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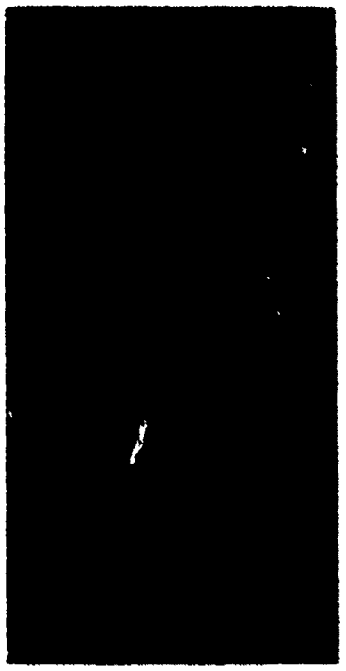
ABSTRACT

Skilled workers are needed in developing countries to facilitate economic development and to respond to a changing economy. Training is often provided by private employers, but governments must continue to play a role to help train workers in companies too small to provide training, and because training benefits society in ways too remote for employers and employees to pay for. Public training policies in developing countries can be designed to create strategies ensuring that the skills needed by the economy are developed and that equity objectives for the poor and socially disadvantaged are effectively addressed. The key elements of this approach include strengthening primary and secondary education, encouraging private sector training, improving effectiveness and efficiency in public training, and using training as a complement to equity strategies. The World Bank has been the largest single source of international financial support for skills training. Five actions will improve the quality of World Bank support for skills training: (1) analysis of the economic context of training, including labor market training, should be improved and used in formulating national strategies; (2) lending for prevocational courses should be replaced by programs to strengthen quality and access in academic secondary education; (3) lending should address the policy changes needed to create a favorable economic climate for private training; (4) lending should improve the efficiency of public training; and (5) training should require development of long-term strategies for the evolution of governments' role in training and should encourage broad-based coordination of donor support. (177 references) (KC)

A WORLD BANK POLICY PAPER

VOCATIONAL AND TECHNICAL EDUCATION AND TRAINING



Vocational and Technical Education and Training

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Washington, D.C.

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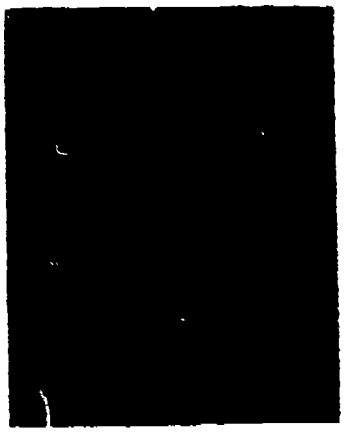


Preface

This paper was prepared by John Middleton (task manager), Adrian Ziderman, and Arvil Van Adams in the Education and Employment Division of the Population and Human Resources Department, under the general direction of Ann O. Hamilton and the immediate supervision of Adriaan M. Verspoor. It is the second in a series of policy papers on the different subsectors of education. The first addressed primary education, and future papers will deal with secondary and higher education.

The paper is based on the evidence presented in the forthcoming book, *Skills Training for Productivity: Vocational Education and Training in Developing Countries*, by John Middleton, Adrian Ziderman, and Arvil Van Adams. The policy messages in the paper were developed in consultation with ministers and senior civil servants from labor, education, planning, and finance ministries from 53 developing countries and with representatives of multilateral and bilateral assistance agencies. Substantial professional and financial support was provided by the Deutsche Gesellschaft für Technische Zusammenarbeit, the Inter-American Development Bank, the International Labour Office, the International Development Research Centre, and the OECD Development Centre. The paper was discussed by the Executive Directors of the World Bank on January 3, 1991.

Executive Summary

Developing countries need to improve productivity throughout the economy if they are to compete successfully in an era of rapid economic and technological change. This requires not only capital investment, but also a work force that has the flexibility to acquire new skills for new jobs as the structures of economies and occupations change. The level of competence of a country's skilled workers and technicians is centrally important to the flexibility and productivity of its labor force. Skilled workers and technicians enhance the quality and efficiency of product development, production, and maintenance, and they supervise and train workers with lesser skills. They are found in the modern wage sector, in agriculture, and in the small unregulated enterprises of the informal sector, both rural and urban.

The development of a skilled labor force makes an important contribution to development. The challenges are to use employer, private, and public training capacities effectively to train workers for jobs that use their skills and to do so efficiently in developing economies increasingly influenced by technological change and open to international competition.

Training in the private sector—by private employers and in private training institutions—can be the most effective and efficient way to develop the skills of the work force. In the best cases employers train workers as quickly as possible for existing jobs. Costs are low compared with training before employment, and trained workers are placed automatically in jobs that use their skills. Larger employers often have the technology, and their supervisors have the expertise, to train in both traditional and newly emerging skills. Even the very small unregulated enterprises of the rural and urban informal sectors can provide the training needed for existing technologies and production practices. Pri-

vate training institutions must function in the marketplace and be adept at changing enrollments and curricula to fit with the employment opportunities available for graduates. The costs and benefits of employer and private training are equitably shared by workers and employers. Workers contribute to costs by accepting lower wages during training and benefit through higher wages after training. Employers accept the lower output of trainees, pay the direct costs of training, and benefit from higher firm productivity.

In practice, the extent and quality of private sector training is limited in varying degrees, depending on the nature of the economy and the level of development in a given country. Economic and social policies often distort the incentives to employers and workers to invest in skills development, which leads to inaccurate decisions about the kind and amount of training needed. Moreover, individuals often have difficulty obtaining credit to finance their training, especially in longer programs in which the costs and risks to returns are high. In the small and medium-size firms that employ 60 to 80 percent of private sector workers in many developing countries, the capacity to provide training in the new skills needed to raise productivity is often weak. In addition, training benefits society in ways that employers and workers do not capture directly, which reduces their willingness to invest in these skills.

These limitations require a continuing role for governments to ensure an adequate amount and quality of training. In low-income countries especially, governments will need to continue to finance and provide skills training in the immediate future. But this should be an evolving role, one that seeks constantly to improve the capacity for training by employers and private providers. This is a long-term process, and it thus requires policies that compensate for the limits of the private sector during the transition period.

The structure and dynamics of the economy, as well as the level of development of private and public sector training, vary significantly across developing countries. Thus training policies will need to vary as well. This paper proposes an approach to the design of public training policies that can help policymakers create strategies that ensure that the skills needed by the economy are developed and that equity objectives for the poor and socially disadvantaged are effectively addressed. The key elements of this approach are strengthening primary and secondary education, encouraging private sector training, improving effectiveness and efficiency in public training, and using training as a complement to equity strategies.

Strengthening Primary and Secondary Education

Technological change is expanding the cognitive and theoretical knowledge required for productivity in skilled occupations, thus increasing the need for workers to have a foundation of basic competencies to make retraining effective. The most cost-effective use of public resources to improve the productivity and flexibility of the work force is thus investment in general education at the primary and secondary levels. In addition to generating broad benefits to society, general education directly increases worker productivity and increases the access of the poor and socially disadvantaged groups to training and wage employment. In Peru, for example, workers with a complete secondary school education have a 50 percent greater chance of receiving in-service training than those with primary education alone. The 1990 World Bank policy paper on primary education argues that in many countries additional investment in primary education is of the highest priority to address the shortfalls in access and quality that jeopardize productivity and income-earning opportunities, especially for the poor. Training in specific skills is more effective when it builds on a strong foundation of general education. Primary and lower secondary education provide this foundation for many traditional crafts and trades.

In modern sector manufacturing and services, however, in which the conceptual content of jobs is increasingly high and manual skills correspondingly less important, the broad competencies gained through good quality academic secondary education are significant, not only to immediate productivity, but also to the ability of workers to learn new skills throughout a career. The most important of these are the abilities to communicate clearly in writing and to use mathematics and science skills to diagnose and solve problems. Secondary education also improves the productivity of the self-employed. In Ibadan, Nigeria, 70 percent of the proprietors of urban informal sector firms engaged in radio and television repair have some secondary education, compared with 17 percent of those engaged in soap making.

The extra resources used in many countries to replace part of the academic curriculum with a few vocational courses would be better invested in improving achievement in the academic curriculum or in increasing access to such education. These "diversified" programs are no more effective than academic secondary education in enabling graduates to enter wage or self-employment. The limited training delivered in diversified programs produces equally limited skills and does not

much change student aspirations for higher education and white-collar employment. But it takes the place of more preparation in basic competencies. And a few hundred hours of craft training do little to help youth establish their own enterprises—a task that is difficult enough for experienced adults.

Encouraging Private Sector Training

Private sector training can be expanded and improved by creating a favorable policy environment. Governments can achieve this by reducing distortions in incentives and by establishing compensatory policies when incentives cannot be improved. Positive policies to encourage and develop employer training and to reduce the regulation of private training institutions can accelerate the response of the private sector to a changing policy environment.

Creating a favorable policy environment

Economic and social policies—such as high minimum wages, guaranteed public employment, and narrow skill differentials in publicly administered wage systems—can distort the incentives provided to employers and individuals to invest in skills development as well as the signals of skills needs to training providers. A careful assessment of the effects of these distortions on training efficiency should be an ongoing feature of policy development. The process can be facilitated by strengthening the links between economic and human resource planning. This assessment should be incorporated in the efforts of governments and assistance agencies to design economic adjustment policies and in the country analysis that supports specific assistance for skills training.

For sound social or political reasons, however, it may not always be possible to change these policies. In addition the impact of changes in incentives for private investment in training will take some time to take effect. Thus compensatory measures may be needed as second-best, transitional options to adjust for the effects of continuing distortions. Compensatory measures may include, for example, exemption of apprentices from minimum wages or partial public subsidies to compensate for artificially high training costs to employers and workers. Selective and partial interventions may also be needed where there are important social benefits of training.

Encouraging employer training

Where employer training capacity is underdeveloped, governments can assist by providing employers with information on external training opportunities, as well as technical assistance for the training of trainers and for developing policies and plans for enterprise training. When designed to offset specific market imperfections, reimbursement of the costs of training can stimulate firms' demand for training. In Singapore, for example, such programs have established or expanded training in all firms with more than 50 employees, and in more than half of those employing from 11 to 49 workers. However, reimbursement programs must be closely monitored to prevent firms from repackaging already established training just to gain reimbursement, resulting in windfall gains at public expense. Reimbursement programs should be considered a transitional device for building training capacity, not a permanent entitlement program.

Workers in rural areas and in the urban informal sector are increasingly well-educated and thus are better able to benefit from programs that seek to strengthen traditional apprenticeship. Options for governments include support for the provision of technical information, correspondence courses, textbooks, and theory classes.

Governments can also help to improve private training. In the Republic of Korea, for example, the government has provided private technical junior colleges with loans on favorable terms for equipment purchase and staff development.

Reducing the regulation of private training

Governments can encourage private provision of training by reducing barriers to entry into the training market, such as a required official curriculum, and by allowing institutions to set tuition charges freely. However, continuing programs of accreditation and consumer information are needed to protect against exploitive practices.

Improving Effectiveness and Efficiency in Public Training

With strong support from international donor agencies, including the World Bank, developing country governments have built public training systems. Most public training is delivered before employment, with skilled workers attending vocational schools and labor training centers

and technicians attending postsecondary institutions. A major policy objective in many countries is to use this capacity more efficiently; this is especially true in low-income countries where employer and private training is not yet well developed.

In many cases the record of public training is not satisfactory, often because it has been expanded to address objectives other than compensating for weak private training. These other objectives include reducing youth unemployment, creating a reserve of skilled workers to attract new capital investment, or diverting youth from aspirations for higher education. In the absence of sustained growth in wage employment, such policies have led to too much public training and low levels of placement of trained workers in jobs that use their new skills. Scarce public resources are wasted. Moreover, many countries find it difficult to provide adequate financing for these public institutions, which results in low levels of training quality and further reduces the impact of training on productivity. In Egypt, for example, in an effort to divert youth from higher education, the government enrolls more than half of upper secondary students in vocational schools. Open unemployment among graduates exceeds 35 percent. In Bangladesh, Cameroon, and Togo less than half of the public trainees find wage employment in their trade. Social rates of return to vocational schooling in Bangladesh are negative.

Governments must provide training efficiently. The record shows that public training can be cost-effective when it is able to respond to market forces with good quality training that results in high placement rates and when costs are well managed. Ownership turns out to be less important than the quality of management. These factors explain social rates of return to public preemployment training ranging from 12 to 25 percent in Botswana, Korea, Brazil, and Colombia.

There are six key elements in strategies to improve public training: choosing appropriate objectives, improving market orientation in planning, improving institutional responsiveness to market forces, using training resources efficiently, building capacity for policy implementation, and diversifying sources of finance.

Choosing appropriate objectives

A first step toward more effective and efficient training is to focus publicly provided or subsidized training more clearly on areas in which the presence of significant external social benefits, market imperfections, or weak employer and private training capacity reduce the role of private sector training. For example, higher technical skills can be im-

portant to growth in economically strategic sectors or industries in which technological change is rapid. The long duration of such courses and the risk of losing workers with transferable skills make employers reluctant to provide this kind of training. The costs can also make it difficult for individuals to finance their own training, especially where they are unable to borrow for their education. The risk to individuals of a substantial investment in training for newly emerging or rapidly changing occupations is also high, further reducing incentives to invest. Government support for private technical education, for example in the form of scholarships, may thus be needed. Public provision is a reasonable transitional alternative where private training is not available.

