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Vocational Education and Training

Review of Experience

Bureau for Latin America and the Caribbean • Office of Development Resources • Education and Human Resources Division

U. S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Vocational Education and Training

Review of Experience

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In 1989, the Education and Human Resources (EHR) Division of A.I.D.'s Bureau for Latin America and the Caribbean (LAC) commissioned a series of three evaluations in education and human resource development: basic education, vocational education and training, and participant training. A fourth study of management education and training is planned.

These studies present lessons learned about the design, implementation, and evaluation of donor-assisted projects. Each study examines the relevant literature as well as actual site visits of programs or projects in the LAC region. The studies focus on the experience of the U.S. Agency for International Development over the past fifteen years. In addition, the work of other donor organizations is considered.

The studies are research and reference documents that lead to practical applications in project design, implementation, and evaluation. Part I of this series presents the *Reviews of Experience* and Part II the *Practical Applications* for each subsector.

The studies were carried out by the Academy for Educational Development (AED) through the LAC Bureau's Education and Human Resources Technical Services Project. The team for the studies included the following representatives of the EHR Division, AED, and its subcontractors.

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Under the guidance of Beverly Jones, director of the Education and Human Resources Technical Services Project, the Academy for Educational Development carried out editing and production of this study. Frances Hays worked closely with Dennis Herschbach on the final writing of the document. Marjorie Webster and Sheila Watkins ably handled all the tasks involved with production from word processing through layout.

This study examines the problem of implementing and sustaining vocational education and training programs in developing countries. In recent years, increasingly constrained budgets on the part of governments and donor organizations have raised concerns about maximizing the efficiency of investment in all subsectors of education, including vocational education and training. The purpose of this study is to identify lessons learned from the experience of donor organizations and developing countries, so that these lessons may shape future investments. To this end, operational guidelines for the development of future vocational education and training projects are provided.

In conducting the study, the authors reviewed the literature on vocational education and training and examined over 50 projects conducted by the U.S. Agency for International Development (A.I.D.) from 1973 to 1989. Twenty-four of these projects were selected for intensive review, and two representative A.I.D. projects (the Advisory Council for Human Resource Development in Honduras and the Basic Skills Training Project in Jamaica) were selected as case studies.

Two principal questions guided the study:

- What kinds of investments should A.I.D. make in vocational education and training?
- How can program quality and sustainability be strengthened?

Vocational education and training is an enterprise characterized by diversity. Training modes vary — from short-term, specialized programs, apprenticeships, and in-plant training to formal and nonformal training institutions. This study concludes that all modes of vocational education can yield acceptably high rates of return and that all modes can be implemented under supportive conditions. The challenge that A.I.D. faces is to invest in training activities that can be *successfully* implemented and sustained.

Traditionally, planners have used manpower forecasting to make most decisions about resource allocation for vocational education and training. Cost-benefit and rate-of-return studies have also been used to gauge the comparative yield of one training investment over another. This study, however, suggests that the most urgent consideration is an assessment of current conditions in the implementing context.

Implementing conditions include macro-level conditions, such as the political and economic climate, social and cultural values, and legal and bureaucratic structures, as well as micro-level conditions that relate specifically to training systems. Planning and decision making must be based on an understanding of the implementing context and on an assessment of the likelihood that a particular intervention can be successfully implemented given the current conditions. Failure to identify and accommodate critical contextual conditions can seriously weaken a training project and impair its sustainability.

The relationship between the implementing context and project complexity is of considerable importance. As project design becomes more complex, understanding and accommodating this relationship become even more crucial. The projects most likely to succeed are those with a high level of implementing support and a low level of complexity. Under conditions of low support and low complexity, only the "permanent pilot" should be implemented.

Complex projects should not be designed under conditions of low support because of the high probability of failure. Many A.I.D. projects, however, fall into this category. Because of the perceived need, large and complex projects are often designed for countries with low imple-

menting capacity. Project design should be based on implementing potential, not need, because need will always exceed capacity.

A.I.D. should approach investments in formal vocational education and training (programs sponsored by ministries of education) with caution because of the difficulty of successfully implementing and sustaining programs. The needs of formal systems are so great that donor funds usually have little impact. To be successful, donor interventions must address all system components and provide sustained assistance over a long period of time. In the case of poorly functioning formal systems, the best policy option is to provide comprehensive, sustained assistance or no assistance at all. Another policy option is to restrict support to a single institution, providing comprehensive support and focusing on a range of critical skill areas.

Nonformal vocational education and training programs (sponsored by labor or other ministries or by private organizations) often experience many of the same problems associated with formal programs, particularly when similar institutional forms are used. In low-income countries it is especially difficult to implement programs successfully because administrative, management, and financial support is weak. Enterprise capacity, moreover, is often underdeveloped and employment demand is usually unreliable. The institution-based nonformal training systems of the middle-income countries of Latin America — such as those administered through SENAI in Brazil and SENA in Colombia — offer appealing models, but these models are generally not appropriate for the low-income countries of Central America and the Caribbean.

Investments in nonformal training in low-income countries should be targeted to activities that have a reasonable probability of success. In addition, investments should be sustained for an extended time and have a major impact on the training system. One option is to single out a program, or a manageable group of programs, and provide long-term comprehensive support. In general, it is better to invest in training technicians and first-line managers than in training skilled and semi-skilled workers. Upgrading and retraining for existing workers are better options than pre-employment training for new workers.

Employer-based training programs appear to be an attractive option to government-sponsored programs. Generally, small firms have the greatest training needs. Over the next decade, a major thrust in vocational training should be directed at responding to the needs of small- and medium-sized firms. However, there are no good methods of coordinating training services for these employers. Developing such methods should be a priority of A.I.D. One potentially effective way is to work through intermediary organizations, such as service centers, employer groups, and trade associations.

Specialized, nonformal training projects are attractive to donors for several reasons. For instance, these projects allow donors to target specific development problems such as literacy, income generation, or women's employment. Such projects tend to be short-term, and their activities are relatively self-contained. In the small countries of Central America and the Caribbean, specialized nonformal programs may be the best policy option.

All training modes face the challenge of enhancing quality and sustainability. One key concern is to strengthen the organizational and management structure of the implementing institutions. Among the A.I.D. projects reviewed for this study, management constituted the single most important factor in determining project success. In low-income countries with weak infrastructures, a strong management system becomes even more crucial. Successful vocational education and training projects place a high priority on strengthening management capability. In addition, successful projects address the need for trained instructional staff and appropriate instructional resources.

