

Skills and Change: A Synthesis of Findings of a Multi-Country Study of Vocational Education and Training Reforms

Synthesis of Findings

INTRODUCTION

Expansion of training is believed to be the solution to an incredibly long list of problems. Governments perceive an increase in demand for training if there is rapid growth of labor supply, if there is rapid employment growth, or if there is a sharp rise in unemployment. Vocational education and training (henceforth VET) has been called upon to help unemployed youth and older workers get jobs, to reduce the burden on higher education, to attract foreign investment, to ensure rapid growth of earnings and employment, to reduce inequality of earnings between the rich and the poor, and so on. These expectations have resulted in heavy government involvement in VET, but the record has been disappointing. Exaggerated expectations and overly involved governments are perhaps both responsible for the disappointments that have plagued VET in many countries. In some countries, they have led to the recognition that the role of government as a provider of VET has been overemphasized. Somewhat slowly, it is also being recognized that for these policies to be effective - even when the private sector participates in provision - it may be more important to ask of VET policies what they can reasonably deliver.

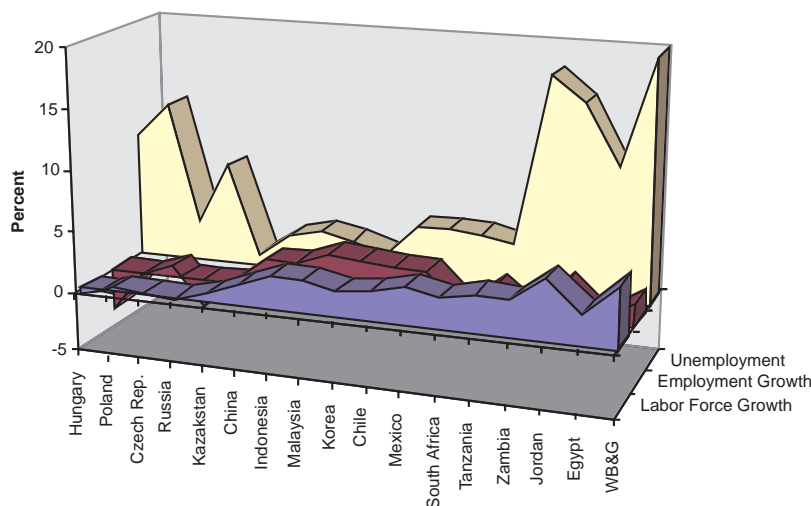
This note summarizes the results of a study which, based on the experiences of countries in all parts of the world, examined the constraints faced in implementing VET policies and analyzed how some countries have successfully implemented reforms. It bears emphasizing that while general conclusions are drawn, this is done *only* on the basis of the experience of the countries studied.

DEMAND-SIDE PRESSURES: THE ROOTS OF REFORM

The sample countries can be classified into three groups by their labor market characteristics. The first group has high labor force growth, low employment growth, and (consequently) high unemployment and underemployment rates - these are relatively low growth developing countries in Africa and the Middle East, represented here by South Africa, Tanzania, Zambia, Jordan, Egypt, and West Bank and Gaza.

The second group has high labor force and employment growth, and low unemployment rates - these are the emerging market countries of East Asia and Latin America, represented here by China, Indonesia, Malaysia, Korea, Chile, and Mexico. The third group consists of those with low labor force growth,

Figure 1: COUNTRIES CAN BE GROUPED ACCORDING TO THEIR LABOR MARKET CONDITIONS



Governments perceive an increase in demand for training if there is rapid growth of labor supply, if there is rapid employment growth, or if there is a sharp rise in unemployment

low employment growth, and high unemployment rates - these are countries in transition to market, represented here by Hungary, Poland, Czech Republic, Russia, and Kazakstan. (See Figure 1).

Pressures due to high labor force growth

Large numbers of labor force entrants pose a problem for policy makers when public employment growth is no longer feasible, and private employment growth is sluggish. Countries such as Egypt, Tanzania and Zambia responded to labor supply pressures by expanding formal public education and training systems, and absorbing their graduates into government employment. The fall-off in government employment and the growth of the informal sector results in the irrelevance of vocational education and training - which is largely formal - for an increasingly informal world of work. In Egypt's construction sector, for example, while formally trained workers constituted between 50-80 percent of entrants to the sector in the 1970s and 1980s, they accounted for only 5 percent of employment in the 1990s. In Tanzania, where the formal sector is less than 10 percent of employment, graduates of public training institutions have found only informal sector jobs since government employment began to decline in the late 1980s.