Public preemployment training of skilled workers in secondary vocational schools and labor training centers may also be justified when employer and private training capacity is weak. But such programs must be both effective and efficient, and in many cases this will require significant changes in institutional practices to improve responsiveness to market forces.

Training for workers displaced by economic restructuring is another case in which external social benefits justify public intervention. Experience in industrial countries shows that training can help dislocated workers find new employment if other complementary elements are in place, including job creation programs, support for self-employment and small business development, effective labor market information systems and labor placement institutions, subsidization of the costs of worker relocation, and income support programs during retraining and job search. Effectiveness requires that training be linked to demonstrated job availability or be integrated with efforts to expand self-employment or to establish small businesses. Experience in developing countries, including Chile and Mexico, suggests that effectiveness is improved by decentralizing publicly subsidized training to local labor markets through competitive contracting for services from employers, private training providers, and public training institutions. Accountability can be improved by linking funding to placement outcomes. The high cost of these programs calls for special attention to the need for highly flexible arrangements in order to minimize the length of training.

Improving market orientation in planning

Much public preemployment training is isolated from market forces and rigidly administered. These factors contribute to low levels of job placement for graduates. Improving responsiveness requires action at both the national and institutional levels. At the national level (or state level

in larger countries) the isolation of public training from the economy can be reduced through planning approaches that rely on labor market analysis, on monitoring of training costs and outcomes, and on information from employers in determining training supply.

Improving institutional responsiveness to market forces

At the institutional level responsiveness can be improved by clearly separating training from education in order to achieve the managerial flexibility that is difficult to develop in formal education systems. Encouraging institutions to specialize in the needs of different skill markets and to develop strong information links with employers, as well as increasing authority and accountability at the institutional level, further enhances managerial flexibility. Finally, effective response to training needs depends on good training outcomes, which in turn require adequate financing for salaries, materials and maintenance. Experience shows, for example, that materials and maintenance costs run to 25–30 percent of the recurrent budgets of effective institutions. These characteristics have been achieved in the vocational education or training operations of several developing countries, among them Brazil and Jordan.

Using training resources efficiently

Good training costs more than general education, and it is thus important to manage costs efficiently. Where public training capacity is underused, consolidation into fewer institutions with better financing is a first option. A second option is to use curricula and instructional practices that utilize training facilities efficiently. These include "dual" systems, which combine training off-the-job in basic skills and theory with supervised apprenticeship in employment, as well as competency-based modular curricula, which enable trainees to enter and exit training based on acquired skills, thus facilitating intermittent study along with employment. Training centers not tied to rigid curriculum requirements of education ministries have been more successful in using these instructional approaches than vocational schools managed by ministries of education.

Building capacity for policy implementation

Implementing responsive, market-oriented public training policy requires strong and sustainable institutional capacity. Training authorities

governed by a board with representatives of employers, worker organizations, and government have been effective in this task. Given a degree of autonomy and adequate resources, training authorities can help create a favorable policy environment for private training, be effective in market-oriented planning, and achieve economies of scale in professional curriculum development, testing, monitoring, and research and development services. An important function is the use of training funds to provide incentives that enable private and public training institutions to adjust to changing patterns of training needs, to provide training for the unemployed, and to provide training support for rural and urban informal sector programs to generate employment. Well-paid and well-trained managers and professional staff are essential to success.

Diversifying sources of finance

Finance policy for training should ensure both the stability of funding needed to develop sustainable institutional capacity for policy implementation and the level of financing needed to improve training results. The recent World Bank policy paper on primary education argued the need in many countries to increase public investment in that subsector, given the dominant importance of equity considerations and the presence of significant externalities. However, the claim on public resources for vocational education and training is much less strong in most countries. A first objective, therefore, is to increase the contributions of employers and trainees. Direct cost recovery from employers is the most efficient source of financing, either through employer sponsorship of trainees or through contracts for training services. Cost recovery from trainees is an option if fees are also charged for academic secondary or postsecondary education; otherwise, cost recovery for vocational programs raises significant questions of parity. Income from the sale of products and training services has provided an important source of revenue in several countries. Care must be taken, however, to strike a balance between training and the production of goods to avoid exploiting students, subsidizing competition with private firms, and lowering the quality of training.

Levies on employer payrolls have been a stable and effective way to finance training, especially for national training authorities, and to support technical assistance and financing programs to develop employer training. They have also increased employer interest in training. The risk that financing through levies would lead to inefficiency and top-heavy training bureaucracies can be minimized by channeling the financing through national training authorities, periodically reviewing levy rates,

varying levy rates across sectors and industries to reflect training costs, ensuring that funds are not used for other purposes, and using the resources to develop enterprise training. Payroll levies may be an appropriate option in middle-income countries, but less so in low-income countries, where mechanisms for tax collection may not be in place. In general, payroll levies should be seen as another transitional mechanism, to be dismantled as training institutions get stronger and as direct finance by trainees and employers is expanded.

Training as a Complement to Equity Strategies

Most of the poor in developing countries are found in rural areas and in the urban informal sector. Their principal asset is their labor, and improving their productivity and earnings is their main road out of poverty. Reform of policies to encourage economic and employment growth is the first step along this road for the poor, as well as for women and minorities. Improving levels of general education also helps by improving both productivity and access to training.

In the urban and rural informal sectors, traditional apprenticeship, appropriately strengthened, can be a major source of skills for the economically disadvantaged. Formal training programs can contribute if they are used to complement broader strategies to generate income. These strategies include reducing regulatory barriers to self-employment and using information on local markets, products, and the characteristics of clients in the design of broader programs. Training alone, especially when oriented toward modern sector wage employment and trades tests, does not address these factors, nor does it develop the range of skills needed for productive self-employment in informal markets.

In the modern sector, public vocational education has not been an effective measure to reach the poor, who can ill-afford to be out of employment for several years. Moreover in most developing countries secondary schools enroll a small proportion of the age group. In such circumstances, vocational schools become second-best options for academically well-qualified students who are not necessarily poor. In Thailand in 1979, for example, farmers and laborers comprised 88 percent of the labor force, but their children held less than 20 percent of the places in secondary vocational schools, the balance being occupied by the children of businessmen and government officials.

Additional progress for women can be achieved by reducing the distortions caused by discrimination in employment, including not only laws and regulations, but also entrenched social attitudes among employers. Carefully targeted training in nontraditional skills can help

enable women to enter higher-paying occupations if prospective employers are involved in designing the training and in selecting the trainees.

International Assistance

An average of 40 percent of multilateral international assistance for education in the 1980s was used to support vocational education and training. With some notable exceptions, bilateral assistance agencies provide less support for vocational education and training than do multilateral organizations. Although this assistance has helped to establish mainly public preemployment training capacity, it has reached a very small share of those seeking any form of education. Future efforts will be more effective if they are better coordinated and more closely linked to government reform programs that are based on a thorough analysis of policies needed to improve the balance between private and public training.

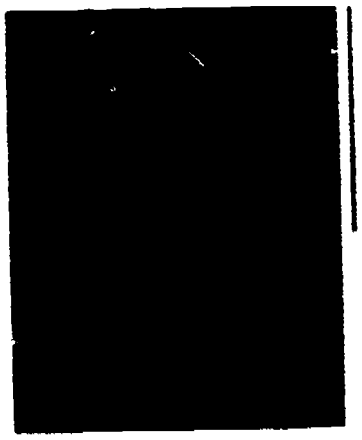
Implications for the World Bank

The World Bank has been the largest single source of international financial support for skills training. Since the early 1980s, findings from World Bank evaluations have led to increasing investment in national institutional capacity and center-based training and to significant reduction in support for diversified and vocational schooling. However, vocational investments have not been part of a broader strategy to address policy issues, especially the rationales for public training and the encouragement of private training. Substantial improvement in the analytical and policy content of investment operations is needed.

Five actions will improve the quality of World Bank support for skills training.

- Analysis of the economic context of training, including labor market issues, should be improved and used in formulating national macroeconomic strategies and designing investment operations.
- Lending for prevocational courses should be replaced by programs to strengthen quality and access in academic secondary education.
- Lending should address the policy changes needed to create a favorable economic climate for private training as well as direct measures to stimulate and improve training in the private sector.
- Lending should include measures to improve the responsiveness and efficiency of public training.

- **World Bank lending should require the development of a longer-term strategy for the evolution of the government's role in training and should encourage broadly based coordination of donor support.**



Introduction

A competent and flexible work force, one that can acquire new skills as economies change, is a necessary prerequisite for economic and social development. Society benefits in the form of higher productivity and the capacity to adapt to changing economic circumstances and opportunities. Individuals benefit through higher earnings and enhanced mobility in seeking better employment opportunities. In the modern wage sector, skilled workers and technicians enhance the efficiency and quality of production and maintenance, facilitate the adaptation and use of new technologies, and supervise and train workers with lesser skills. In the rural and urban informal sectors, the acquisition of skills can increase worker productivity in self-employment and in small enterprises.

Workers use a wide range of general and specific skills. As the complexity and responsibilities of jobs increase, specific manual skills become less important than higher-order conceptual skills and theoretical knowledge. The content of vocational and technical curricula reflect this continuum. Initial training at the semiskilled level emphasizes specific manual skills. In postsecondary technical education, general theoretical and conceptual content receives more emphasis and can occupy more than half of the curriculum. The level of general education required for successful training also increases with the level of skills being taught. More broadly educated and trained workers are better prepared to learn new skills as production technologies change, and thus to move up the occupational ladder and increase their earnings throughout a career.

Most middle-level skills are developed through work experience and training during employment, which is financed by enterprises and workers. Employer training can be highly efficient. But much employer training, especially that in small firms, is restricted to informal on-the-job training in the skills needed for existing production technologies. This

is the case for traditional apprenticeship, which provides most of the skills used in the very small, unregulated firms of the rural and urban informal sectors in many countries. However, larger firms, and some smaller firms as well, train formally and have the expertise and technology needed to develop new skills. Training costs are typically lower than those of preemployment training in vocational schools and training centers, and the economic impact of employer training can be high. Research in an Indian factory found that employer training increased productivity by 7 percent. In Malaysia employers realize an average return of 20 percent on training investments.

Basic vocational and technical skills are developed before employment in secondary vocational schools, labor training centers, and postsecondary technical education institutions. Private vocational schools and training centers provide a substantial share of this initial training, often at high levels of quality, with the costs paid by trainees. There are private technical schools in Bangladesh, Honduras, and Thailand, for example, that are much in favor with employers and whose graduates easily find jobs. At the same time publicly financed and provided preemployment training, although not the major source of middle-level skills in most countries, is an important part of the national training system. In addition governments train their own employees in ministerial or sectoral training organizations and also support or deliver a variety of specialized training programs to help the unemployed find jobs and to improve productivity and earnings in rural and urban self-employment.

Central issues in formulating the objectives and strategies of training policy are *when* and *why* governments should finance or provide training in vocational and technical skills, given the potential scale and efficiency of training by employers and private training institutions. There is no blanket rationale for public financing and provision of training. Rather, public resources will be used most efficiently when training policies are designed to overcome, or to compensate for, factors that constrain training in the private sector. These factors include distorted incentives for investment in training by individuals and firms, weak training capacity in the private sector, and the presence of external social benefits from training not captured by workers or employers. Governments may also subsidize selected training programs for equity reasons.

These factors require a continuing role for governments to ensure the provision of an adequate amount and quality of training. But this should be an evolving role, one that seeks to reduce limitations on private sector training. This is a long-term process that requires polices that compensate for the constraints on the private sector.

Thus in most countries governments will continue to provide training, even though much expansion can occur in the private sector. But public training must be both effective and efficient, and this will require improved responsiveness to market forces. Experience shows that public training can be effective and efficient where economic growth has been sustained and where training is responsive to employment opportunities. For example, social rates of return to preemployment training or vocational schooling in Brazil, Botswana, the Republic of Korea, and Thailand have been high—from 12 to 25 percent. Decentralized job training programs have facilitated economic adjustment in Chile and Mexico. In India and Malawi programs that combine technical and business training with access to credit have enabled carefully selected adults to start small businesses.

But slow growth in wage employment and unresponsive training systems have often combined to produce unsatisfactory results for much public preemployment vocational schooling and training. For example, in Bangladesh, Cameroon, and Togo less than half of vocational secondary school graduates find wage employment in their trade, and social returns to such schooling are very low. In Bangladesh social returns have been negative, because of an oversupply of graduates, inadequate financing, and low student motivation for training and for skilled occupations.

This paper proposes policies that can help governments make the transition to a more dynamic and efficient use of public resources to ensure that the skills needed to meet the challenges of economic change are developed and that equity objectives for the poor and the socially disadvantaged are effectively addressed. Progress can be made by:

- Strengthening primary and secondary education
- Encouraging private sector training
- Improving the effectiveness and efficiency of public training
- Using training as a complementary input in programs designed to improve the incomes of the poor and socially disadvantaged.

These policies have important implications for international assistance. Effective support from the World Bank will require substantial improvement in the analytical basis of investment operations and heightened attention to broad policy issues.

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Skills and Development

In an era of economic adjustment and change, development is increasingly a matter of managing the economy under conditions of uncertainty. Market signals and mechanisms and economic management through incentives are centrally important in allocating economic resources. In most countries, this market-based approach to development must be managed in conjunction with severe constraints on public resources. As a result, institutions face pressures to increase their flexibility in responding to economic change. These pressures fall heavily on the private and public institutions that develop the skills needed to facilitate change and growth. As economies change, so too must vocational and technical education and training. Positive public policies are needed to encourage these changes.

