclusions

At first schools did not teach practical subjects, and learning on the job was casual and unstructured. Training as it is known today combines practical learning workshops with school subjects in school settings. In some countries such as France and the United States and in Eastern Europe, the solutions revolve round schools that acquired the role of teaching practical subjects. In places such as Germany, Japan, and most of Latin America, the predominant systems are closer to the traditions of apprenticeship and training organized by employers.

These systems cannot simply be transplanted from one society to another. The strong social valuation of the craft traditions helps to explain why Germans chose to develop apprenticeship further. With the highly structured and all-encompassing nature of French formal education, vocational training naturally gravitated to it. The egalitarian values of American society underscore the preference for keeping students in the same school and offering vocational subjects to those who want to pursue them.

When exported to other countries, such systems have to be adapted to local conditions. Furthermore, their shortcomings in the countries of origin tend to be exaggerated, to an extent that they may not work at all. Programmes may fail to attract suitable trainees, may be downgraded in the school hierarchy, may lose touch with market reality, or may work only for a clientele that is too small.

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