Because secondary school graduates face poor employment prospects, in countries where education systems are government-run and financed, this can lead to a bloated demand for higher education. Some countries have responded to this pressure by rationing places in colleges and universities. The secondary vocational track is the main instrument for this rationing. In Egypt, for example, only general secondary graduates are eligible for admission to fully subsidized universities, and the vocational track has swelled to include almost 70 percent of secondary enrollment. This has not rectified labor market imbalances, but the unsustainable financial burden of maintaining a large public VET system has led to deterioration of quality. The experience of other countries shows that more effective responses to these pressures involve non-VET measures. Countries that introduced cost-sharing in higher education have kept enrollments down, while not expanding vocational enrollments unnecessarily. Jordan, for example, expects university students to pay about one-thirds of costs in the form of fees. But the pressures to absorb a growing number of young job seekers are, obviously, most effectively met by improving their employment prospects. With a rapidly growing labor force and poor employment growth, Malaysia faced a similar situation in the early 1980s. Emphasizing primary and general secondary education (vocational education is only 11% of secondary enrollment), and growth-oriented economic policies, employment growth has outstripped growth of labor supply in the late 1980s and 1990s.

Pressures due to high employment growth

Rapid employment growth may create problems of its own. In the export-oriented East Asian and Latin American economies, the supply of skilled workers and technicians has occasionally fallen short of demand despite increasing wages. In Malaysia, for example, during the period 1986-1994, estimates show only a small fraction of the rising wage gap between skilled and unskilled workers is attributable to differential demand elasticity; technical and skilled workers had smaller *supply* elasticities than semi-skilled and unskilled workers. In Korea, unfilled vacancies of skilled workers as a share of employment grew from 2% to 7% between 1980 and 1991. In China, shortages of skilled workers have emerged following rapid growth over the past decade due to the pressures to improve competitiveness and adopt modern technologies. The demand for professionals, technically- and manually-skilled workers is growing faster than supply; this imbalance may be exacerbated because some state enterprises continue to hoard such workers. Since trade liberalization in the 1980s, Chile is increasingly concerned with increased inequality in labor earnings between skilled and unskilled workers because of a relative scarcity of the former.

Upgrading of skills of workers is an important concern in these countries. With rising, rapidly changing and increasingly sophisticated demands for skills, enterprises are increasingly expected to supply their own training. While this avenue is largely free of problems of mismatch between demand and supply of training, governments feel

pressured to intervene due to longer-term growth and equity considerations. The most important question here is whether firms should or can be coerced or encouraged to provide even more in-service training to workers. Firm-level data from Malaysia, Indonesia, and Mexico show that firms are more likely to train workers when these firms are larger, employ an educated work force, and invest in technological change.

Pressures due to high open unemployment

Rising unemployment and falling real wages are the most visible and costly aspects of transition. In large part, the problem is a fall in labor demand in the formal sector, though since the skill-mix required has changed, mismatches between workers and jobs also exist. In Poland, for example, the number of unemployed for each vacancy increased from 13 in 1990 to 87 in 1993. Education and training reform may be effective in solving the problem of mismatched demand and supply, e.g., while Russian industry has shed clerical and professional staff job growth is mainly for manual and production work, evaluations of retraining programs in Hungary reveal that some workers do benefit from training, and curriculum reform in schools has resulted in better worker-firm matches. But not all mismatches can be rectified through vocational education and training, e.g., in Russia, most vacancies have been for manual and physically demanding jobs but unemployment is mainly female. The Czech Republic has dealt with the problem of a fall in formal sector activity during the transition to market in a relatively innovative manner. A much larger component of the reduction in employment between 1990 and 1995 was countered by pushing or keeping people out of the labor force, and reducing the incentives to stay unemployed. Training programs - which have a poor record elsewhere - have been kept small. The Czech Republic relied on early retirement, and the number of new job-seekers was kept temporarily low by increasing enrollments and length of vocational education programs.