Uncertainties in the Demand for Skills

Three macroeconomic factors are increasing the uncertainty among employers and training planners regarding patterns of employment and the skills needed in society: demographic trends, policy changes that open economies to international trade and competition, and technological change. Successful population and economic policies are raising the prospect in some countries of labor shortages and rising wages, increasing the pressure on employers to acquire new production technologies to offset rising labor costs. More often population growth has outpaced economic expansion, resulting in high levels of open unemployment and low-productivity underemployment that pose significant social and economic problems.

Where opportunities for wage jobs are scarce, self-employment in the rural and urban informal sectors is an important source of earnings. In

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Asia and Latin America a quarter of all workers are found in nonagricultural self-employment; in many countries of Sub-Saharan Africa the urban informal sector of very small, unregulated enterprises accounts for as much as 60 percent of urban employment. Typically, more than half of this employment is unpaid work in family enterprises and in easy entry, low-skilled self-employment. Small, unregulated enterprises in the urban informal sector, however, often provide more productive, skill-intensive production, repair, and construction services.

Movement away from policies that protect domestic industries toward outwardly oriented trade policies is now well established in many developing countries. These policies shift the structure of production from goods and services primarily sold domestically to those that can find international markets. The need to compete increases pressures for efficiency and quality in production, and rapid changes in international trade relations can lead to rapid decline and growth in different industries. When countries are heavily in debt, these economic adjustment policies are often accompanied by reductions in public employment, especially where inefficiency is high in public and parastatal organizations. In the short term these changes can produce considerable dislocation of workers across industries and sectors of the economy and significant changes in the patterns of skills required. Successful adjustment can cause economic expansion to resume and employment chances to improve, but the process is often slow and imperfect, and employment problems can persist.

The introduction of new production technologies has mixed effects on employment and skill needs. Information-based technologies, such as numerically controlled machine tools, robots, and computers can reduce the demand for workers skilled in traditional trades, while creating demand for relatively fewer workers with higher levels of skill. When economies are growing, the jobs lost can be balanced by opportunities created in other sectors and industries. But the workers dislocated by technological change must be retrained for these new jobs. Many of these jobs require a higher level of cognitive and theoretical knowledge, and retraining can be difficult if workers lack the educational foundation needed for training to be effective.

Barriers to Efficient Response

The capacity of employers, private training organizations, and public education and training systems to respond to changing needs in uncertain economic environments is often limited.

Employer training

The effect of employer training on productivity and equity can be limited by four factors. First, government intervention in labor markets can reduce the incentives to workers and employers to invest in skills development. This reduces the amount and quality of privately financed training, which increases the need for public financing to meet skills needs. Second, where management capacity is weak, training capacity is usually even weaker. This is a significant constraint on training by small firms. In developing countries more than a third of employment is in firms of less than 100 employees; in smaller countries this proportion rises to 60 to 80 percent. In addition small firms rely heavily on external training for new skills and thus are hostages to the often-low quality of public and private training institutions. Third, even large employers are reluctant to invest in higher technical education, partly because of the cost of long programs and partly because the more general and transferable nature of higher technical skills increases the risk of losing both the employee and the training investment. Fourth, the benefits of employer training to the disadvantaged are reduced by the tendency to hire and provide the most training for the best-educated employees. These are less likely to be poor or to be members of socially disadvantaged groups, who have less access to primary and secondary education.

Traditional apprenticeship in the unregulated enterprises of the rural and urban informal sectors is a highly efficient way to reproduce the skills of masters. However, it is weak in developing new skills, and access is often restricted by the availability of apprenticeship places and by social barriers that prevent women or minorities from entering certain trades.

Private training

If allowed to compete freely, profit-making schools and centers and nongovernmental voluntary agencies can meet an important share of skills needs without public financing. However, private training is often too tightly regulated. Ceilings on tuition constrain income, which prevents entry into occupational areas with high equipment and instructor costs. Regulations requiring private vocational schools to follow the public curriculum reduce flexibility. The net effect of tight regulation is to reduce the amount of training provided, especially in the more technical occupations with high training costs.

Public training

Most publicly financed or provided training occurs before employment. Responsiveness and efficiency have been hampered by rigid planning and management, weak linkages to employers, inappropriate objectives, and inadequate financing. These constraints are especially binding when institutions are called upon to provide rapid retraining for dislocated workers.

RIGID PLANNING AND MANAGEMENT. Planning for skills supply is often driven by manpower requirements forecasts that do not take market forces into account and thus yield inaccurate predictions of skills needs (Box 1). At the same time, public institutions are shielded from private competition, and accountability for employment outcomes is weak. And when public institutions try to enter training markets, they are often discouraged by regulations that restrict their ability to retain earned income, which reduces incentives for entrepreneurial activities. Centrally determined and rigidly administered curricula prevent institutions from responding to locally identified training needs and from reducing the length of training to lower costs.

Box 1. Weaknesses of Manpower Requirements Forecasts

In occupations in which demand is mainly determined by demographic factors and public employment policy—such as health technicians and agricultural extension workers—it is possible to estimate the volume of training needs in the medium term. But skills projections that are based on estimates of future growth in most subsectors of the economy have proved inaccurate. There are for four reasons for this. First, in open economies skills needs are based on projections of output, a difficult task in uncertain conditions. In command economies they are based on growth targets,which are often inaccurate. Second, the model assumes that only a given combination of skill levels will generate the target output and thus that employers will replicate this combination. In fact employers are sensitive to the price of labor with different skills and will reorganize production to reduce the skills content if it lowers production costs. Third, models assume that a specified type and level of education is needed for a particular job. In reality individuals with different levels and types of education and training perform the same jobs at varying levels of productivity. Finally, there has often been an uncritical assumption that public training should meet projected skill gaps, regardless of cost and the existence of alternative, often private, options for acquiring skills.

WEAK LINKS TO EMPLOYERS. In the modern sector, public training institutions have few incentives to establish working relations with employers. Employers find little reason to cooperate with vocational schools and training centers that are unable to respond to their needs with good quality services. Although the skills imparted by modern sector institutions can be broadly useful in rural and informal sector self-employment, the curricula are weak in preparing individuals for the market and product opportunities of nonwage employment. Successful entry into self-employment and the establishment of small businesses require much more than vocational skills; access to capital and markets and business management competence are also needed. But training can be useful if it is based on knowledge of local market conditions and skill requirements. Managers and instructors in institutions that train for wage employment often lack this information, however, and the training provided is poorly linked to the realities of self-employment.

INAPPROPRIATE OBJECTIVES. Postprimary technical education and training has often simply been expanded beyond the capacity of the economy to provide jobs in efforts to achieve inappropriate objectives (Box 2). Much of this expansion has been directed at problems of large-scale youth unemployment. Under conditions of excess labor supply, however, vocational skills confer little advantage on new entrants to the labor market. Most entry-level jobs require few specific skills, and, when they do, employers very often prefer to hire and train broadly and generally educated workers, who often have lower wage expectations.

Expanding vocational training to create a reserve of skilled workers to attract new investment is an unnecessarily risky investment for governments. Most of the vocational skills needed to operate a new enterprise can be developed quickly and more efficiently after the investment plans are complete and the required skills are identified. The exceptions are higher technical skills because of the longer training period required. The creation of complex sets of training agencies and institutions that often provide the same services has been an unfortunate legacy of successive expansion phases in several countries. Coordination is difficult given lack of institutional accountability nsolidation to improve efficiency is even more challenging.

Expansion of public support for vocational schooling has also been justified on social grounds. One objective has been to change the aspirations of youth for higher education and white-collar employment. Where skilled jobs can be found, this policy can be effective; Thailand is currently a case in point. But the policy is costly and unproductive when youth cannot find jobs that use their skills. Agricultural secondary

Box 2. Labor Market Imbalances

Finding wage employment is difficult in countries where the modern sector of the economy is small and growing slowly, creating few new jobs relative to the numbers of young people entering the labor market with postprimary education or training. As shown in Table B-2, the number of educated labor market entrants can exceed the number of jobs created by a wide margin. In larger or expanding economies, a better balance between education and employment has been achieved.

Table B-2. Educated and Trained Labor Force Entrants and Jobs Created in Selected Countries, 1988

Country	*Ratio of educated entrants to jobs created*
Niger	a
Sri Lanka	a
Hungary	a
Colombia	a
Togo	12:1
Mexico	12:1
Zimbabwe	12:1
Benin	11:1
Chile	5:1
Turkey	3:1
Thailand	2:1

a. Net reduction in wage employment.
Source: Middleton, Ziderman, and Adams (forthcoming).

schools intended to keep youth in rural areas have been unsuccessful in the face of limited possibilities to enter into profitable farming and the pull of higher wage prospects in the modern and urban informal sectors. A second social objective of investments in vocational schooling has been to provide an "appropriate" form of education for academically less able students. But where secondary schools enroll only a fraction of the age cohort, all students admitted to any form of secondary education are academically capable. This is the case in most developing countries. In 1986 secondary enrollments in Africa, Asia, the Middle East and North Africa, and Latin America were 23, 40, 48, and 52 percent, respectively, of the relevant age cohort. Academically able students tracked to vocational schools see occupational training as a second-best choice. Their motivation to learn is often low, and their willingness to take up the trade for which they have been trained is lower still.

INADEQUATE FINANCING. Governments have had difficulty meeting the costs of vocational education and training, which can be two to three times higher than those of academic education because of small classes; the high costs of facilities, equipment, and instructional materials; and the need to pay higher salaries for competent instructors. When these costs are not met, training outcomes are inadequate and the employability of graduates reduced. In Peruvian cities poorly financed vocational secondary education contributes less to worker earnings than general secondary education. The resources needed to improve flexibility in responding to economic change cannot be found, particularly in countries where economic conditions restrain public budgets. A vicious cycle is established, especially where systems have been overly expanded. Graduates have difficulty finding skilled employment, and falling training quality makes the search even more tenuous as employers lose confidence in the training system.

To overcome these constraints, governments need to have an explicit strategy for skills development. Such a strategy will usually include several elements: strengthening primary and secondary education, encouraging private sector training, and improving the effectiveness and efficiency of public training.

2

Strengthening Primary and Secondary Education

Strengthening general education at the primary and secondary levels is the first priority for public policies to improve the productivity and flexibility of the work force. In addition to generating broad benefits to society, general education directly increases worker mobility and productivity and increases the access of the poor and socially disadvantaged groups to training and wage employment. In Peru, for example, workers with a complete secondary school education have a 50 percent greater chance of receiving in-service training than those with primary education alone. The 1990 World Bank policy paper on primary education summarizes the evidence on the contribution of education to development and emphasizes the importance of primary education as the foundation upon which further education and training can build. Training in specific skills is more effective when trainees have strong literacy, numeracy, and problem-solving skills. Primary and lower secondary education provide this foundation for many traditional crafts and trades. Primary education also helps improve the productivity and incomes of the poor in rural areas.

Especially in modern sector manufacturing and services, in which the conceptual content of jobs is already high and increasing further, the skills gained through good quality academic secondary education are important, not only to immediate productivity, but also to the ability to learn new skills throughout a career. Secondary education also improves the productivity of the self-employed. In Ibadan, Nigeria, 70 percent of the proprietors of urban informal sector firms engaged in radio and television repair have some secondary education, but only 17 percent of those engaged in soap making have any. Possession of a secondary certificate has also been shown to improve the chances of women obtaining wage employment.

In many nations educators have sought to improve the contribution of secondary education to the employability of graduates by replacing some of the academic program with prevocational courses oriented toward specific occupations to create "diversified" curricula. (Not included in this category are practical subjects offered for educational purposes without the expectation that they will improve a student's chances of getting a skilled job.) These courses typically occupy 20 percent or less of student course-work; often as little as six hours of vocational instruction is offered in a school week. Although it was heavily supported by the World Bank and other assistance agencies in the 1970s, this weak form of vocational schooling has had generally disappointing outcomes. Diversified schools have a higher cost per student, but they are not more effective than academic secondary education in enabling graduates to find wage jobs or work in the informal sector. There are three reasons for this. First, only low levels of vocational skills are developed, and they are acquired at the expense of the more general communication, science, and mathematics skills that employers value. Second, diversified programs do not materially affect the choices students make after they leave school. Students can continue on to higher education, and their aspirations remain in that direction. Finally, most countries have been unable to afford the competent teachers, equipment, and instructional materials needed to deliver the courses at an acceptable level of quality. Poor quality, in turn, confirms the suspicions of parents and students regarding the second-class status of prevocational courses and skilled employment.

The additional resources used for diversified curricula are better invested in improving learning achievement in, or access to, academic secondary education. If the quality is good, academic secondary education can contribute substantially to individual productivity and the ability to benefit from further training by developing students' capacity to learn, to solve conceptual problems, and to communicate. Improving the quality of secondary education is an enormous challenge to most developing countries, and meeting this challenge would make a significant contribution to economic and social development. Improving student achievement in mathematics and science is especially important to their understanding modern technologies and production processes.

There is increasing interest in "technology" education, which seeks to develop a more general understanding of applied science and mathematics in the context of technology and production, instead of developing occupationally specific skills. These courses do not require investment in the costly workshops and equipment that training pro-

grams need to replicate the work environment. Although technology education programs are too recent to have been evaluated, experimentation may be warranted. A significant constraint on large-scale implementation would be the need for extensive teacher training.