Project design should always be focused on developing sustainable training systems. The interdependent relationship of all system components must be considered. The more dynamic system elements, such as management and staff quality, are particularly important. Some experimentation will prove necessary before successful implementation of an entire project can be accomplished. System overload should be avoided. Overload occurs when a project is too large for the existing management and resource capabilities. A.I.D. should avoid large, underfunded, and poorly staffed projects with short time frames. One strategy is to design less

complex projects, reducing project scale and deemphasizing broad national objectives in favor of limited objectives with a reasonable probability of being achieved. Another strategy is to divide implementation into phases, following a plan of incremental development that allows for considerable experimentation, feedback, and modification.

In the 1990s A.I.D. faces a significant challenge, and an equally significant opportunity, in providing support for vocational education and training. In Latin America and the Caribbean, policy makers will continue to grapple with the problem of providing more and better quality training. Spiraling population growth, rapidly expanding cities, lagging formal economies, and the burgeoning need for employment -- all of these factors combine to increase the demand for vocational education and training, even in the face of increasing financial constraints.

Vocational education and training projects, however, have been difficult to establish and sustain, particularly in the low-income countries in which A.I.D. works. Clearly the challenge is to do better with fewer resources. One priority for A.I.D. is to explore alternatives to the public financing of vocational education and training. In most developing countries, the financial base needs to be broadened. Public financing will remain important, particularly in low-income countries, but other sources are needed. The resource levels required to sustain program quality and maintain instructional capacity cannot be achieved through public revenues alone.

A.I.D. has the opportunity to build on its considerable experience by broadening its focus. Policy makers, donors, and planners need to give much greater attention to understanding the implementing context, appraising project complexity, fitting projects to local contexts, assessing the system requirements of training programs, and diversifying the sources of funding. Introducing change into contexts that are poorly understood is difficult; sustaining projects that have overextended the existing implementing capacity is impossible; and providing effective training is unlikely if system components do not work well together.

Issues of program quality, sustainability, and effectiveness must continue to occupy the forefront of policy deliberations among donor organizations and developing countries. Successfully addressing these issues requires a broad planning focus. Only with such a focus will countries be able to implement vocational education and training programs that contribute to sustainable economic growth.

I Introduction

Purpose of Study

For over two decades, developing countries and donor organizations have made substantial investments in vocational education and training. The commitment to vocational and technical education and training is well established throughout the Latin American and Caribbean region. National systems such as SENA (National Apprenticeship Service) in Colombia and SENAI (National Industrial Apprenticeship Service) in Brazil are major providers of training services, benefiting from strong government and private sector support. Other investments have developed a wide range of institutional delivery modes for training workers; these forms include secondary vocational schools, apprenticeships, nonformal skill training centers, post-secondary technical schools and polytechnics, and on-the-job training.

This unprecedented expansion of vocational education and training programs in the Latin American and Caribbean region has placed heavy demands not only on national budgets, but also on the administrative and managerial capabilities of these countries. While some countries have coped successfully with these demands, in others the capacity to effectively implement change has lagged behind the establishment and growth of training programs, resulting in training of low quality and considerable institutional deterioration.

In recent years, increasingly constrained budgets on the part of host country governments and donor organizations have raised concerns about maximizing the efficiency of investment in all subsectors of education, including vocational education and training. As the U.S. Agency for International Development (A.I.D.) prepares to assist the developing world in the 1990s, it is evaluating its investment record and conducting broad policy analysis in various subsectors of education, including basic education, management education and training, participant training (scholarship assistance), and vocational education and training. This study was undertaken as part of this policy analysis.

This study examines the problem of implementing and sustaining vocational education and training programs in developing countries. Its purpose is to identify lessons learned from the experience of A.I.D., other donors, and developing countries in the area of vocational education and training, so that these lessons may shape future investment. This study will provide A.I.D. officers with operational guidelines for the development of future vocational education and training projects.

Given the limited resources available for the study, the attempt has not been to conduct original research but rather to synthesize the conclusions of research from the academic community, A.I.D., other donors, and the developing world. While this review is intended to be useful to individuals and institutions worldwide that are concerned with vocational education and training, its main audience is A.I.D. officials.

The world of vocational education and training is vast, and the issues in the field are complex and interrelated. In an effort to focus the study, two principal questions guided this review:

- What kinds of investments should be made in vocational education and training?
- How can program quality and sustainability be strengthened?

Sources of Information

This study has not been limited to A.I.D.'s experience, because A.I.D. supports only a small portion of the total annual investment in voca-

tional training and because A.I.D.'s experience is not necessarily representative of all investment. The study does, however, attempt to draw conclusions that are relevant to the Latin American and Caribbean region. The retrospective nature of the review focuses attention largely on past investments and to a lesser extent on current investments. Some issues, therefore, may fall outside of recent experience, even though they may be important for the future.

Two sources of information were used to develop the conclusions in this study: (1) a review of the literature on vocational education and training, and (2) a review of A.I.D.-funded projects, including case studies of two A.I.D.-supported vocational education and training projects. First, a review of the literature on vocational education and training was conducted, covering both primary and secondary sources of information. The literature review, which revealed a rich body of material on vocational training in developing countries, provided the broader context within which to interpret A.I.D. and other donor experience.

The second source of information was the experience A.I.D. has built up in the design and implementation of assistance projects in vocational education and training. Over 50 A.I.D. projects in vocational education and training from 1973 to 1989 were examined, and 24 were selected for more intensive review. The projects varied greatly in terms of objectives, scope, design, and target population; the evaluation reports that were reviewed varied greatly in form and substance. In most cases, uniform categories of information could not be developed. For these reasons, it was difficult to analyze the reports and make meaningful overall comparisons. Individually, however, the reports provided a wealth of information that complemented the conclusions of the literature review. Finally, case studies were conducted of two representative projects — the Advisory Council for Human Resource Development in Honduras and the Basic Skills Training Project in Jamaica.

Definitions

The field of vocational education and training has been hampered by definitional confusion. Multiple skill levels and markets for skills, different training modes and outcomes, widely varying institutional arrangements in both the private and public sectors — all these have made for a vast and complex field with a myriad of policy options.

In the broadest sense, all education contributes to the skills needed for productive employment and is, therefore, ***vocational***. One could imagine, for example, an education tree with broad educational preparation at the base and various branches leading to general or occupation-specific university programs at the top. Along the trunk of the tree, individuals progress through primary and general secondary education; along the branches, they receive occupation-specific training as economists or engineers.

This report focuses strictly on the purely vocational branches of the tree. Craftsmen, semi-skilled and skilled workers, and technicians (each a differing skill level) are trained along different branches of the tree using different training modes, including apprenticeships, secondary and post-secondary institutions, skill training centers, and on-the-job or in-plant training within the private sector.

In much of the world, vocational education and training is synonymous with secondary vocational schooling. For the purposes of this study, however, the whole breadth of the field is examined — not just secondary vocational schools. The aim, then, is to review this vast and complex field, so that a complete set of policy options may be outlined.