All transition countries have experienced large increases in the share of private employment despite labor hoarding in public enterprises. In Poland, while total employment fell by 2.6 million between 1989 to 1995, private employment grew by 2 million. Over the same period, private employment as a share of the total rose from 1% to 64% in the Czech Republic. By 1994, over 60% of the industrial work force in Russia was employed in privatized enterprises, and the private sector has grown to comprise more than one-third of employment in Kazakhstan. This change in the clientele of the VET system has spelt trouble for vocational schools, many of which were traditionally attached to enterprises. In Russia, faced with declining overall employment, these institutions have become less specialized and have shifted from technical disciplines such as instrument making and machining to service sector oriented training.

SUPPLY-SIDE RESPONSES: THE NATURE OF REFORM

Because skills can be provided in a wide range of settings, and due to the multiplicity of providers, it is not easy to partition VET supply into sub-sectors. Nevertheless, it is useful to think of it as consisting of: vocational and technical education in schools, pre-employment vocational training, and in-service training for workers.

Organization and management of the VET sector

The main government agencies involved in the management of VET are the ministries of education and labor, though other ministries usually play an important role as well. Vocational and technical education is invariably managed by ministries of education (see [Table 1](#)). In general, multiplicity of management is not a problem for this sub-sector. Vocational training outside of the formal school cycle and firms is usually overseen by ministries of labor. As compared with school-based vocational education, responsibility is somewhat more dispersed in the case of pre-

employment training supply. The responsibility for in-service training is considerably more dispersed across ministries. In more than half of the sample countries this responsibility lay with the ministry of labor, but in at least nine countries, other ministries were responsible. The management of these subsystems determines how they are used. Vocational education in schools may be used by ministries of education to keep students out of higher education, which is also in their area of responsibility. Training courses are often provided by ministries of labor to unemployed workers who are eligible for unemployment benefits. In-service training is sometimes viewed as a way to increase investment and growth by ministries of planning or finance.

Vocational and technical education

Vocational-technical education remains a large share of secondary enrollment in most countries (see Table 2). Vocational education is distinguished from general education by its higher cost of delivery - especially at the secondary level - and by the options it opens or closes at both the secondary and post-secondary level. In Tanzania, for example, unit costs of vocational education are twice those of general secondary education. To meet these higher costs, Chile's per-student subsidies for secondary industrial and commercial schools are 25-100% more than those for general education. In Egypt, secondary technical education costs 2-3 times more than general education at the same level. In these and many other countries, students entering vocational streams cannot go on for university education. In other countries such as Korea, the barrier is curriculum-related: entrance exams for universities are based on the curriculum of general secondary schools, so vocational students face an uphill task competing with general secondary counterparts.

The effectiveness of school-based vocational education appears to depend on the objectives set for these programs. The most common objectives are: first, to keep less gifted students out of higher education and off the streets; second, to temporarily keep people out of the labor market; and third, to provide employers with skilled workers and technicians. The experience shows that it is not a cost-effective way to keep less able students out of subsidized higher education. Even a well-organized and powerful government has not had success in using vocational secondary education to curb the voracious appetite of Koreans for higher education. Vocational education can be a cost-effective instrument for keeping people temporarily out of a labor market that is undergoing large-scale restructuring. The experience of the Czech Republic during transition shows that several conditions are critical for the success of this strategy: macroeconomic and labor reforms encouraged private employment; vocational programs were made more general and their graduates entered a more uncertain labor market with appropriately more general skills; expansion of vocational-technical education was financed not by borrowing but by limiting public funding of universities; and vocational programs were made less terminal so that they remained attractive. The experience of rapidly growing countries suggests that vocational

Table 1. Management of VET Systems

Sub-sector	Ministry of Education*	Ministry of Labor	Other Agencies**
Vocational and Technical Education	Czech, Hungary, Poland, Russia, Kazakstan, China, Korea, Indonesia, Malaysia, Chile, Mexico, South Africa, Tanzania, Egypt, Jordan, WBG	Hungary, Mexico	Czech, Kazakstan, Zambia, Egypt
Pre-employment Training and Retraining	Indonesia, Mexico, Jordan	Czech, Hungary, Poland, Russia, China, Korea, Indonesia, Malaysia, Chile, Mexico, South Africa, Tanzania, Egypt, WBG	Hungary, Kazakstan, Malaysia, Zambia, Egypt
In-plant Training	Czech	Czech, Poland, Russia, Kazakstan, Korea, Indonesia, Chile, Mexico, Tanzania, Jordan, WBG	Hungary, Kazakstan, China, Indonesia, Malaysia, South Africa, Tanzania, Zambia, Egypt