3

Encouraging Private Sector Training

Private sector training can be expanded and improved by creating a favorable policy environment. To achieve this, governments can reduce distortions in incentives and establish compensatory public policies for subsidizing or providing training to ease the transition and to serve as second-best policies when incentives cannot be improved. Positive policies to stimulate and develop employer training and to reduce the regulation of private training institutions can accelerate the response of the private sector to a changing policy environment.

Creating a Favorable Policy Environment

Good information on employment and wages is a prerequisite for the efficient functioning of labor markets and socially efficient investment in training. For example, scarce skills will command higher wages, creating incentives to individuals to invest in acquiring these skills. However, governments pursue social and economic goals through policy interventions that affect employment and relative wages, and thus distort the signals to individuals, employers, and trainers about the amount and type of training that society needs.

Distortions take a variety of forms. Policies that guarantee public employment artificially increase the demand for the formal education and training qualifications that are required for entry to public sector jobs. Excessive social security charges on wages raise the costs of labor generally, reducing both employment and training. Government intervention in setting wages can result in artificial prices for different skills that do not necessarily reflect their value in production. Policies that compress the differences in wages for workers with different levels of skill will reduce incentives to acquire skills. High minimum wages make

employers less willing to offer the entry-level training that would be otherwise provided if appropriately lower "training wages" could be paid, enabling employers to shift the cost of training in transferable skills onto trainees. These policies shift individual demand for general skills training from employer-provided training to preemployment training, usually at public expense. In many countries weak mechanisms for labor placement and inadequate labor market information systems compound the negative effects of policy distortions on the demand for training.

Distortions are greater in inward-focused economies than in export-oriented ones, because governments often intervene in labor and capital markets to protect domestic producers from external competition. These policies usually favor capital-intensive development, which has slowed overall employment growth in the modern sector and often has reduced the demand for certain middle-level skills. In such cases the major source of employment growth is provided by the informal sector. Preemployment skills training oriented to the needs of the modern sector is often not appropriate for informal sector jobs, with the result that training efficiency, as reflected in training-related employment, is low.

Reducing distortions in incentives

An appropriate modification of the policies that create these distortions would improve the accuracy of signals of skill needs, increase private investment in training, and thus increase the efficiency of a nation's overall training effort. However, the effect of economic and social policies on signals and incentives to train is complex and not always well understood. Better integration of economic and human resources policy analysis is needed if planners are to understand how the wider costs and benefits of macroeconomic and social policies impinge on training markets. The correction of policy-induced market imperfections may prove, on balance, to be socially undesirable or politically unacceptable. In such cases, integration enables planners to design training policies to offset distorted signals and incentives.

Designing public training policies

Market imperfections represent one of four reasons for public intervention in training. The other reasons include capturing external benefits, offsetting weak private training capacity, and improving equity (Table 1).

COMPENSATING FOR MARKET DISTORTIONS. Training subsidies may be required to compensate for distortions in market signals and incentives.

Table 1. Efficiency Rationales for Public Training Policy

Reason for state intervention	*Finance training*	*Provide training*		*Complementary policies*[a]
Market imperfections	A	N	P	Deal with source of market imperfections
External benefits of training	P	N	—	—
Weak private training capacity	N	A/P	P	Build private training capacity
Equity	A	N	P	Reduce subsidies to trainee peer groups; introduce selective scholarships

Note: P = preferred policy approach, A = acceptable (next-best) approach, N = not justified.

a. Policies may not be feasible.

For example, if governments wish to avoid the disincentive effects of minimum wage legislation and repeal of this legislation is not feasible, some legislative compromise, such as exempting trainee wages from the minimum, may be possible. In the absence of such arrangements, subsidizing apprenticeship wages is a second-best measure. Social policy favoring narrow differences between the wages of skilled and unskilled workers reduces individual incentives to acquire skills. In this situation building new schools and training capacity will only waste resources, unless subsidies reduce the private cost of training and increase the net benefits of skills development to individuals and enterprises. If employment in the modern sector is not growing because of distortions in factor prices that encourage capital-intensive development, the placement of graduates will suffer, potential trainees will have less incentive to enroll, and the capacity of the training system will be underused. Consolidating training capacity would be warranted under these conditions, along with emphasis on training for the informal sector.

Individuals have difficulty borrowing in commercial financial markets to finance training because human capital is rarely accepted as collateral. The comparatively high levels of uncertainty associated with the returns to investment in training further reduce the bankability of skills development. The longer the training, the greater the cost and the higher the risk. These factors can lead individuals to underinvest in training. Individual training loans address the problem of imperfect capital markets, but they do little to reduce the risk factor and can be

difficult to administer. Other compensatory policies, such as subsidizing training costs, may thus be needed.

CAPTURING EXTERNAL BENEFITS. Individuals and employers invest in training because they expect higher earnings, productivity, or profits; they will not capture, and therefore do not take account of, any external benefits that may accrue from a better trained work force, such as a more flexible and competitive economy that can respond to new economic opportunities. Thus, from society's point of view, individuals and employers may not invest in enough training. The externality case is particularly persuasive for retraining dislocated workers. Society captures the largest share of the benefits of a more efficient economy, and subsidization of programs to offset the costs of labor mobility to workers is fully justified.

However, the relative importance of external benefits is typically lower for preemployment training than for general education. Thus in most cases external benefits alone can justify only a very partial public subsidy of training to ensure an adequate supply of skills. On externality grounds, public subsidy of preemployment training is most appropriate for broader skills that increase worker flexibility and for skills that support specific public investment strategies, such as expansion of a particular industry. These conditions are most applicable for higher technical education, which incorporates a relatively greater amount of conceptual and theoretical content that improves worker flexibility.

OFFSETTING WEAK PRIVATE TRAINING CAPACITY. Although market imperfections and external benefits can justify public financial support of training, they do not establish a rationale for government to provide the training. Government provision may be economically justified, however, where the training capacity of private enterprise is weak and where private training institutions are underdeveloped. This argument weakens as private and enterprise training capacity develops. When the public sector provides training, it should also attempt to build and strengthen employer and private training capacity.

IMPROVING EQUITY. Public subsidization of training on equity grounds for the poor, women, and minorities may be justified when carefully targeted to ensure that only those in need benefit. However, blanket subsidization or public provision of preemployment vocational schooling or training on the grounds that these programs generally serve the poor or underprivileged is likely to be both wasteful and inefficient. Where access to secondary education is low generally, a large proportion

of the students in vocational programs are not poor. The issue in vocational education is then really one of parity with students receiving subsidized academic secondary education. The preferred policy is to reduce subsidies to both relatively privileged groups, but, if this is not possible, subsidies equivalent to those provided to academic secondary education may be required for vocational programs.

Responding to varying economic contexts

The economic environments in which training policies are developed vary widely, and this will require different patterns of transitional compensatory policies in different countries. The skill needs and incentives necessary for private investment in training in outwardly oriented industrializing countries, for example, will be different than those of largely agricultural societies, those with small modern sectors, and those with high levels of domestic protection. In industrializing countries technological change and the need to respond to international competition increase the need for higher technical skills, market incentives for private and employer investment in training are more efficient, and thus private sector training can be more rapidly and effectively expanded. In the other cases modern sector employment is limited, a diverse set of training activities is needed for rural and informal sector employment, and employer and private training capacity is likely to be weak. Governments must take an active role through compensatory financing and provision of training, but the range of training needs and the small scale of operation will require high levels of flexibility in policy implementation and great efficiency, given resource constraints and pressing needs to invest in basic education.

As development proceeds, governments will need to modify training policies. As economic policies change, patterns of incentives for private training will change as well. Economic growth will shift the patterns of skills needed in the economy. Private sector training capability will improve. This dynamic context for public training policy reinforces the need for a high level of integration between economic and training policy and planning processes to enable training to adjust to changing economic environments.

Strengthening Employer Training

There is a strong case for the cost-effectiveness of employer training in the modern sector, whether public or private. The match between skills demand and training supply is readily made. Firms play a central role

Box 3. Training Subsidies in Singapore

With a low rate of population growth and rapid industrial expansion, Singapore developed a strategy to improve productivity by raising the level of technology in production, reducing low-paid unskilled jobs, and upgrading the skills of the work force. A government program to reimburse company training expenses, administered by the Economic Development Board, is a main component of the strategy.

The Skills Development Fund was established with a levy on the wages of unskilled workers to upgrade the work force through training grants to enterprises. The training grant scheme has been successful by most measures. By 1985 the fund had awarded grants to 23,000 applicants. Training reached 240,000 workers, or 21 percent of the labor force. The earliest impact was found mostly in larger firms, but aggressive efforts to make small firms aware of external training courses and to provide support for industry associations has increased its impact on smaller firms (Table B-3).

The steady growth in the use of the fund can in part be attributed to an incremental strategy of implementation. In the first two years, efforts were focused on creating awareness of the fund among employers, with ad hoc reimbursement of approved courses. In the second stage, priority was given to in-plant training, and reimbursement increased to 90 percent of costs as an additional incentive. The third stage encouraged the development of corporate training plans by paying grants in advance of expenses, thus reducing interest costs to firms. In the current stage, the focus is on smaller enterprises and training quality.

Source: Eng Fong and Salome (1987) and Skills Development Fund (1989).

Table B-3. Profile of Successful Applicants to the Singapore Skills Development Fund, Fiscal 1986 and 1988

	Fiscal 1986		*Fiscal 1988*	
Number of employees	*Number of firms that applied*	*Percentage that received grants*	*Number of firms that applied*	*Percentage that received grants*
1–10	50,405	2.2	60,536	8.0
11–49	9,862	22.8	10,287	53.0
50–99	1,183	66.4	1,319	100.0
100–199	603	87.0	616	100.0
200–499	367	99.7	358	100.0
500+	217	100.0	224	100.0

in in-service training. Because most technological innovation enters developing countries through enterprises, the equipment and technical information needed to develop new skills is often found in firms. Informal learning on the job is central to employer training. A continuous process, it can be stimulated and intensified where employers recognize and reward improved productivity. But informal learning is often insufficient, and employers supplement it by training workers on entry through formal on-the-job training, organized instructional programs provided by the firm or purchased from external training providers, and regulated apprenticeship.

Information about opportunities and programs for training in human resource management can help expand and improve the quality of training provided by private employers. Public subsidies for private employer training are likely to be most efficient when they are based on a clear economic justification. Market distortions may justify subsidized trainee wages or grants to offset training costs. Partial subsidies may also be justified where the general skills component of training is high, which raises the risk of lost employer investment; such subsidies may in fact be most needed in highly competitive labor markets. When the training expertise of employers is weak, subsidies combined with information on training opportunities and technical assistance can stimulate training, as happened in Singapore (Box 3).

However, some larger firms may merely repackage their existing training programs to qualify for subsidies, with no net increase in provision or training quality. Protection against repackaging requires administrative control and monitoring, which may be costly where training is spread across many firms. If the procedures are too cumbersome, many firms will not participate. Tax exemptions primarily benefit large enterprises in the more dynamic parts of the economy and may represent a windfall gain to the firm and a needless expense for the government.

Reimbursement for training at external training institutes can be more easily monitored and permits smaller firms to take advantage of scale economies in training costs. In general the effectiveness of training subsidies can be improved by targeting them on new and improved training in designated occupations and by making eligibility criteria flexible so that it is easy for firms to qualify programs of varying duration. This is especially important where subsidies are financed from payroll levies in order to enable firms of different sizes to obtain benefits in return for their levy contribution.

Subsidization of private employer training should be a transitional policy. As the training capacity of employers develops and market

distortions ease, firms should be expected to finance their own training. Enterprise associations have been successful in establishing training operations in many countries and have been especially helpful in enabling small firms to achieve scale economies through cooperative training. Governments can help to establish these associations and training operations by offering technical assistance and start-up grants.

Improving Traditional Apprenticeship

Historically, in many parts of the world small enterprises sold training as well as products. Apprentices paid masters a fee, in cash or in labor, in return for instruction in a trade. When demand for their product was low, masters made training a major activity. The tradition continues in North and West Africa and to a lesser extent in Latin America. Through apprenticeship individuals can acquire the broad range of practical and business skills necessary for self-employment. Rising levels of education among informal sector workers are contributing to improved productivity. Untouched by minimum wage legislation and labor codes, apprentices finance their own training, a fact that is gaining significance in an era of limited public resources.

Traditional apprenticeship can have a positive effect on employment and earnings, and poor and rural individuals can benefit. However, masters mostly pass on their skills and knowledge to apprentices; they rarely create new knowledge. The absence of any formal instruction favors acquisition of practical skills vital to production, sales, and management but limits theoretical understanding. Apprentices learn enough for commercial survival but not enough to improve productivity significantly. The effect of apprenticeships on the economy is limited by the number of masters willing to take on apprentices and by the number of apprentices that masters are able to absorb effectively. Social customs can restrict access of women and minorities to certain, often more profitable, trades.

Great caution should be exercised in considering interventions into the traditional apprenticeship system. Left alone, the system meets the overwhelming share of training needs in the informal sector of many countries, at no cost to the government. Rising levels of education suggest that governments can improve the theoretical knowledge of masters and apprentices through correspondence courses or perhaps by evening or weekend classes in public training institutes. Technical information services and vocational textbooks are further options. But these interventions must not upset the traditional master-apprentice relationship that is central to the effectiveness of the system.