The term ***formal education*** refers to those programs that are publicly financed and administered through ministries of education. Diplomas are granted to program completers, and graduates can often matriculate to higher levels of education. While training centers are most commonly associated with formal programs, there is a wide range of program types, including diversified schools, pre-vocational training, and short-term training. Instruction can range from the broadly generic to the highly specific.

Nonformal training includes "any organizational educational activity outside the established formal system — whether operating separately or as an important feature for some broader activity — that is intended to serve identifiable learning clientele and learning objectives" (Coombs, Prosser, and Ahmed 1975, 29). Training centers

are a primary institutional form, often as part of national training systems such as those found in many Latin American countries. In-plant training workshops, short-term programs, and apprenticeships are among the kinds of training that may be offered in conjunction with centers or independently. In Latin America, training at centers accounts for less than half of the enrollment in nonformal training institutions. While many nonformal programs are offered through government agencies such as ministries of labor, others are financed by employers or other groups and administered through independent agencies.

The term ***informal training*** is used to distinguish learning that is acquired casually on the job or at home; it is basically unorganized. Informal training is the primary way in which skill requirements of the urban informal economic sector are addressed. In many areas, informal training has been the primary means through which individuals learn work skills. Only recently have planners turned their attention to the potential of informal training (Fluitman 1989).

The terms "internal" and "external" efficiency can be used in different ways. In this study ***internal efficiency*** refers to the training process — the internal program operations. Internal efficiency is linked to program design, and hence to program quality, and is an outcome of efficient management, skilled instruction, and sufficient and appropriate resources.

A program can have high internal efficiency, but not teach content which is appropriate to the needs of the labor market. In this case, the program will have low external efficiency. ***External efficiency*** refers to the extent to which training is appropriate to the identified need. Measures of external efficiency include both costs and outcomes (Metcalf 1985).

Organization of the Report

Chapter II outlines the issues surrounding investment decisions in vocational education and training. The use of measures of external efficiency is discussed, and the crucial importance of the implementing context is explored, followed by an examination of program complexity.

Chapter III examines training alternatives, focusing on the benefits of each as well as on the implementing requirements. Different formal and nonformal training alternatives are discussed, and the training requirements of small- and medium-sized employers are examined.

Chapter IV looks at the organizational and system requirements of training projects. It focuses on the key elements of training at the operational level — management development, instructional staff, and instructional resources. Next, it examines the requirements of the overall training system in which individual programs operate.

Chapter V describes the range of funding sources available for vocational education and training. In the past, training systems relied on support from general government revenues or from the payroll tax. Now donor organizations are encouraging training systems to consider a variety of sources in order to diversify the funding base. The chapter analyzes benefits and constraints of each type of funding: general public revenues, payroll taxes, user fees, and student loans.

Chapter VI summarizes the findings and conclusions of the study. The first section offers recommendations for investment choices, with particular emphasis on the Latin American and Caribbean region. The second provides guidelines for strengthening project design, with emphasis on improving quality and sustainability.

Finally, to give readers a closer look at A.I.D. experience, the appendices contain a cursory review of 24 projects in vocational education and training and two in-depth case studies of projects in Honduras and Jamaica.

II The Policy Framework: Making Investment Decisions

This chapter outlines the issues surrounding investment decisions in vocational education and training. It presents a framework for formulating vocational training policy based on consideration of two critical factors — the implementing context and project complexity. Faced with limited resources, both donor agencies and the governments of developing nations are struggling to establish investment priorities that will effectively further economic growth and development. Traditionally, such decisions have been made based on manpower forecasting and rates of return studies. These decisions, however, have failed to consider the implementing environment of a particular country and its ability to undertake new projects.

Policy makers, donors, and planners need to broaden their perspectives to fully appreciate the implementing context. This includes the current level of economic development of the country as well as its established training institutions and their ability to conduct new training programs. Making investment choices involves issues of cost-effectiveness, national development policy, training capacity, and social and institutional preference. To succeed, investment choices must fit the implementing context.

Traditional Approaches to Investment Decisions

Vocational education and training is a controversial subject, despite its essential role in economic development. This section examines the ways economists have assessed the need for training programs and evaluated their costs and benefits. It is necessary to put these methods into perspective by noting the value of the information they reveal and their limitations in guiding investment choices.

In recent years, no other discussion has dominated the literature as much as the question of public investment in vocational training. One group of critics, composed mainly of economists and manpower specialists, has raised serious questions about the efficiency of national training systems. Their arguments are based on rates of return and cost-effectiveness studies, which show low rates of return on government-financed programs. Some economists, such as Psacharopoulos (1987), suggest that governments should not invest in vocational training but rather should rely on the private sector to deliver training.

Other critics, mostly vocational educators and technical specialists, place less credence on cost studies and stress more qualitative factors such as placement rates, training quality, and skill attainment. As Dougherty (1989, 1-2) observes, "There is so little overlap between their spheres of expertise that a communications gap appears to be the rule rather than the exception. . . . Much of the controversy in the literature appears to be attributable to antagonists unwittingly focusing on two different points on what is in effect a continuous spectrum and then arguing at cross purposes."

Assessing Manpower Requirements

Traditionally, most decisions about resource allocation for vocational training have been based on manpower forecasting. Projected needs for trained workers are identified through various survey procedures. Data are aggregated at the national level by occupation or industry; seldom are data disaggregated to the local level. This information is used to identify shifts in the total rates of employment within industries, along with the rates of participation, unemployment, and underemployment. Data on the age structure of the labor force allow replacement rates to be calculated, but migration rates are more difficult to project. Manpower and employment data are linked to educational planning by

matching the various occupational categories with levels and kinds of educational attainment.

Despite its wide and continued use, this approach to resource allocation is largely discredited. Data are too aggregated to be useful, and projections are too erratic to be reliable for decision making (Dougherty 1989). Experience shows that most projections are widely off the mark. In addition, inappropriate data are often collected. National planning data tend to focus on the modern industrial sector, while considerable local job expansion occurs in the informal sector. The planning model used in the modern sector, as well as the occupational structure and staffing patterns of the more highly organized industries, is inapplicable as a model for small- and medium-sized enterprises (Davis 1980, 1988). When planning is based on assumptions that are mainly relevant to the modern sector, the likelihood is increased that many trainees will not be able to get jobs — regardless of the quality of training — because such jobs are not available. The low placement rates of many vocational training programs can be attributed in part to the fact that training is aimed at formal sector jobs that do not exist.

Although the placement rates of program completers may be low, this does not mean that investments in training are inappropriate, as some critics suggest. What it does mean is that better ways of identifying training needs are required and that greater attention needs to be given to linking training and employment (Castro 1987). Recent A.I.D. experience ". . . generally suggests that the single most important factor in the negative assessment of vocational education projects has been the absence of a clear linkage between the project and employment opportunities" (Bowels 1988, 33).