Table 2. Size of Vocational-Technical Secondary Education Track

Country	Secondary Enrollment Ratio	Number of Students ('000)*	Vocational-Technical Share*
Hungary	81	135	73
Poland	84	2,206	67
Czech Republic	86		84
Russia	88	6,277	60
Kazakhstan	90	1,750	33
China	52	15,300	55
Indonesia	43	4,109	33
Malaysia	59	533	11
Korea	93	2,060	39
Chile	70	652	40
Mexico	58		12
South Africa	77		1
Tanzania	5	23	65
Zambia	20		2
Jordan	53		
Egypt	76	2,788	68
West Bank & Gaza		53	4

education is most effective when it is used simply to meet current demand for skilled workers and technicians. It is difficult to make schools responsive to changing employer demands. But a mix of financial incentives and decentralization has helped some of Chile's agricultural and industrial schools do just this.

Vocational training programs

Vocational training is distinguished from vocational education by generally being outside the formal schooling cycle, and thus of greater variety both in terms of training duration and entry requirements. It is distinguished from in-service training by being outside of the workplace (and thus generally not for currently employed workers), but for those outside the schooling cycle who are seeking work. The proportion of practical to theoretical instruction in vocational training programs is higher than in vocational education but lower as compared to in-service training. The main objectives have been to: first, help unemployed workers find jobs; second, prepare school-leavers to enter the labor market; and third, to upgrade the skills of employed workers.

The success of these programs appears to depend more on what they aim to do than program-level details and how they are deliv-

ered. Public training programs do not appear to be a cost-effective way to help the unemployed find jobs. In Hungary and Mexico, where scientific evaluations exist, the findings suggest that public training programs are generally not effective, but are always costly compared with alternatives such as simply providing job search assistance. These programs seem to be somewhat more effective for selected subgroups (which differ by country) among the unemployed. Vocational training can be effective in preparing school leavers for jobs if the delivery is competitive and the economy is buoyant. The experience of Chile and Indonesia shows that when these conditions are met, there are different ways in which effective training programs can be delivered. But vocational training programs appear to be most effective when aimed simply at helping employed workers upgrade their skills. Malaysia's enterprise survey shows that of the firms that formally train their workers, more than half rely on external training providers, mainly private and joint venture training institutes; training provided in public institutions such as youth training centers and vocational schools is not popular with employers.

In-service training initiatives

In-service training is distinguished from vocational education and pre-employment training by being in the workplace, being specifically job-relevant and often being relatively informal even in the formal sector. All the sample countries had governmental initiatives to increase in-service training, which generally take the form of levy-grant schemes, tax credits, and training subsidies. The objectives of these initiatives are: first, encourage firms to pay for investments in the general skills of workers; second, assist school-to-work transitions, e.g., through apprenticeships; and third, to help workers acquire job-specific skills that are currently needed. Governments have used various forms of coercion and financial incentives, with varying degrees of success, to attain these objectives. The evidence suggests that mandatory requirements, levy-rebate schemes, and tax incentives have at best a mixed record in increasing in-service training. Despite simplifying the application process, Malaysia's double deduction incentive has had little success in encouraging training by firms that otherwise would not have trained their workers. The case of Korea, which has used all of these measures at one stage or another since the late 1960s, best illustrates their relative

effectiveness. Recent evaluations have indicated that the levy-rebate system has been ineffective in increasing in-service training, and it is being phased out.