Reducing the Regulation of Private Training

Governments often overlook private training when they assess training capacity. In many countries, however, private schools and training centers—operated either as nonprofit organizations or as for-profit firms ("proprietary" training)—provide a large share of skill formation, often

Box 4. Private Training Markets in Zimbabwe

With more than a million workers in wage employment, Zimbabwe has one of the largest markets for modern sector skills training in Sub-Saharan Africa. Growth in the sector has been constrained by macroeconomic factors, and employment growth has been slow, thus reducing the efficiency of public training. Only 1,000 apprentices could be placed in 1986 out of the 110,000 that applied. It has been difficult to pay the salaries needed to retain qualified instructors in technical colleges and the polytechnic. A rebate scheme operated by the Zimbabwe Manpower Development Fund (ZIMDEF) to encourage training by employers has yet to function smoothly. In 1987 only 77 firms received rebates, covering the training of 640 employees.

At the same time a vibrant private training market has developed, driven by the increasingly high levels of general education and traditions of self-improvement through education and training. Correspondence colleges enroll approximately 200,000 persons, several thousand of whom are enrolled in technical fields, such as electronic engineering, and even more in commercial and banking fields, stimulated by reimbursement of fees to individuals by ZIMDEF and by employers. In addition more than 40 private colleges offer general, commercial, and some technical courses during the day and in the evening, which enroll several thousand working students willing to pay for their instruction. The colleges have also ventured into the in-service upgrading market and successfully offer intensive courses in specific business skills to more than 1,000 persons employed in 350 firms. A range of private firms have entered the management training market, including training consulting and management firms, international accounting companies, and enterprises with excess training capacity.

The government polytechnic has also entered the private market and provides technical and engineering courses in the evenings for a fee. Enrolling 600 to 700 students at a time, these courses generate revenues sufficient to pay high salaries for well-qualified, part-time instructors and to earn a profit of 20 percent.

Source: King (1990).

in dynamic skill markets, such as in Zimbabwe (Box 4). Most private vocational schools, colleges, and training centers in developing countries offer courses in commercial and business occupations, for which capital costs are comparatively low and instructors are relatively plentiful.

Private training has much to recommend it. The use of private training capacity can often be improved simply by taking private provision into account in planning for skills supply. Freedom from civil service salary regulations and ministry of education curriculum control gives private institutions more flexibility to respond to changing demands for skills. Where information about costs and training outcomes is available to consumers, private institutions are held accountable for price and quality in the market place. In practice, consumers often find it difficult to assess the quality of private training relative to its price, with the result that the quality of private training varies considerably. Some of it is undoubtedly low, with problems of deceptive advertising and exploitation. But many private technical schools, both proprietary and operated by churches or nongovernmental organizations (NGOs), produce superior students who are sought after by employers.

Private schools flourish when labor markets reward private spending on training and when schools are free to operate with minimal regulation. Good private schools increase the exposure of public institutions to competitive forces, providing a stimulus for improved efficiency and quality. But private institutions are often subject to strict government regulations, the most onerous of which is the control of prices. Ceilings on tuition fees restrict competition with subsidized public institutions and prevent private schools from developing the resources needed to respond to newly emerging training needs. Regulation should be limited to protecting consumers through public information on the quality and stability of the proprietary training institutions, as well as on the relevance of the courses to labor market needs. A formal and continuing process of accreditation is a good way to establish minimal standards of quality. Associations of private schools can be encouraged to establish accreditation standards and requirements for public information as conditions of membership. Governments can also help private institutions overcome imperfections in capital markets through subsidized loan programs, as was done for private technical junior colleges in Korea.

4

Improving Effectiveness and Efficiency in Public Training

Designing public training policies to compensate for weaknesses in private sector training in a given country can establish a flexible and dynamic framework for public financing and provision of training. It enables policymakers to avoid overexpanding vocational education and training in order to reduce youth unemployment, to attract new capital investment, to change the aspirations of youth, or to serve academically less able students where secondary enrollments are low.

Governments will need to provide or subsidize training, although the nature of and balance between these two interventions will vary across economies. Improving the effectiveness and efficiency of public training is thus a high priority. Five measures can help: planning needs to be better oriented to labor markets; the responsiveness of public training institutions to market forces can be improved both for preemployment training and for job training for the unemployed; efficiency in the use of training resources can be improved by better institutional and instructional practice; strong institutional capacity for policy implementation is needed not only to make these measures effective, but also to manage the complex tasks of creating a more favorable policy environment for private training; and training finance needs to be diversified to increase the contributions of employers and workers to ensure the adequate and stable finance needed.

Improving Market Orientation in Planning

Meeting the demand for skills training efficiently requires that planning systems identify and respond quickly to changing employment opportunities and skills demand. It is essential to develop accurate sources of information on skill needs and training capacity in enterprises and

private training institutions, as well as in public agencies. Historically, fixed-coefficient manpower requirement forecasting has been the main planning method for skills training, but it is highly inaccurate and inflexible (see Box 1 in Chapter 1). New approaches are needed. Patterns of economic change and growth must be interpreted to identify skills that require relatively extended periods of study and that will be strategically important to the economy in the medium term. Better monitoring of labor markets to identify incentives for training and shorter-term changes in skills demands, combined with evaluation of training costs and outcomes, is needed to improve management of the training to respond to short-term training needs.

Higher technical skills are more likely to be strategically important to growth where economies are changing rapidly. A current example is the need for accounting technicians in Eastern European countries moving from command to market economies. The kinds and levels of skills likely to be needed depend on a nation's comparative advantage, recent record of growth in different industries, and strategies for economic expansion and technology development. Nations giving emphasis to growth in food processing will have different skill needs than those giving primary attention to expansion of heavy manufacturing, electronic assembly, or clothing manufacture.

Using information on placement and unemployment rates by skill levels, economic returns to different levels of training, current vacancy rates, and employer projections of employment needs, planners can identify skilled occupations in which employment opportunities are likely to expand in the medium term. Expansion of training supply in these areas is warranted and often can be balanced by cutbacks in skill levels where demand has slowed and where there is no reason to anticipate dramatic upswings. This is essentially a process of informed judgement. Planning procedures of this nature have been established in Brazil, Colombia, and Malaysia. To meet anticipated demand, the first recourse should be to expand employer and private training. Expansion of public training may be needed, but it should generally be held well below anticipated demand for skills in recognition of the ability of employers and private trainers to meet any excess skill needs.

For skills that take less time to develop, planning should focus on improving information for efficient management of training supply. Data on vacancy rates, unemployment by skill level, and trends in wages and employment provide evidence of market flexibility and efficiency in adjusting to economic change. Analysis should identify labor market rigidities that impede flexibility and distort the signals to individuals and enterprises affecting skills development. Structural shifts in wages

and employment suggest the demand for, and supply of, skills. Monitoring the costs and results of training complements labor market analysis. Studies of graduate employment and wages by skill level, institutional capacity utilization rates, and ratios of applications to admissions can produce useful information about the market demand for skills training. Cost and tracer studies can yield estimates of the social and private returns to alternative modes of training, thus strengthening the use of efficiency criteria in determining training supply. Small-scale surveys of enterprises in local labor markets can provide information on wage and earnings profiles for different types of skills and offer qualitative assessments of different kinds of skills training. Enterprises can also provide information on the effects of policy-induced barriers on employment and on other factors that influence the demand for specific skills.

Because the success of labor market analysis depends on the availability of timely and accurate information on the market, developing a labor market information system is a high priority. It not only guides planning for training but also alerts policymakers to labor market inefficiencies, informs career counseling, and facilitates job placement.

More directly, simply building good links between training institutions and enterprises can improve the flow of information on the demand for skills and the success of training in meeting the skill standards of employers. Creating a permanent pipeline of market information on the demand for skills and their supply is crucial to improving training quality and efficiency. Among the more effective mechanisms are advisory and curriculum development committees with members representing both employers and the schools, vocational guidance and placement activities, surveys of local employers, and training strategies that include periodic, supervised placement of trainees in work experience. Forging links with rural and informal sector employment requires the development of a base of information on clients, markets, and product opportunities.

Improving Institutional Responsiveness to Market Forces

The flexibility of public training systems needs to be substantially improved if they are to be respond efficiently to economic change. Flexibility is improved when training is separated from education, institutions specialize to meet the skill needs of different markets, training institutions have the authority to adjust training to local labor markets and are accountable for employment outcomes, and training quality and outcomes are satisfactory. These are all characteristics of the most successful vocational training institutes in Latin America (Box 5). The Latin Amer-

Box 5. The Latin American Model of Vocational Training

In 1987 vocational training institutes (VTIs) in 12 Latin American countries enrolled more than 3 million persons, equivalent to 37 percent of total secondary school enrollments in the same countries. VTIs are notable for their dynamic relations with employers, high-quality training, and responsiveness to rapidly changing and competitive environments.

VTIs are independent of formal education systems; they are financed by levies on enterprise payrolls, and they are governed by representatives of workers, employers, and the state. Autonomy has facilitated flexibility in responding to the needs of employers, the stability of payroll tax financing has nurtured autonomy and training quality, and tripartite governance has strengthened accountability. VTIs specialize to serve specific subsectors and industries, such as textiles and petrochemicals, often with financial support from industry associations.

VTIs have diversified their services to meet changing needs. In-service upgrading training now accounts for two-thirds of enrollments. Training is delivered on the premises of employers, and assistance is provided to develop the training capacity of large and smaller employers. Management consulting and support for the introduction and adaptation of new technologies is provided under contract.

The payroll tax financing scheme is changing. In Brazil employers can hold back portions of the levy to use in direct contracting for services, thus improving accountability. In Chile the levy-based subsidy of the VTIs has been replaced by a system of competitive contracting for services from the public and private sectors. In Colombia policymakers are considering eliminating the payroll levy and requiring the VTI to compete for public funding after 20 years of successful institutional development.

Source: CINTERFOR/ILO (1991).

ican and other similar experiences demonstrate that management processes and structures, rather than ownership, are the key determinants of success.

Separating education and training

Education and training place different demands on systems, institutions, instructors, and administrators. Both are essential to productivity, yet they are difficult to administer effectively within the same institutional framework. Training is more effective when delivered by institutions with a degree of autonomy and flexibility that is difficult to achieve in formal education systems. Clear separation of education and training

provides advantages to both, thus enabling educators to concentrate on their essential mission and trainers to develop the specialized technical and managerial capacity needed to link training more closely to the economy.

One way to separate training and education is to concentrate skills training in institutions outside of the education ministry. This approach is most clearly needed in training skilled workers for wage or self-employment. Specialized technical schools oriented to wage employment can be run within the ministry of education, if bureaucratic procedures can be modified to give programs the flexibility needed. Another strategy for education ministries is to deliver vocational training intensively at the end of the secondary cycle. This will enable students to choose among occupations a year or less before they seek employment, when they are more mature and when they can choose an occupation knowing the current state of the labor market. In general, enabling students to choose a vocational course after completing the highest level of general education possible improves educational equity, student motivation, and worker flexibility.

Specializing to meet skill needs

Responsiveness improves when training institutions develop specialized expertise for, and institutional links with, different skill markets. Of central importance is establishing effective information links with employers as the basis for curriculum adjustment, staff development, enrollment planning, vocational guidance, and student placement.

Institutions located in industrial areas have a natural advantage in serving those industries. Specializing in clusters of related occupations or in sectors of the economy is also possible and depends largely on the size of markets and the capacity of individual institutions. Specialization is an option only when modern sector employment is large enough to create sufficient specialized demand. In smaller economies institutions must serve several markets to generate the training business needed to achieve reasonable scale economies in their operations.

Specialization in higher technical skills that are needed in strategically important growth areas of the economy is an important role for selected postsecondary technical institutions. By definition, both the technology and training expertise for these skills are found primarily in industry. Dual training systems that take advantage of the capacity of schools and colleges to provide basic technical education courses, complemented by more specific training in enterprises, are an efficient way to use the expertise of firms.

Training skilled workers in core occupations that are in demand throughout the economy can be a viable role for vocational schools that have skills training as their principal objective. Such core occupations include secretary, bookkeeper, motor mechanic, and maintenance electrician. To be effective, however, nonbureaucratic management processes must be established, and schools must be able to hire qualified instructors, to monitor training outcomes, and to adjust enrollments and courses as demand changes.

Close links with employment opportunities, including programs to support self-employment and small business development, are especially important in retraining dislocated workers. In addition experience in industrial countries shows that training is effective when integrated with other positive measures (Box 6). The keys to responsiveness in retraining the unemployed are identifying local employment opportunities, cooperating with employers, and using existing training capacity through competitive contracting. Accountability can be improved by linking funding to placement outcomes. An example of this approach is found in Chile, where the National Training and Employment Service (SENCE) uses a network of 400 authorized public and private training organizations to provide training to unemployed adults and youth through a program of grants and fellowships. Both trainees and opportunities for wage and self-employment are identified at the municipal level. In 1987 the program trained more than 9,000 unemployed workers.

Whether or not developing countries can or should adopt these approaches depends on several factors, including the availability of skilled

Box 6. Elements of Employment Programs

The benefits of successful employment training programs are gained only when retrained workers are placed in employment. Experience in OECD countries shows that this requires programs to create jobs, information on labor markets, subsidization of the costs of worker relocation, and effective counseling and placement services. Programs to maintain workers' income during the transition period are essential. Integrated programs are more effective where levels of education are high and where there are few cultural or financial barriers to worker mobility. These active measures, together with retraining, can be expensive: in Sweden expenditures on positive labor market policies represent approximately 2 percent of gross domestic product.

jobs and the capacity to finance expensive programs. In many cases the costs of supporting income maintenance programs and of developing the comprehensive labor market information and placement systems needed to link training with employment will be prohibitive. The institutional development required can be time consuming. However, large national programs are not the only approach to training to facilitate economic change. In Sierra Leone and Uruguay, for example, carefully focused NGO training programs have cooperated successfully with employers to train and place the unemployed and to train workers for new occupations and positions whose jobs are threatened by restructuring within firms. Where the supply of labor greatly exceeds demand, these programs are likely to have only a marginal effect on total unemployment in the short run.