Current thinking shifts the emphasis of planning away from forecasting the number of trained workers needed toward determining the kind and flow of information required, as well as improving access to that information. The needs of local employers will be better anticipated and articulated if information is effectively channeled. Determining market changes and speeding up the flow of information between training providers and employers is essential (Hollister 1983; Richter 1984, 1986; Kelly et al. 1985; Dougherty 1988, 1989). This approach is in marked contrast to approaches which emphasize the formulation of specific training targets (Bowels 1988). It is process-oriented and results in ". . . the gradual molding of the labor force in a direction which is consistent with the general direction of development and which takes due account of the relative costs of different types of skill development" (Dougherty 1989, 5).

Assessing the Costs and Benefits of Training

Various research techniques are used to assess the relative benefits of different forms of training and the comparative effectiveness of investments in vocational and basic education. This enables planners to gauge the comparative yield of one training investment versus another.

It is extremely difficult, however, to make meaningful evaluations of the value of training based on cost-effectiveness studies. Every methodology employed has shortcomings (Levin 1988; Dougherty 1989), so that while the findings are useful, they should not be applied dogmatically. Important differences in training modes may be overlooked, resulting in a tendency to overgeneralize, and external influences may not be fully considered. Maurice (1989, 4) observes, for example, that ". . . cost effectiveness analysis in vocational education never tells the whole story; and sometimes it tells so very little that it inadequately informs policy makers. . . ."

Evaluation of external efficiency of training does yield some useful information. It provides an analytical framework for decision making; comparisons between goals can be made, and relative costs and benefits can be measured over time. "Cost benefit analysis is an aid to judgment, however, and not a substitute for it, since future costs and benefits can never be predicted with certainty, and measurement, particularly with respect to the likely benefits of a project, can never be completely precise" (Psacharopoulos and Woodhall 1985, 29).

Differentiating between Problems in Training Design and Implementation

Perhaps the greatest shortcoming of these approaches to planning is that they fail to discriminate between problems in the design of training and problems in the implementation of training. Program completers may not obtain employment for various reasons — perhaps the training was inappropriate to the needs of the labor market or perhaps the training was poor in

quality. Manpower forecasting and cost-effectiveness studies tend to assume that the first reason is the primary cause of low placement rates, although there is mounting evidence that the second is the real cause (Kelly et al. 1985; World Bank 1988; Educational Development Center 1989; Herschbach 1989).

Whenever there is a failure to discriminate between the effectiveness of program design and of program implementation, considerable confusion in policy results. On the one hand, less investment in training may be needed; on the other, greater emphasis on program improvement may be needed. The planner cannot easily determine which is the case. The inability of these methods to yield insight into the need for program improvement may be their greatest drawback.

Implementing Context

If assessments of the external efficiency of vocational training yield incomplete data with which to make investment decisions, on what basis can policy makers and donors make decisions? Policy makers are confronted with the task of determining whether or not to invest in training and, if so, to what degree and at what level. Available financing plays a large part in the decision. But policy makers and donors are increasingly focusing their attention on the implementing context in which training takes place.

Contextual Elements

Implementing conditions relate both to macro-level conditions such as the political and economic climate, the social and cultural values, and the legal and bureaucratic structures, and to micro-level conditions that relate specifically to training systems. These include the availability of financial resources, the supply of trained personnel, the existing institutional infrastructure for training, and other human and material resources that affect the long-term implementation of training. The particular development policy of a country is as important a contextual element as the current state of the economy.

Implementing conditions are uneven and changing. Strong political support, for example, may be combined with weak organizational capacity. Over time, what were adequate financial resources may be severely reduced. The impact of environmental conditions, moreover, may not be constant at all organizational levels. Line agency support, for example, may be strong, but policy guidance weak.

Middleton and Demsky (1988, i) suggest that ". . . the level of economic development, and the consequent size and dynamism of industrial employment, exerts powerful influence on the success of investment in vocational education and training." Nadler and Tushman (1983, 115) identify as important considerations ". . . institutions, groups, individuals, and events outside of the boundaries of the organization being analyzed, but having a potential impact on the organization. . . ." Rondinelli, Middleton, and Verspoor (1989) identify political-administrative, economic, and organizational factors in the environment which must be addressed in program planning. Verspoor (1989) identifies a stable and sufficient source of funding as an important contextual element, and Bowels (1988) emphasizes the importance of economic factors to the success of training.

Within a given country, an interrelated set of political, social, institutional, and economic factors — the implementing context — determines whether or not a particular training intervention can be implemented successfully. Any type of training intervention can be implemented cost-effectively if the implementing context is supportive. Planning and decision making must be based on an understanding of the context and on an assessment of the likelihood that a particular intervention can be successfully implemented. The failure to adequately identify and accommodate critical contextual conditions can seriously weaken a training project and impair its sustainability (Nadler and Tushman 1983; Cohen, Grindle, and Walker 1985; Middleton, Woldemariam, and Mayo-Brown 1986). As Verspoor (1989, 131) contends, "There is usually a combination of design, implementation and environmental factors that reinforce each other."

It is particularly important, therefore, to assess conditions in the implementing context before selecting training interventions. Just because a certain training alternative appears to be cost-effective does not mean that it can be successfully implemented in a particular country, or, indeed, that it will address a specific development need (Zymelman 1976; Castro 1979;

Corvalan 1979; Herschbach et al. 1985; Middleton and Demsky 1988; Dougherty 1989). If the implementing context is not supportive, an industry-based program can fail just as readily as a school-based program.

By focusing on the implementing context, the policy maker can examine both the internal and external efficiency of training. The artificial barrier between design-effectiveness and implementation-effectiveness that characterizes external efficiency studies is breached. It is possible to identify the factors that affect program implementation and sustainability. At the same time, a clearer picture emerges concerning the kinds of training modes that can be implemented in a given context. This assists decision makers in program choice. Of particular importance is an assessment of the policy environment and the economic context.

Policy Environment

The single most important environmental condition that affects the effectiveness of training interventions is the policy environment (Bowels 1988). Unless the policy environment is supportive, quality training cannot be initiated and sustained. The outcome of training is inextricably linked to the policy environment.

There are two important ways in which the policy environment impacts on training. First, public policy must establish the macro-economic conditions that make it possible for employers to benefit from training. Government policy must support the conditions — political, economic, and social — essential for the stability and expansion of enterprise.