Very efficiently run levy-rebate schemes may increase in-service training by some firms. Malaysia's levy-rebate scheme, which was initiated in 1992, appears to have increased the incidence of training modestly. But despite being efficiently and transparently run, it still faces considerable noncompliance problems. South Africa is the only sample country with a levy-rebate scheme administered by industrial boards. The evidence does not appear encouraging: compliance is low despite the decentralization of control, and the effectiveness in increasing training is doubtful. Schemes that provide earmarked subsidies for in-service training appear to have had more success, but these schemes have not been evaluated carefully. And even if found to be effective, straight subsidies pose obvious budgetary questions. Levy-rebate schemes, that have the advantage of being self-financing, discourage employment since the tax is levied on payroll.

CRITICAL ISSUES, CONSTRAINTS AND INNOVATION

This section summarizes three important reform issues relating, respectively, to the organization, provision, and financing/content of vocational education and training.

Reorganizing to facilitate continual reform

The problems of fragmentation due to multiple government agencies and the difficulty in getting timely employer and trainee inputs make it hard to ensure efficient and accurate feedback to VET suppliers, and quick reforms in response to this. Sometimes, the sluggish responses prompt interventions by officials in higher levels of government. Korea's Presidential Commission on Education Reform has helped to resolve contradictions between general and vocational secondary education and higher education. Malaysia's Economic Planning Unit helps to monitor whether labor market demands are being efficiently met. Chile's Planning Office played a crucial role in the 1980s in designing VET policies, and in determining the pattern of government subsidies for general and vocational education. But the case of Australia, which has launched reforms to ensure that its VET system would be sustainable and self-adjusting as circumstances change, is perhaps the most innovative.

Australia's efforts to facilitate smooth and cost-effective VET system responses to changing labor market conditions can be classified into four measures: first, combining the relevant government agencies into one body at the federal level for coherent policy making and allocation of public funds; second, ensuring employer and worker participation in policy setting at the federal and state levels; third, shifting some of the financial burden of VET onto beneficiaries, viz., students and trainees; and finally, ensuring competition in provision so that the supply is cost-effective and relevant. With a single national ministry encompassing employment, education and training, competing priorities could be resolved closer to the operating level.

Encouraging private providers

The experience shows that when VET policies are designed well, a vigorous private supply response can be forthcoming. Funding mechanisms that require public providers to compete on equal terms with private firms have resulted in the latter supplying a healthy section of commercial, industrial, and agricultural secondary education in Chile. For shorter courses that lead trainees directly to jobs, Chile's experience shows that clear and balanced legislation may be even more important than government subsidies. But while these conditions are necessary, they are not sufficient. For a vigorous private supply of training, there must also be growth in the demand for skills that these programs provide. Generally, the willingness of pay for skills that are relatively general - e.g., language, computer

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and secretarial skills - arises sooner than for comparatively specific skills - e.g., for technicians or machinery operators. As a result, when regulations are favorable, the private supply of commercial training emerges first. The experience of the Czech Republic shows that with the growth of demand for technical skills (due to growth of modern manufacturing), the private supply response for technical training can be equally vigorous. In light of these findings, the belief that government provision of technical training is necessary because the private sector is “reluctant” to enter this field should be reconsidered.

Dualizing vocational education and training

The problem of strengthening the links between education and employment preoccupies policy-makers in all countries. This attention turns into efforts to vocationalize curricula, involve employers in schooling decisions, or create incentives for employers to offer apprenticeship training. These attributes are associated with the German approach to VET, referred to as the “dual system”. For these reasons the dual system is attractive for other countries. But efforts to import the system have not been successful. The main reason is that the employment structures and institutions of low and middle-income countries are quite different. First, manufacturing and services, in which most apprenticeships are provided, have almost 90 percent of employment in Germany; this ratio is considerably lower in low income countries. Second, even in the relatively modern manufacturing and services sector in developing countries, employment is concentrated in micro and small enterprises; firms in these countries are likely to be unregulated and with weak unions, so it is difficult to ensure that apprenticeships conform with established standards. Third, firms in Germany bear the high costs of apprenticeships but, in most developing countries, firms are reluctant to bear these costs. Governments which are tempted to bear the entire burden should be aware that the poorer the country, the greater the costs of implementing a German-style dual system: while the annual unit cost of the dual system in Germany is about the same as its per capita GNP, simulations show that this ratio is greater than two in Korea, more than three in Indonesia, and over four in Egypt.