Increasing institutional authority and accountability

Effective response to employment opportunities will require a higher level of authority at the institutional (training center or technical school) level to respond to local employment opportunities and training needs. Specialized professional staff are needed to establish relations with employers, to develop curricula and in-service training for instructors, and to provide vocational counseling services. Accountability for results and the use of resources can be improved by monitoring and inspection systems and by building incentives for job placement and other indicators of outcomes into budget allocations. Local employer councils can be an important source of feedback on institutional performance. Consistently poor performance caused by an imbalance in the supply of, and demand for, skills is a signal to review and modify curricula and enrollment patterns.

Experience in a wide range of countries (for example Brazil, Colombia, and Jordan) shows that public training centers outside the education system have had more success than schools in becoming flexible and efficient. Not tied to rigid degree requirements, they have more freedom to develop courses of varying length, to minimize training duration, to offer evening courses, to provide training services to enterprises, and to use part-time instructors. Because of these advantages, centers should generally be chosen to expand public training of skilled workers. Their advantages also can enable them to provide technical advice to improve productivity in small and medium-size enterprises, to respond quickly to needs for work force retraining, and to provide training as a complement to new investment.

Improving training outcomes

Developing vocational and technical skills costs much more than general education, and inadequate budgets lead to inadequate outcomes. If skills are not developed, however, productivity will not increase, and the benefits to society and individuals will not materialize. Meeting the recurrent costs of paying well-qualified managers and instructors and providing up-to-date teaching materials and maintenance are essential to achieving good training outcomes.

PAYING ADEQUATE SALARIES. Professional instructors with good technical and pedagogical skills are central to quality. Most countries have had difficulty paying salaries high enough to attract and retain such staff, especially in occupations in which demand from the private sector is high—and in which the need for training is the greatest. In Egypt salaries are so low that vocational teachers must hold two or more jobs, often at schools that are distant from each other. Inadequate pay reduces the quality of teaching and also shows students how little society values the trade they are learning.

Rigid civil service salary regulations and constrained budgets erect significant barriers to better teaching. If the government cannot afford to pay market rates to training instructors and managers, it should at least let wages rise for those whose occupations are in greatest demand, thus allowing for market scarcity in differentiated salary systems. Some success has been achieved by offering improved benefit packages, such as providing housing or, as in Korea, exempting vocational instructors from military service. A further option is to use part-time instructors drawn from enterprises, a strategy that has been successful in several countries, including Mexico.

ENSURING THE AVAILABILITY OF MATERIALS AND MAINTENANCE. Textbooks, practice materials for workshops, and other instructional materials are essential to good training. Developing materials for vocational training can be expensive because of the need for frequent revision in rapidly changing occupations. Materials for modern sector occupations can be adapted from industrial country models. In new and rapidly changing occupations, close cooperation with employers is needed to adapt existing materials. Training materials for self-employment generally must be developed to incorporate skills that are specific to local products and technologies and that include business management skills that fit the local regulatory and market environment.

There is considerable interest in the potential of various educational technologies to make up for the lack of skilled instructors and to reduce the cost per student. Although experimentation to test cost-effectiveness is warranted, there are reasons to be cautious. Videotape technology is being increasingly used as hardware costs fall and local production of software to demonstrate complex manipulation skills becomes more feasible. However, more advanced technologies—such as computer-aided instruction—require high rates of use to become cost-effective. In industrial countries this has been achieved only in large modern enterprises and in training institutions that deliver individualized instruction in highly flexible environments. However, in industrial middle-income countries, where these conditions exist, advanced technologies may provide a way to partially overcome shortages of highly skilled instructors in technologically changing occupations.

Adequate maintenance of facilities and equipment is essential for good training. Inadequate budgets and lack of foreign exchange have combined with low levels of incentives to managers and instructors to reduce the quality of maintenance in many countries. Dual training systems that rely most heavily on the equipment of employers offer a practical way to minimize maintenance costs to training institutions. Where this is not possible, adequate funding and improved staff accountability can improve the level of maintenance.

Using Training Resources Efficiently

Improving the flexibility of training in currently underfinanced public institutions will be costly. Ways must be found to deliver instruction at lower cost. A first option in countries where public capacity is underused is consolidation into fewer, better-quality institutions. Lower costs per graduate can be achieved by reducing the duration of instruction and by improving the utilization of facilities and equipment.

Consolidation

Consolidation can be achieved by converting vocational schools to lower-cost general curricula or by turning schools over to organizations with the information and financial resources needed for effective operation—such as enterprises, enterprise associations, or NGOs. Consolidation is particularly attractive where the supply of skilled workers from poorly financed institutions greatly exceeds effective employment demand or where training institutions are too small to achieve scale economies.

Improving utilization of training capacity

Shorter, more intensive training periods should be considered because they reduce the opportunity costs to trainees of being in training instead of at work, and they enable training institutions to achieve a higher rate of use of equipment, facilities, and expensive instructors. The same number of course hours provided on a part-time basis over three years in a vocational school can be delivered intensively in one year or less after school is completed. Training duration can be reduced as well through occupational analysis to distinguish the skills needed for entry into a given occupation from those best learned on the job.

Competency-based, modular curricula also increase efficiency by enabling trainees to exit and enter training based on acquired skills and to maintain a record of achievement that facilitates intermittent study along with employment, including evening courses. Modular curriculum structures are fundamental to individualized instruction, which permits enrollment and labor market entry at any time during the school year (Box 7).

Building Capacity for Policy Implementation

Implementing public training policy is a complex task that requires considerable professional and managerial capacity. To respond to the needs of the economy demands a degree of freedom from short-term bureaucratic control that is difficult to achieve in line ministries. National training authorities (NTAs) have been effective in this respect in several countries. The structure of successful organizations varies considerably, but the key elements in effectiveness are governance that involves employers, worker organizations, and government; adequate and stable financing; the ability to use resources flexibly; and a high level of professional capability. In addition to managing training institutions, NTAs can play key roles in monitoring labor markets and training costs and outcomes, in planning, in providing professional services, in establishing outcome standards, in organizing temporary training systems in response to worker dislocation, and in developing private training capacity.

Training funds that enable NTAs to make grants (or loans) to training institutions in accordance with established criteria can provide an effective mechanism for adjusting training response to meet changing needs, which facilitates flexible use of resources for curriculum adjustment, staff development, new equipment, and, on occasion, renovated or new facilities. Organizing training interventions to facilitate economic

Box 7. Individualized Instruction in the Euvaldo Lodi School

The Euvaldo Lodi School in Rio de Janiero is one of the network of training centers operated by the National Industrial Training Service (SENAI). Training is based on periodic analysis of market demand for skills and occupational analysis of different occupations in surrounding industries. Learning materials are organized into modules of work sheets and activities that combine theory and practice for a defined series of tasks. Student skills are evaluated after each module. The final stage of learning is a period of supervised training within enterprises.

Beginning in 1965, the Euvaldo Lodi School sought to address three problems by individualizing this methodology. First, the school wanted to be able to provide training to students entering with different skill levels and aptitudes. Second, it wanted a curriculum structure that would be highly flexible in the face of rapidly changing labor markets. Third, it wanted to reduce dropout rates and the consequent cost of unused capacity.

This was accomplished by reducing the interdependence between modules. Students can enroll at any time during the year and are tested for placement in the series of modules. They then complete modules at their own pace and are tested for competency on completion. No lectures are given; the instructor provides only guidance and testing. Because enrollments are determined by the number of places in workshops, students are admitted continuously as others complete their study or drop out.

These changes have reduced the time required to complete training by 45 to 75 percent, which significantly increases utilization rates. Faster completers increase utilization rates, while the system provides strong instructional support for slower students. The school operates year-round, with no holidays, thus matching the rhythm of the factory. Completers can enter the labor market throughout the year, and intake and output can be controlled continuously in response to information on student placement and employment opportunities.

Source: Oliveira and Castro (1988).

change often requires similar support. Experiments with new training approaches, such as those being carried out by NGOs for the rural or urban informal sector, may also need government subsidies. Training funds managed by NTAs have proved useful in this regard in Côte d'Ivoire, Chile, Malawi, Mexico, and Singapore. Funding should be available to both public and private training providers. Accountability

can be enforced through contracts and supervision. Broadly representative oversight of the fund by the public and private sectors, workers, and NGOs can help avoid problems in fund administration.

Diversifying the Sources of Finance

The principal objectives of training finance policy in developing countries should be to ensure both the stability of funding needed to develop sustainable institutional capacity and the level of financing needed to improve public training. Government budgetary financing has often been inadequate for both objectives. The 1990 World Bank policy paper on primary education stressed the need to increase public funding in many countries for primary education, given the significant exte.nalities and the important equity considerations associated with education at that level. The case for public support for vocational education and training is much less strong. Nonetheless the external social benefits of training will often justify government financing of at least such central activities as policy, planning, and quality control, as we'll as for skills strategic to growth strategies. This support will often be limited, and governments should seek to diversify sources of financing for training because of budget constraints and in the interest of efficiency. The costs of training should be increasingly shouldered by the employers and workers who receive its benefits. Encouraging enterprises and private institutions to provide training would help move in this direction. Additional options include payroll levies on enterprises and direct cost recovery from employers and trainees.

Payroll levies

In middle-income countries payroll levies have provided a sheltered source of resources for training, thus offering a way to mobilize funds otherwise unavailable to the public sector. They have proved to be a particularly useful device for building training institutions, especially nationa' training agencies, and they have strengthened employer involvement. With some variation, there are basically two major types of levy schemes for financing training in developing countries, and they reflect rather different objectives. First introduced in Brazil in the early 1940s, the Latin American model generates revenues to finance training by the public sector. The alternative is the levy-grant, or rebate, scheme that reimburses private enterprises for the cost of training. It is the preferred form of payroll levy scheme in other continents.

Payroll taxes are widely believed to be borne by enterprises, but this may not be the case in fact. Although this issue has not been examined empirically for developing countries, much of the incidence of payroll levies in industrial countries falls on labor in the form of lower real wages. This is likely to occur in developing countries as well. This fact suggests that workers finance their own in-service training, which makes payroll levies a form of benefit taxation. For younger workers preemployment training is financed before benefits are received, but is paid for later. Payroll levies are an equitable means of financing training to the extent that the workers benefit by receiving training rather than funds being diverted to other purposes.

Although such schemes have proved popular and are largely successful, they are not free of criticism. They tend to raise the price of labor relative to capital. By encouraging a shift toward more capital-intensive techniques of production, they may inhibit employment growth. Such effects are unlikely to be pronounced, however, given the moderate tax rate levels (typically 1 to 2 percent) and the possibility of shifting the incidence of the tax to workers or to consumers.

Payroll levies may constitute an oversheltered source of funding, leading to unspent surpluses, inefficiencies, and top-heavy, bureaucratic administrations; alternatively, surpluses may lead to the use of payroll levy funds for purposes other than training, thus considerably weakening the benefits of imposing them. SENA, the Colombian national training authority, is financed by a 2 percent payroll levy established in 1957 and has built up surpluses in recent years, which is encouraging the gradual expansion of training into other areas such as agriculture, construction, and self-employment training, only loosely tied to the firms (and workers) that pay the levy.

To ensure that the people who pay the levies receive the training benefits from them, the payroll levy system should be so designed that levies are subject to periodic review to guard against the accumulation of surpluses, levies vary across sector and industry to reflect differing skill composition of the labor force and training needs, training authorities do not venture into extraneous activities, the training services and courses provided are broadly based to reflect the range of the industry's need, and enterprise training is developed.

The desirability of using payroll taxes to finance training, compared with the other alternatives, is likely to be contingent upon the stage of a country's development. Low-income developing countries may have only limited access to broadly based taxes and tend to rely instead on trade taxes and specific excises. Where the financing options of govern-

ments are limited, payroll taxes remain attractive, although they may be difficult to implement. Mechanisms for tax collection may not be in place, and enterprises may resist imposition of the levy. Few lower-income countries resort to payroll levies to finance training. For countries in the lower-middle-income range the payroll levy approach may be more attractive than alternative broadly based taxes.

Cost recovery

Payroll levies should not be seen as a permanent solution to the problem of training finance. As national training institutions gain firmer footing, alternative sources of finance become feasible, and enterprises will become able to meet more of their own training needs. In this changing environment, reduction in the levy rate is appropriate. To the extent that public sector provision of training remains necessary, the training authority can be required to compete for budgetary resources with other government departments and agencies. Or to the extent that charging for its services becomes feasible, the authority could be required to operate on a cost recovery basis.

Charging fees to trainees is another option. However, as noted before, in countries where secondary academic schooling is free, imposing fees for secondary vocational schooling would raise significant equity questions. It is less clear that this is the case for training provided outside of the formal school system. The flourishing market in proprietary training courses indicates that many individuals are investing in training themselves. Moreover high private rates of return on training investment indicate that many individuals who receive subsidized training may be able to bear a larger share of the costs. These facts justify charging fees for training even though to do so would raise questions of parity with privileged secondary school students. Where market imperfections inhibit worker self-finance of training, exemption from fees for needy students is justified. More innovative measures to enable poor workers to meet training costs, such as state-backed loan schemes, should be examined, but these will rarely be administratively feasible.