Tax policies, for example, must favor investment, business expansion, and market stability. Working capital must be available, so that employers can upgrade and expand. Currency regulations must not impede supplies of materials, machinery, equipment, and spare parts. Barriers to markets must be removed, especially in the case of small employers. Labor regulations must support staff development, and incentives for investing in training must be present. These conditions determine whether employers seek out and make use of training services, and they affect the relative usefulness of training services (A.I.D. 1987; Grindle, Mann, and Shipton 1987).

Second, public policy must establish conditions that support not only the general economic climate but also the ability to provide effective training. These conditions influence whether society accepts and supports training interventions, determining the kinds of programs that can be implemented and affecting the quality and effectiveness of training (Herschbach 1985).

Financial constraints, for example, may preclude a government from providing the funds needed to meet training costs. Political control of staffing may interfere with the recruiting of trained individuals. There may be competition for the control and use of resources, or the hiring and promotion policies of firms may work as training disincentives. Society may not support the development of strong working relationships between training institutions and employers, or conflicts may exist among competing groups such as unions, employers' associations, ministry officials, producers, and various ethnic or tribal groups. Employers may perceive training as a means of pressuring for higher wages, giving an unfair advantage to business competitors, or as an indirect way of imposing taxation.

Political interference can range from the benign and subtle to the overt and hostile, and manifests itself in a variety of forms. In the 24 A.I.D. projects reviewed for this study (see Appendix A), political interference was an important environmental condition impinging on program success. In the Human Resources Development Project implemented in Djibouti, for example, a critical project component was eliminated from the project plan by the government, ". . . thus radically altering both the activities and the results obtained" (Norris 1984, 6). In the Vehicle Maintenance Training Project implemented in Egypt, a disagreement developed among USAID, the contractor, and the local agency over responsibilities largely because political issues were not resolved initially (USAID/Egypt 1984). The original objectives of the Basic Skills Training Project in Jamaica were distorted through political control, resulting in the diversion of funds from some project elements to other activities and the addition of a costly training layer to an already overextended system (see Appendix B).

Economic Context

The economic context is another important environmental condition affecting the implementation of training programs.

First, for most institutional forms of vocational education to succeed there must be an increasing demand for labor in the formal sector (Bowels 1988). Unless the demand for labor is rising, training graduates have few employment possibilities, employers are not interested in collaborating with training providers, and few resources are available for training. Planners tend to be overly optimistic, often projecting many more job openings in the formal sector than will ever exist (Bowels 1988; Davis 1988). Most estimates on which training is based predict high levels of demand regardless of the long-term economic outlook, thus leading to mistaken decisions and poor use of resources (Dougherty 1989).

Second, the income level of a country affects the success of training interventions. This is one of the most crucial elements to consider in decision making. Without a threshold level of national income, vocational programs cannot be successfully implemented over the long term. The more successful national training systems of Latin America, such as SENA in Colombia and SENAI in Brazil, are those in middle-income countries. The less successful attempts to establish national training systems are generally in the low-income countries.

Middle-income countries enjoy considerably greater potential than low-income countries for implementing training programs of all types. The overall resource level of middle-income countries is greater — their economies are more robust and their management capabilities more mature. They are able to develop the elements required for the successful implementation of training programs, including management systems, instructional resources, and evaluation and certification systems. The trainee population tends to have a higher education level; thus, a higher level of training can be offered. More placement opportunities exist for program completers; greater potential exists for linkages with employers; and employers are more willing to support training. These and other conditions make it possible for middle-income countries to offer a broad range of training options, from institution-based to enterprise-based programs (Middleton and Demsky 1988).

In contrast, low-income countries lack the material and human resources to develop strong capacities for program implementation. Administrative and management support for training programs is generally weak. Training programs are not able to recruit, train, and retain enough proficient managers to successfully run programs. At the institutional level, program implementation is also weak. It is difficult to recruit and retain qualified teachers because of low salaries; instructional resources are in short supply; curriculum development activities are restricted; and certification and evaluation systems are lacking. There is no capacity to experiment with and adapt programs. The unit cost of instruction tends to be high because projects are relatively modest and economies of scale cannot be realized. Project costs in low-income countries tend to be higher than in more affluent countries. Finally, enterprise capacity is underdeveloped, and employment demand is usually weak. Opportunities for collaboration with industry and business are limited, and virtually no possibilities exist for financial support from employers (Middleton and Demsky 1988).

Most A.I.D.-financed training projects are targeted at low-income countries. Project priorities are based on the perceived need for income and employment generation. While low-income countries may have the greatest need for training programs, they have the least capability for implementing such projects. The result is that programs are established but cannot be sustained. Project complexity usually exceeds the capacity for successful implementation.

Box II-1 summarizes the steps involved in assessing the implementing context.

Project Complexity

Project complexity directly affects project implementation and sustainability, as well as the choice of what kinds of training programs will be developed. The relationship between project complexity and the implementing context is crucial. Complex training projects require highly supportive conditions to be implemented successfully.

Complexity manifests itself in a number of different ways. At the institutional level, Fullan (1989, 21) observes, "Complexity can be defined in terms of (1) the number of components of

practice affected, (2) the magnitude of difference from existing practices and beliefs, and (3) the difficulty of learning the new practice." Complexity also depends on whether a project focuses on a specific activity (e.g., building a facility) or encompasses organizational development (e.g., strengthening management). In the former case, the specific activity is of primary concern, and, although the organizational structure is important, it remains in the background. The project tends to be more focused, stable, and amenable to completion within a set time frame. In the latter case, the amount of initial uncertainty is considerably greater; relations are complex and must evolve from the development process; and modifications involve changes in what people do and think. "Achieving successful change," Fullan (1989, 8) suggests, "is difficult because it must contend with a personal and collective learning process on the part of individuals working in an organizational context."

Over the course of the past decade, the range of project activities has broadened, both at national and donor levels. Project objectives have become more ambitious as emphasis has shifted from building and equipping facilities to system concerns, such as strengthening organizational structures, investing in instructional development, conducting teacher training, and fostering institutional improvement. This shift has been necessary in order to improve the quality and sustainability of projects. Without strengthened system and organization capabilities, specific donor interventions have a greater probability of failing (Middleton, Woldemariam, and Mayo-Brown 1986; Middleton and Demsky 1988; Dougherty 1989; Fullan 1989; Rondinelli, Middleton, and Verspoor 1989; Verspoor 1989).

Improving the way training organizations operate requires, in general, a greater emphasis on the development of the dynamic, and less certain, project components, such as human resources. Complex organizational requirements must be addressed, and interventions must be comprehensive and sustained over time. "International donors and governments of developing countries," observe Rondinelli, Middleton, and Verspoor (1989, 46), "soon discovered that those projects for improving the performance of educational systems are far more complex than those for physical construction."