While the German system is not “importable”, the principles underlying it provide valuable lessons. First, participation in the dual system is voluntary: even some firms that are “qualified” to offer apprenticeships do not do so, and employers are under no obligation to retain trainees upon completion of the dual program. Second, the organization and control of vocational education and training are left to the body that pays for the instruction: the state and local governments pay for and control relatively general skills that are acquired in school, and employers pay for and determine job-specific training acquired in the workplace. Finally, the dual system is not used to keep high school graduates from pursuing higher education; in fact, Germany’s experience shows that the education level of dual system entrants has risen significantly over time as the pace of technological change has increased.

SUMMARY AND LESSONS LEARNED

At the risk of oversimplifying the complex changes in the countries studied, the ingredients of success in VET reforms can be summarized as follows: Successful reforms make school-based *vocational education* more like general education in two ways - the content is made more general, and the vocational-technical track is made less dead-end. Successful reforms appear to be those which combine public financing of *pre-employment training* with rigorous evaluation of program impact in design, and ensure competition between providers in delivery. Successful initiatives to encourage *in-service training* recognize that formal training is not widespread even in formal sector enterprises, mandatory training targets and levy-rebate schemes do not increase training significantly, tax incentives work only where tax coverage is comprehensive, but while subsidies may increase training they will also increase expenditures. The main policy messages that emerge from the experiences of our sample countries are:

Matching instrument to target group is as important as choosing the best delivery mode

While mechanisms through which VET is supplied, e.g., public or private, subsidized or unsubsidized private, are important, it is critical that these programs target groups which will most benefit from them. This is because vocational education and training is found to be more effective when used for some purposes, e.g., to meet clearly observed, current, labor market demands, than for others, e.g., to keep less gifted students out of higher education, or to help the unemployed find jobs. Also, in most cases, vocational education and training programs are more costly than alternatives such as general education and job search assistance. In matching instruments to objectives, the usefulness of scientific evaluations cannot easily be overemphasized.

The government's role in facilitating information on VET has been relatively neglected

A preoccupation with providing, regulating, or financing VET can result in governments neglecting their role as a facilitator of information on the availability and effectiveness of vocational programs. The most striking evidence of this neglect in our sample countries is the lack of reliable information on the effectiveness of public training programs and the availability of privately provided VET programs. Better information on VET programs helps policy makers redesign their VET policies and interventions so that private providers are not “crowded out” of the market. Wider access to information on the availability and quality of training supply can better protect prospective trainees from unfair trade practices in countries where the regulatory powers of government are circumscribed by institutional factors than government-run accreditation schemes and stringent licensing practices.

A vigorous private response has refuted claims of the “reluctance” of private providers

Public funding mechanisms that require public providers to compete on equal terms with private trainers can result in the latter acquiring a healthy portion of the market for longer vocational education programs. For shorter courses that lead trainees directly to jobs, clear and balanced legislation seems to be even more important than government subsidies. Because the willingness of pay for relatively general skills, e.g., language and computer skills, often arises sooner than for occupation-specific skills, e.g., as technicians or operators, the private market for commercial training emerges before that for technical programs. Where demand for workers with technical skills has increased due to growth of modern manufacturing, and where regulations are balanced, the private supply response for technical training has been equally vigorous.

Political will, not institutional capacity, is the main obstacle for comprehensive reform

The experience of countries in all parts of the world, e.g., Chile in Latin America, Korea in East Asia, the Czech Republic in Eastern Europe, and Australia in the OECD, shows that a strong political will to reform - not socioeconomic and institutional factors - is the common determinant of successful restructuring of VET systems. Successful reformers are the most determined ones, not the wealthiest or the most institutionally advanced.

Notes

This summary synthesizes the findings of a joint World Bank-International Labour Organization of nineteen countries. It is based on the introductory chapter in *Skills and Change: Constraints and Innovation in the Reform of Vocational Education and Training*, edited by Indermit Gill and Fred Fluitman, with the assistance of Amit Dar. Indermit Gill is an economist in the World Bank's Latin America and Caribbean Region, Fred Fluitman is a training policy advisor in the International Labour Office's Training Policies and Systems Branch, and Amit Dar is a consultant in the World Bank's Human Development Department. The views expressed here are those of the authors, and should not be attributed to their respective organizations. ❖