Direct income generation is another source of revenue for training authorities and individual training centers. In Latin America vocational training institutes have broadened their activities to include the sale of consultancy and training services to public and private enterprises to gain additional funding. The sale of goods produced by training centers offers a limited source of revenue, as well as a useful market test of training quality. Although currently underexploited, this source can be encouraged by relaxing government restrictions on the ability of public

training institutions to retain earned income. In several countries income generation is facilitated by the availability of revolving funds, from which training centers can finance the purchase of materials used in production. A balance must be struck, however, between providing training and producing goods for sale.

5

Training as a Complement to Equity Strategies

Most of the poor in developing countries are found in rural areas and in the urban informal sector. Their principal asset is their labor, and improving their productivity and earnings is the main road out of poverty. Reform of policies that discourage economic and employment growth—not training—is the first step along this road for the poor, as well as for women and minorities. Improving levels of general education helps. Training in the rural and urban informal sectors can improve the productivity of the poor if it is used to complement broader strategies to generate income, but training alone has not been very effective. Improved access for women to higher productivity and earnings requires reduction of discrimination in employment and carefully targeted training that heavily involves employers.

Public preemployment vocational schooling has not been an effective measure to reach the poor, who can ill afford to be without employment for several years. Moreover in most developing countries secondary schools enroll a small proportion of the age group, and in such circumstances vocational schools become second-best options for academically well-qualified students who are not necessarily poor. In Thailand in 1979, for example, farmers and laborers comprised 88 percent of the labor force, but their children held less than 20 percent of the places in secondary vocational schools, the balance being occupied by the children of businessmen and government officials.

Improving Levels of Education

For the poor and disadvantaged, general education is the foundation of improved productivity and earnings. Extending and improving a country's general education increases the probability that workers will

receive training from their employers. Access to preemployment vocational education and training opportunities requires completion of at least the primary school curriculum and more often completion of lower secondary school. Without competitive levels of education, individuals find it difficult to move out of marginal self-employment into wage jobs. Ensuring completion of the primary curriculum and expanding access to secondary education for women and the poor are high priorities. Nonformal basic education and literacy programs also provide steps toward further training.

Training for Rural and Urban Self-Employment

The viability of rural self-employment depends fundamentally on the purchasing power of rural consumers and thus on the productivity and incomes of farmers. Farming, of course, is the predominant form of self-employment in developing countries. Basic education and agricultural extension help farmers to acquire and apply new information and skills. Together, they are the most effective way to raise farmer skills, productivity, and income, thus strengthening market opportunities for rural entrepreneurs.

Entrepreneurial economic activity provides a second source of income for many farm families; self-employment and very small enterprises provide the main source of income for others. As with all small businesses, access to credit and raw materials and the absence of restrictive regulation are necessary for success. Skills are also important, and rural training programs that are closely adjusted to local markets and technologies can provide these skills effectively (Box 8). Cooperatives that include training within broader income generation strategies can also be effective, especially in enabling women to increase their earnings.

Much urban informal sector employment is in low-skilled occupations in which entry is easy because of low capital requirements; petty trading and food preparation are good examples of this. Skills are most important to productivity in small enterprises engaged in manufacturing, repair, and construction services. Again, access to markets, raw materials, credit, and management advice are the keys to successful businesses. Equally, removal of government regulatory constraints—such as zoning and licensing regulations—is often needed.

Although governments do try to provide training interventions for the informal sector, most skills are developed through other mechanisms. Primary education provides a crucially important base of general skills. Traditional apprenticeship provides most of the specific technical and business training needed in the informal sector in many countries.

Box 8. Training for Self-Employment in Rural Areas

Training for rural self-employment succeeds when it is designed to fit with local employment opportunities and skills needs rather than those of urban wage employment. The Legruki Vocational Training School in Tanzania exemplifies this approach. It was established by the community, with support from the Lutheran Church of Arusha, to enable those who left primary school to enter self-employment. At first conventional training in carpentry and masonry was offered to enable students to pass national competency tests for those trades. However, evaluations showed that the orientation of the curriculum toward modern sector wage employment did not adequately take into account the multiple skills and technologies required for success in rural self-employment. Following a market survey in the local area and staff debate, the curriculum was revised to shift from single to multiple skills, build from local market opportunities, incorporate useful traditional skills, and increase the flexibility of course offerings. A tracer study, which obtained information from about half of all graduates since 1980, found more than 90 percent employed. Of these more than half were self-employed in villages or in both villages and urban areas.

Source: Ishumi (1988) and Fowler (1990).

Where wage jobs are hard to find, graduates of modern sector training institutions will flow to the informal sector and adapt their skills to different conditions, although often after a long period of waiting for higher-paying wage employment. These individuals are, of course, relatively privileged, and their entry into the informal sector may reduce opportunities for the very poor. Further, people frequently move between the formal and the informal sector. Many informal sector entrepreneurs build up skills and capital during wage employment.

Simply providing skills training for informal sector employment has been less effective than providing training as a complementary service in more complex programs that give clients access to credit and market advice. The most successful such programs help carefully selected and well-educated entrepreneurs to establish or expand very small enterprises (Box 9). The difficulty of replicating these programs, however, limits their overall effect on employment creation.

Delivering effective training for the informal sector requires a great deal of expertise on the sector and those who work there. Institutions that specialize in the sector or that can devote a substantial amount of

Box 9. Entrepreneurship Development in India

The Entrepreneurship Development Program (EDP) in the Gujarat state of India is one of the oldest and best known entrepreneurial development programs in the developing world. Since its inception as an innovative credit scheme in 1968, the EDP has evolved into a comprehensive package of services directed to develop entrepreneurial talent in all small-scale economic activities. More than 50 agencies in more than 20 states in India now run EDPs.

The EDP model rests on the assumption that not everybody can be an entrepreneur. Selection is made by a combination of screening, testing, and interviewing. Successful candidates then undertake a 70-day evening program if they have work experience or a six-week, full-time residential course if they do not. These courses cover such topics as achievement motivation, market environment, financing, product selection, marketing, skills development, management, production, procurement, personnel, legal systems, and letter writing. Trainees prepare project reports, go on field trips to selected industries, receive any necessary technical training in a local industry, and receive intensive one-to-one counseling. A trainer-motivator helps graduates apply for loans, obtain land and facilities, and market their products.

In its first 14 years of operation, nearly 8,000 new entrepreneurs were trained, and 3,000 new industrial enterprises, which employed three to five people, were established. Of the 40 enterprises that have been surveyed, 80 percent have been profitable after five years of operation. Roughly 60 percent of the trainees that go through the program start businesses. The cost for each trainee is about $200, and the cost for creating an enterprise in Gujarat is about $350.

Source: Patel (1986).

resources to acquiring this expertise have been most effective. NGOs have been effective, and supporting their efforts through training funds provides a practical option that avoids further elaboration of the public training system.

Improving Access to Wage Employment for Women

The positive effects of economic growth on access to wage employment for women are seen in newly industrializing countries, where rapidly expanding manufacturing and service industries and declining population growth rates are combining to raise the possibility of labor short-

ages. Under these conditions training and employment opportunities for women increase. Much of the new employment for women is coming in electronics assembly industries and in services with low skill requirements, but access to wage employment of any kind is often a significant improvement. Access to higher-productivity wage employment can be further improved by reducing discrimination in employment and reducing the opportunity costs of training.

Attacking discrimination in employment

Legislative discrimination in employment remains a problem for women in some countries. These policies not only deny equitable access to earnings, but prevent a society from harnessing the talents of much

Box 10. Training Women in Nontraditional Skills

In a program begun in Morocco in 1979, women were placed in industrial training programs that, although in theory open to women, had attracted few candidates and accepted none. Recruitment announcements disseminated through newspapers, radio, and schools explicitly called for female applicants. Guidance counseling and informal placement arrangements were established. Female instructors were recruited and trained. Female enrollments rose sharply and have been sustained. Job placement rates for women are higher than for men in the same occupations.

In Jamaica a small-scale project to train women for the construction industry led to placement rates of more than 90 percent in such occupations as plumbing, carpentry, masonry, electrical installation, and steelworking. Women's earnings increased, and employers were reported to be very pleased with their performance. A key to success was a commitment from employers to hire the women on a trial basis following interviews with candidates. Similar positive results were obtained in vocational schools in Chile in a project in that trained young women in chemical technology, computer programming, mechanics, and electronics.

However, all projects have not been successful. In the Dominican Republic a program aimed at preparing women for nontraditional trades failed because of the lack of an aggressive counseling program and low levels of staff commitment to training women for these occupations.

Source: Lycette (1985), Kudat (1989), Borcelle (1985), and White and others (1986).

of the labor force. More pervasive are customary barriers to the employment of women and members of minority groups in given occupations, often the more remunerative ones, because of an employer's mistaken belief that these individuals cannot perform productively or will not be stable members of the work force. Women may also prefer certain traditional occupations. Deeply held social attitudes change slowly, of course, but progress can be made through programs that actively involve employers in training and placing such workers (Box 10). Success not only helps the individual worker, but it may establish a demonstration effect that counters current attitudes.

Reducing the opportunity costs of training

Few poor students can afford to be out of the work force for the three- and four-year, full-time education and training programs needed for access to wage employment, even if the programs are free. Women are further handicapped by domestic and childcare responsibilities. The opportunity cost of training can be reduced by offering shorter, more intensive courses; providing training in evenings; and offering training in convenient locations. Low levels of literacy and numeracy skills may require compensatory general education programs. Considerable institutional flexibility is needed. NGOs have shown strengths in this regard, and government subsidy of NGO training for women is justifiable on equity grounds.

6

Implications for the World Bank

The World Bank has been the largest single source of international financial support for vocational education and training (Box 11). From 1963 to 1976 about 40 percent of total Bank education lending was for vocational and technical education at the secondary and postsecondary levels. More than 20 percent of education lending during this period was for vocational and diversified secondary schools.

By the late 1970s evaluations conducted by the World Bank's Operations Evaluation and Education and Training Departments began to raise doubts regarding the cost-effectiveness of vocational schooling, especially diversified schools (see the Appendix). High costs, low levels of use of facilities, an oversupply of graduates, and the difficulty of forecasting the demand for skills were cited as constraints. Bank lending began to shift away from diversified and vocational education toward center-based vocational training and the development of national training authorities (Table 2). As a share of education sector lending, support for vocational projects declined to 30 percent in 1977–88 as lending for primary education increased. The absolute amount of support provided, however, rose as the sector expanded overall. Most of the decline came from the phasing out of support for diversified secondary schools. Support for agricultural education declined from 25 percent of all vocational lending to 13 percent for the same time period but has risen in recent years. These shifts reflected a growing awareness in the Bank of the need to build institutional capacity and to find more efficient ways of providing training. During this period the Bank provided support to some of the more effective training systems in developing countries, among them the Vocational Training Corporation in Jordan and SENAI in Brazil.

Box 11. International Support for Vocational Education and Training

International assistance to vocational and technical education and training in the 1980s averaged about $600 million annually, of which the World Bank provided 45 percent, bilateral agencies 30 percent, and other multilateral agencies 25 percent. This contrasts with an average of $180 million annually provided to support primary education. Support for vocational education and training has been concentrated on building preemployment training at various levels and has served only a small share of all youth in schools or training institutions. The high cost of establishing vocational institutions has contributed to the volume of aid, especially when donors equip workshops with advanced and costly equipment. The high expectations of governments and donors for broad economic and social benefits from vocational preparation have no doubt also played an important role, as has the visibility of building and equipping modern training institutions.

The large amount of international aid has contributed to the establishment of a base of training capacity in most countries and to overexpansion in some. Future donor assistance will be more effective if it can be mobilized to support government programs for policy reform aimed at expanding employer and private training and improving the use of existing public training capacity. In many countries this will require a very high level of coordination among donors.

Since the mid-1980s the Bank has begun to emphasize responsiveness and quality in training for wage employment. Innovative projects that address the special training needs of small modern sectors and large informal sectors in Africa are currently being developed (Box 12). Nevertheless the analytical basis of vocational lending has remained comparatively weak. A recent review of the policy content of education sector investments shows that vocational projects have been least effective in addressing policy issues. Notable is the lack of attention to the economic rationales for public training and to the encouragement of private training. The pressing need for policy reform to ensure efficient skills development in response to economic change calls for substantial improvements in the analytical and policy content of investment operations.

Five actions are needed to improve the quality of World Bank support for skills training.

Table 2. World Bank Investments in Vocational and Technical Education and Training, 1963–88

(millions of U.S. dollars)

	1963–76		*1977–86*		*1987–88*	
	Dollars	*Percent*	*Dollars*	*Percent*	*Dollars*	*Percent*
Total	969	100	3,223	100	1,176	100
Mode						
Secondary diversified	268	28	94	3	0	0
Secondary vocational	248	26	609	19	172	15
Postsecondary vocational	202	21	940	29	102	9
Nonformal	251	26	1,579	49	902	77
Sector						
Agriculture	243	25	409	13	302	26
Industry	658	68	2,591	80	588	50
Services	68	7	222	7	286	24
Income level						
Low	102	11	475	15	122	10
Lower-middle	423	44	1,392	43	493	42
Upper-middle	445	46	1,356	42	561	48

Source: World Bank data.