Project complexity is also a function of the particular training mode as well as of the scope of implementation. Establishing and maintaining training centers, for example, is a complex undertaking. And when implementation occurs on a regional or national scale, the complexity of the project substantially increases because of the sheer number of institutions involved. Similarly, implementing a single employer-based training program is much simpler than addressing the needs of numerous employers. When a training program links public institutions and private firms, the complexity increases still further. In other words, as more organizational levels are involved, the scope and complexity of a given project increase significantly.

The administrative and management requirements of a project vary with its complexity. Less complex projects place demands mainly on the operating unit,

BOX II-1
Assessing the Strength of the Implementing Context

The probability of successfully implementing a particular training project is relative and depends mainly on the context, or environment, in which the program occurs. Donors have limited influence and control over the context; only marginal changes can be made in some factors. The most prudent policy option, then, is to assess the strength and stability of the implementing context and base programming decisions on this assessment. "Although judgmental, the assessments can indicate the degree of uncertainty, stability, and complexity likely to affect the implementation of a project" (Rondinelli, Middleton, and Verspoor 1989, 49).

Project selection and design require three critical steps (Herschbach 1985):

- First, donors and project planners must assess the implementing context to determine what conditions are present and operating in a supportive manner.
- Second, they must gauge the degree to which nonsupportive conditions can be changed.
- Third, they must carefully weigh the consequences of project implementation if the requisite conditions cannot be developed.

such as an individual training institution or placement center. As project complexity increases, major administrative and management requirements extend to line agencies, such as district educational offices; to support agencies, such as curriculum units; and to policy and planning agencies and groups, such as ministries or employer organizations (Verspoor 1989). The development of sufficient administrative and management capacity for project implementation may call for the development of organizational capacity at each of these levels. Project complexity must be accommodated in project design, and the choice of project activities must be based on an assessment of implementing capacity.

The relationship between the size and the complexity of a project is direct but not exact. Larger projects tend to be more complex because they involve a greater number of components, span a number of organizational levels, and embrace different and competing groups of individuals. When implementation capacity is lacking, it is crucial to reduce project size. Project size, however, is often determined by an assessment of the particular development "need," or by the desire to demonstrate support for a government or agency, and not necessarily by a full assessment of implementation capacity. Although project planners may examine the technical feasibility of project implementation, they usually do so in a perfunctory manner, undertaking little more than a general review rather than a detailed analysis of existing human and institutional capabilities. Project size and complexity should be based on an assessment of implementation capacity rather than on an assessment of needs, because needs will always exceed implementation capacity.

Given the low level of implementation capacity in many developing countries, A.I.D.- and other donor-assisted projects tend to be too complex. The projects have many objectives, some of which are too complicated or too ambitious to be accomplished given the proposed time frame and the existing resources. In over half of the A.I.D. projects reviewed, many of the objectives were not realized for this very reason (see Appendix A).

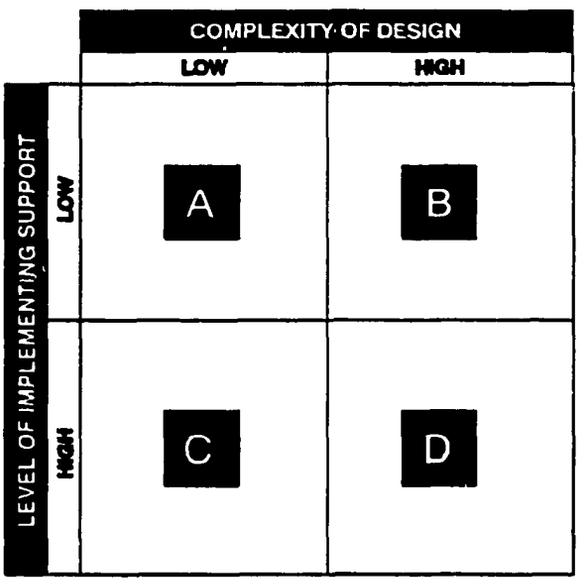
Relationship Between Context and Complexity

The relationship between implementing context and project complexity is critical, for it determines the degree to which projects will be successfully implemented. Complex projects have complex management requirements, and if the requirements far exceed the existing management capacity, there is little chance that project implementation will succeed. In that case, project design and scope must be altered.

As project design becomes more complex, understanding and accommodating the relationship between the implementing context and project complexity become more crucial. The following figure and discussion describe the possible levels of the relationship, and examples from the A.I.D. projects reviewed (see Appendix A) illustrate these levels.

FIGURE II-1

Project Outcome as a Function of Support and Design



Low Support/Low Complexity

Under conditions of low support and low complexity (A), the most likely project outcome is moderate success in the initial implementation phase, and the strong probability that the project will not be sustained after donor support is concluded. Because complexity is low, the project can be implemented successfully with the support and backing of the donor agency. But once this backing is withdrawn, the implementing environment is too weak for the project to survive on its own. (See example in Box II-2.)

BOX II-2
Low Support/Low Complexity

In the Small Business and Employment Generation Project, USAID undertook to improve the well-being of low-income youth in Quito, Ecuador, by expanding the opportunities for vocational training. The project provided assistance to the Quito Working Boys' Center for the design and implementation of pre-vocational training programs in carpentry and automobile repair, as well as in small business organization and management.

Although simple in its original design, the project ultimately failed when USAID increased the outputs expected from the training. Neither USAID nor the Working Boys' Center had the resources needed to meet the new targets. Over time, the quality of training and the physical condition of the new shops for carpentry and automobile repair deteriorated. In expanding the objectives of the project, USAID pushed the project beyond its own capacity to oversee and the host institution's capacity to implement.

Under these conditions, the most prudent policy option is a "permanent pilot" program (Verspoor 1989). Initial funding is modest, and the donor expects to remain involved for a considerable time. The donor cannot withdraw completely because the project would collapse. As long as the project is sustained by the donor, activities should not be expanded on a national scale.

The major benefit of the permanent pilot approach is that it allows for the introduction of a potentially useful innovation, thus demonstrating the possibility of change. The donor maintains its presence, while a small but effective cadre is trained and successful change demonstrated. At the same time, a more favorable implementing context can be cultivated. If this is achieved, then the project could move to incremental expansion.

Low Support/High Complexity

Complex projects should not be designed under conditions of low support (B) because of the high likelihood of eventual failure. An implementing environment that is already weak will be further stressed by the requirements posed by a complex project.

Because of perceived need, large and complex projects are often designed for countries with low implementing capacities. Although these countries have the greatest needs, they have the least ability to manage projects. Many A.I.D. projects are implemented under conditions of low support and high complexity, and the outcome is poor implementation and low sustainability. When project design is based on identified need rather than on an analysis of implementing capacity, this is the most likely outcome. (See example in Box II-3.)

BOX II-3
Low Support/High Complexity

The Manpower Planning, Training, and Employment Project addressed the need for a manpower reporting and planning system in Jamaica. The system would collect relevant employment data and supply them to planners, employers, and job-hunters. In addition, information would be provided to training institutions to help them better target their programs. As designed, the project was fairly complex, with six separate components to be completed in four years.

The project required different government and private sector organizations to coordinate the implementation of complicated activities. Without careful coordination, the project would not succeed. Sophisticated planning techniques were designed but could not be implemented. Complex tasks were undertaken with insufficient time and resources. In the end, government priorities shifted, and the project was left without host country interest or support. Most outputs were not achieved, and there was no follow-through on project activities.

Under these conditions, it is important to include elements that will enhance successful implementation. The best policy option is to design relatively simple projects with modest management requirements and sustained donor assistance.

High Support/Low Complexity

A scenario of high support and low complexity (C) offers the most promising set of conditions for successful project implementation. Interventions can be carried out over a relatively short period of time. Modest programs can be sequentially

expanded with a high probability of success as long as complexity does not increase and support does not diminish. (See example in Box II-4.)

BOX II-4
High Support/Low Complexity

In the late 1970s, Paraguay experienced a period of strong economic growth. There was a high demand for skilled workers and mid-level technicians and a large potential labor pool of unskilled laborers and rural workers. The Salesian Development Institute, a private voluntary organization with broad experience working among the rural poor, wanted to develop vocational training programs to prepare unskilled workers for jobs with industry.

USAID provided assistance to the Institute in developing and implementing training programs. Project objectives were clear and specific. The Institute was deeply committed to the project and had a strong management structure able to absorb its requirements. All objectives of the project were met. A successful training program was instituted — instructors trained, curricula developed, facilities improved, equipment procured. The Institute increased enrollment from 150 to 320 students, and 90 percent of the graduates went on to work in the fields in which they were trained.

Training projects conducted by private voluntary organizations have tended to be very successful. In general, these organizations have strong management structures and are highly committed to their target populations. The success rate of project implementation with private voluntary organizations is high due to the modest scale of activities and the strong support provided by the implementing agency.

High Support/High Complexity

Under conditions of high support and high complexity (D), success is likely only if the true complexity of project implementation is fully considered. Although support may be high, a training system's capacity to absorb rapid and complex change may be limited. Even under the best of conditions, institutions cannot absorb change faster than their ability to develop the required structures. (See example in Box II-5.)

BOX II-5
High Support/High Complexity

The vocational skills training system of Jamaica was spread throughout nine government ministries, resulting in a loosely structured, uncoordinated, and underfunded collection of training services. The Basic Skills Training Project was designed to upgrade certain elements of this system, coordinate activities, and strengthen ties to the private sector. Both USAID and the Government of Jamaica committed considerable financial resources to the project. The project had strong political support from the Prime Minister's office.

The project was highly ambitious and complex, with major components in three different government agencies. New activities involving planning, policy making, and training design and implementation had to be carried out in relatively short time periods, with no allowance for experimentation. The project placed extremely heavy demands on a management structure already weak and overburdened.

Because of government interference, project resources were concentrated in one component to the detriment of others. The output of semi-skilled workers increased, but the output of skilled and semi-professional workers in areas of critical need decreased. Overall placement rates for graduates from project-supported training academies were poor, ranging from a low of 3 percent to a high of 12 percent. Program costs were very high, making it difficult for the government to sustain operations once the project was concluded. Finally, the training system remains seriously underfunded, poorly managed, and only loosely linked with business and industry.

A strategy of incremental expansion, in which a complex innovation is adopted in stages, ensures a higher probability of success. Initial project goals are modest; considerable experimentation occurs with ongoing monitoring, assessment, and correction; and large-scale expansion occurs only after the implementing institutions have demonstrated the ability to perform. A relatively long period of time should be allowed for this process, with the final objective being comprehensive, large-scale implementation of the training program.

Policy Makers Must Broaden Range of Analysis

Policy makers are confronted with difficult investment decisions. Training investments must be sustainable as well as cost-effective. Both internal program efficiency and external efficiency must be addressed in decision making, requiring an understanding of the implementing context and of program complexity. Any type of training intervention can be implemented cost-effectively if the implementing context is supportive. The challenge faced by policy makers when making investment decisions about vocational training is to broaden the analysis to accurately assess the level of support from the implementing context and the degree of complexity in the project design.

III

Training Alternatives: Selecting the Appropriate Program

This chapter reviews the implementing requirements of the major training alternatives and their appropriate uses. Formal vocational programs are discussed first, followed by nonformal programs, both institution-based and employer-based, as well as the small, targeted programs that are often funded by donors to address special needs. A concluding section examines the training requirements of employers — small- and medium-sized employers in particular.

Although vocational education and training is an extremely varied enterprise, planners tend to think of training alternatives as located along a continuum that ranges from formal vocational education at one end to simple on-the-job training at the other. Metcalf's (1985, 9) comment is typical: "At one extreme is secondary school-based training. Next comes training in institutions like the vocational secondary schools in Israel or the Indian Training Institutes. Then comes the South American-type sandwich training of the SENAI or SENATI variety. Finally there is firm-based training. . . ." Furthermore, planners often assume that one form of training can easily be substituted for another, with the obvious choice being that form which yields the greater rate of return.

Both of these assumptions lead to faulty investment decisions. The idea of a continuum implies a continuity and a homogeneity that do not exist. Dougherty's observation (1989, 1) is germane:

> Training is infinitely more complex and diversified than formal education. Training providers are more heterogeneous and dispersed, course lengths range from hours to years, applications range from the purely manual to the most abstract. In imposing some order on this chaos, it is difficult to avoid what Claudio Castro calls the pitfalls of generalization and aggregation, the first being an unwarranted presumption that a particular training arrangement will be equally effective in other contexts . . . and the second being a tendency to neglect the variety of training provision that is masked by the use of such terms as apprenticeship or vocational education.

Training modes differ significantly in their implementing requirements. Establishing an in-service training program for new job entrants in an unskilled occupation, for example, is much easier than establishing a pre-employment training program for technicians. A less obvious source of divergence is the relationship between a training program and the implementing context — in an unsupportive environment, even a relatively simple training mode will be difficult to implement.

Another important way in which training modes differ is in terms of the training product. Certain kinds of programs are better suited to addressing certain trainee populations and their skill requirements. For example, although formal and nonformal training centers share similar implementing requirements, they perform distinct training functions. One offers pre-employment training; the other serves workers. Similar program types vary, also, according to the implementing agency. An apprenticeship program run by a local vocational center will be substantially different from one conducted by a trade association.