- Analysis of the economic context of training, including labor market issues, should be improved and used in formulating national macroeconomic strategies and designing investment operations.
- Lending for prevocational courses should be replaced by programs to strengthen quality and access in academic secondary education.
- Lending should address the policy changes needed to create a favorable economic climate for private training as well as direct measures to stimulate and improve training in the private sector.
- Lending should include measures to improve the responsiveness and efficiency of public training.
- World Bank lending should require the development of a longer-term strategy for the evolution of the government's role in training and should encourage broadly based coordination of donor support.

Improving Economic Analysis for Training

First, the design of economically sound training policies and investments requires improvements in the analysis of the intricate relations

Box 12. Reforming Vocational Training Policy in Togo

In Togo 73 percent of the labor force of 1.4 million work in agriculture, 21 percent in the urban informal sector, and 6 percent (76,000) in the modern wage sector. Economic policy reforms in the early and mid-1980s have opened the economy to international competition, reducing policy distortions and reversing a long period of negative growth. The economy is vulnerable to rapid changes in commodity prices, and the government is seeking to diversify the economy by expanding foreign investment in labor-intensive light manufacturing.

The public vocational and technical education system was developed in the 1970s to meet social objectives. Lower and upper secondary technical schools and vocational training centers managed by the Ministry of Technical Education and Vocational Training (MEFTP) enroll about 3,800 students. Private vocational schools and centers enroll 2,400 more. Traditional apprenticeship is well established in the informal sector. The public system has been rigidly administered and inadequately financed, and both quality and efficiency have been low. Much private training is of low quality. The government has thus launched a significant program of training policy reform and institutional development to improve the responsiveness of public training to the economy, to improve training quality, and to strengthen employer and private training. The reform has three main elements:

- Strengthening the capacity of the MEFTP to monitor and analyze the labor market, which includes establishing a Training and Employment Observatory to monitor employment opportunities and the effectiveness of training and to publish the results regularly
- Training managers and instructors using "twinning" arrangements with overseas training institutes
- Establishing a National Training Fund administered by a private-public management committee to allocate financial resources to training projects and investments of employers and of public and private training institutions that meet predetermined criteria. Traditional apprentice masters will be eligible to apply to the fund for grants to upgrade their skills.

In addition cooperative dual training systems, using modular approaches to instruction, will be developed to strengthen cooperation between employers and public training institutions. Lower secondary vocational schools will be converted to regional training centers that specialize in local training needs. They will be open on evenings and weekends to provide theory classes for masters and apprentices in the informal sector. The project is supported by a credit from the International Development Association of the World Bank.

between economic policy, training efficiency, and equitable access to employment. Analysis of labor market policies and efficiency should also be an integral part of macroeconomic policy development. Public investment in preemployment vocational schooling or training, and in higher technical education, should be supported only when sector work or project analysis provides clear justifications in terms of market distortions, weak private training capacity, or social benefits to training. Key topics for economic analysis include:

- The impact of economic adjustment on employment and the prospects for creating jobs in different parts of the economy
- The effect of policy distortions on incentives for private sector investment in training
- The feasibility of dismantling economic policies that constrain the growth of employment and incentives for private investment in training
- The design of compensatory training policies in which economic policies cannot be changed in the short term
- Identification of the strategic skills that have significant externalities based on an analysis of the demand for skills in subsectors or industries in the economy.

Strengthening Primary and Secondary Education

Bank lending should strengthen the quality of, and access to, academic secondary education, rather than prevocational courses. Improving general education will increase worker flexibility. Promoting better access to secondary education for women and the poor will improve their chances for training and their ability to earn higher incomes. Policies for the development of primary education have been discussed in the 1990 policy paper. For secondary education, given a poor record of performance, the diversification of curricula by adding vocational courses should be avoided. The Bank can assist governments by:

- Financing curriculum reform and teacher training to strengthen applied mathematics and science education
- Eliminating barriers to access by women and the poor.

Strengthening Employer and Private Training

Bank lending should address the policy environment for private training. Bank lending has only rarely and indirectly supported the development of training capacity in private enterprises or the proprietary training sector. Its support for the training capacity of public employers,

however, has been substantial. Improved support to the private sector can be provided by:

- Including assessments of employer and private training capacity in investment analysis
- Supporting appropriate systems for accrediting and inspecting private training institutions
- Financing technical assistance programs that build professional training capacity in both public and private enterprises.

Improving the Effectiveness and Efficiency of Public Training

Vocational lending operations should seek to improve the effectiveness and efficiency of public training by building institutional capacity, generating the resources needed to improve outcomes, and improving instructional practices. Options to be considered are:

- Establishing or strengthening national training authorities by financing programs of staff development as well as the development of labor market and training monitoring and information systems
- Establishing training funds as a source of targeted grant and loan assistance to employers and private and public training agencies to increase flexibility in responding to periodic training needs, such as to facilitate economic change
- Consolidating small and underused training facilities, financing the costs of conversion and staff retraining and redeployment, rehabilitating smaller systems, and supporting government efforts to turn over excess institutions to NGOs or the private training sector
- Promoting quasi-private sector management practices combining autonomy and accountability for managing public training institutions
- Giving priority to center-based training modes for training skilled workers and supporting curriculum reforms that reduce training duration and increase facilities use
- Seeking government agreement to pay salaries adequate to attract and retain technically qualified instructors and to provide adequate financing for recurrent costs.

Providing Long-Term Support

Bank lending for vocational education and training has been most successful through long-term partnerships with governments. Relations that last a decade or more permit the incremental development of policy and institutional capacity and will be especially important in supporting

government efforts to build a better balance of private and public training, and in encouraging coordinated support from donors. Bank operations should generally:

- Finance part of a longer-term investment and institutional development program that supports a clear strategy for an evolving government role in training
- Seek to mobilize support from other international donors within an accepted policy framework.

Significant policy reforms may be supported by subsector investment loans that address key policy issues where institutions are reasonably well developed and can take on the tasks of formulating and implementing policy. Traditional investment loans will be appropriate to support consolidation and restructuring where high levels of policy consensus exist or when expansion of effective training systems is justified.

Appendix

Findings of the World Bank's Operations Evaluation Department

Although there has been no formal, separate study evaluating the vocational education and training projects supported by the World Bank, the Bank's Operations Evaluation Department has attempted to evaluate them in their *Annual Review of Project Performance Results*. *Annual Reviews* from 1975 to 1989 were examined to determine the general trends and outcomes of these projects. During this time almost all approved education projects contained a vocational or technical component.

The *Annual Reviews* show that after 1975 the World Bank's interest in education began a gradual shift away from financing education hardware toward financing education software. Most approved loans in the earlier reports generally supported providing hardware for existing schools, expanding existing institutions, or creating additional institutions of a particular type with a proven track record.

Of the four education projects evaluated in the 1975 *Annual Review*, three included technical components, and all suffered from severe problems, such as high capital and operating costs, too few qualified teachers, underenrollment, and low government priority. In addition curricula were poorly designed, and few, if any, links existed with the local labor market.

Beginning in the 1980s, while some projects continued to focus on establishing or upgrading vocational and technical training, agricultural training, and teacher training, the bulk of the projects focused on curriculum reform and innovation, as well as the production of manpower.

Vocational and technical education was most common in countries at the mid level of development. The most successful projects had at least some of the following elements: a strong and continued demand among

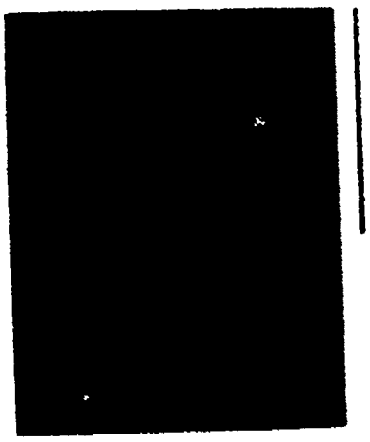
students and employers for the skills being taught, the presence of an existing and successful institution that was being expanded or upgraded, close integration between the schools and the communities being served, and the provision of equipment and facilities that were appropriate and could be maintained cost-effectively (*Annual Review* 1987).

Evidence suggests that graduates of Bank-financed technical training institutions have had problems finding employment after graduation for several reasons: shortcomings in the training system, temporary fluctuations in the demand for certain skills, a chronic oversupply of certain types of graduates, and inaccurate or incomplete initial assessments of labor needs (*Annual Review* 1988). Evidence also suggests that although the education or training was meant to be a terminal education, many graduates pursue some form of postsecondary education.

Most of the projects reviewed during this period included the introduction of a diversified curriculum. Courses such as woodwork, metalwork, home economics, and electronics were added to the traditional secondary education curriculum. These practical courses were meant to be prevocational and to make school more relevant to the needs of the economy. It was hoped that diversified schools would supply the market with readily employable labor and provide graduates with the background necessary to acquire further advanced training either on the job or at school.

Several problems emerged with the thrust to diversity the curriculum: difficulties in recruiting qualified teachers because of poor salaries, underenrollment in courses because of cultural biases against technical subjects, large proportions of graduates from technical schools and diversified schools continuing on to some form of tertiary education rather than entering the labor market, the offering of vocational options that were incompatible with the needs of the community, inappropriate and often nonexisting links between the business community and the schools, and high recurrent costs per student.

Although the objectives of diversifying the curriculum seemed to be justified, the Bank underestimated the cultural biases against this type of education as well as the difficulties involved in modifying curricula. It is becoming increasingly clear that the results of diversification have not been as positive as anticipated.



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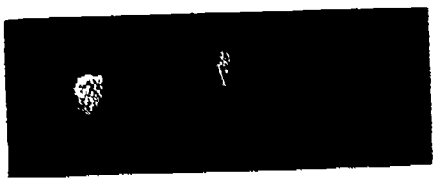

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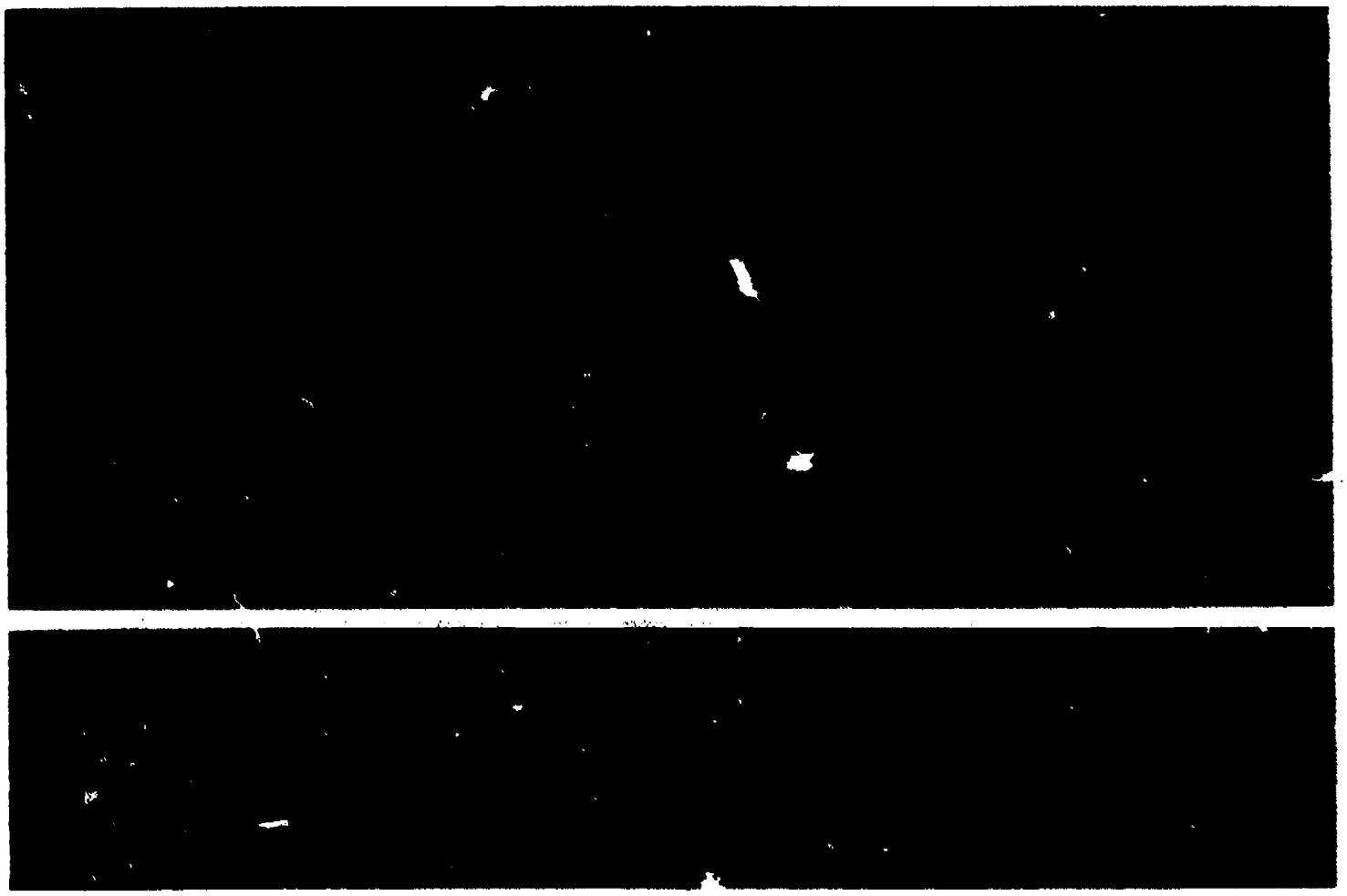

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