Planners must consider the real, if sometimes subtle, differences among program types in making investment choices if they are to establish a training configuration that is both cost-effective and functional. As a result of economic

development and diversification, a country's training needs change over time. Furthermore, developing countries follow very different development paths with correspondingly different training requirements. What works and is appropriate in one country at one time is not necessarily the best option in another country or at another time (Middleton, Ziderman, and Van Adams 1989).

Because workers and technicians can learn their skills in many ways, there are no simple answers to guide policy makers and donors as they choose how to invest in vocational education and training. The political and economic environments of developing countries are complex and uncertain, and the most prudent policy is to recognize the need for diverse training paths. Box III-1 sets forth key elements of a comprehensive vocational training policy.

BOX III-1
Key Elements of Vocational Training Policy

Planners and policy makers must consider five key issues in developing a comprehensive vocational training policy if it is to truly address the needs of a particular nation.

- ***Training for youth.*** The qualification profile of the majority of young people who will be seeking employment must be addressed. Skill formation, in whatever form it takes, must build on a solid foundation. The most successful vocational training policies emphasize the need to strengthen the basic education system so that there is a literate population that can profit from training. Vocational training policy should not be formulated separately from general policy to improve and expand primary and secondary education; vocational training is not a substitute for basic skills development (Salome and Charmes 1988). In countries where the skill base is weak and where youth have no opportunity to gain pre-employment vocational training, investments in training that complements general education are productive. Such training should be considered part of basic education, however, not specific skill preparation (McMahon 1988).

- ***Training for unskilled workers.*** The qualification profile of the unskilled, working-age population of a country must be addressed. In many developing countries, there is a large working population that lacks minimum basic skills. Such workers have had little opportunity to obtain formal schooling or participate in skill development programs. Economic development cannot be built on such a foundation. A comprehensive training policy must address the need of unskilled workers for basic skills development in order to profit from vocational training.

- ***Training needs of small- and medium-sized firms.*** Institutional structures and programs must be developed to meet the training needs of small- and medium-sized employers. Although these employers have the least capacity to train workers, they have the greatest potential to generate employment. "The predicament of Third World countries," Castro (1987, 606) observes, "is that industry is weak and so are its collective bodies." A comprehensive training policy must address the needs of small- and medium-sized employers and will involve using combinations of institutional and employer-based training as well as nontraditional forms (Fluitman 1989).

- ***Technology and training.*** The introduction of new technology must be given priority. Almost all new technology in developing countries comes from the industrialized nations (Westphal, Yung, and Pursell 1981), and training programs become obsolete if they make no provision for the introduction of new technology. Regardless of the training form, there must be a way of infusing instruction with state-of-the-art knowledge and technique. In some countries, the problem of retraining and upgrading existing workers may be greater than the problem of providing pre-employment skills training for new workers.

- ***Links between employers and training institutions.*** Finally, bridges must be built between employers and training institutions. Better articulation ensures a more constructive use of resources. The changing dynamics of labor markets require effective flows of information between employers and training institutions, so that training can truly address the needs of employers.

Formal Training Programs

Formal training programs are publicly financed programs administered by ministries of education — usually, but not exclusively, at the secondary level. These programs provide schooling for students who are judged less academically talented than those who attend academic high schools. Program completers are usually awarded a diploma; in some cases, they may be able to matriculate into higher levels of education.

Formal programs vary considerably in terms of the type of training offered and the student population served. Instruction ranges from general pre-vocational preparation to highly job-specific training, from three- and four-year programs to short-term training. One of the distinguishing characteristics of formal programs is the academic instruction provided, in contrast to nonformal centers and employer-based programs which focus on narrowly defined job skills.

The needs of large formal educational systems are so great that donor funds usually have little impact. Donor funds tend to replace, rather than enhance, government funds. In general, A.I.D. has provided only limited assistance to formal vocational programs. This is especially true in the Latin American and Caribbean region, where most middle-income countries have relatively well-established formal vocational programs. The trend in recent years among donor agencies has been to invest in nonformal training, particularly training centers and programs targeted to special groups such as unemployed women and youth (Middleton 1988; see Appendix A).

Implementing Conditions

Formal training programs require sustained development over a long period of time. Their maturation process is relatively slow — on the one hand because of the complexity of the training systems involved and on the other hand because of the unsupportive implementing contexts found in many developing countries. Implementing conditions must be favorable if formal training programs are to succeed. A particular program must be chosen for its potential to contribute to the overall social and economic development of the country.

Formal vocational educational systems are not considered cost-effective investments when:

- the economy is stagnating (Bowels 1988);
- programs are internally inefficient (McMahon 1988);
- students are boarded (McMahon 1988);
- programs are underenrolled and dropout rates are high (Bowels 1988; Moock and Bellew 1988); and
- curricula are outdated (McMahon 1988).

Most low-income countries do not have the administrative and financial capacity to successfully implement formal vocational educational systems (Chapman and Windham 1985; Middleton and Demsky 1988). Limitations imposed by budget restrictions are compounded by deficiencies in human resources. Shortages of qualified staff are common. These conditions contribute to poor instruction, which is one of the most serious problems associated with formal vocational education.

Under conditions of resource constraints, donors should make modest investments that have a high probability of being sustained. The training system should not be overexpanded. Alternate financing sources should be explored to support government investment, and cooperative arrangements should be developed with industries to share facilities and equipment and to exchange technology and instructors. In such programs, not only are costs reduced, but instructional obsolescence is also countered. The obsolescence of instructional content is a major problem in formal programs, which tend to lag six to ten years behind industry in equipment and technology (International Labor Office 1987).

In middle-income countries, formal vocational education programs can be successfully implemented if resources are sufficient to attract and retain qualified managerial and instructional staff, to provide instructional materials, and to link programs effectively with industry (Middleton and Demsky 1988; Dougherty 1989). Formal programs require high initial outlays of capital and concomitant supplies of recurrent funds. To maintain program quality, adequate annual outlays must be made for supplies, materials,

and maintenance. The availability of recurrent funding is a major factor affecting program quality, more so than the size of capital investment.

Successful formal programs provide training opportunities for their management staff and instructors. They establish professional certification systems and implement supervision and monitoring, linked to ongoing in-service training and institutional development (Herschbach 1989). The availability of instructional materials also contributes to the quality of training programs. Successful programs invest in the development of curricula and of instructional materials, and they are flexible in terms of course content, methods of instruction, and mode of delivery. Successful programs provide support services to assist students in making the transition from school to work.

General versus Specific Training

Much of the criticism of formal vocational training programs stems from the fact that the training is less specific than expected (World Bank 1986). This criticism is largely misplaced. As discussed in Box III-2, broad, general vocational training produces program completers who are more flexible and adaptable in the labor market. Instruction includes general education as well as technical content, thus schooling students in basic academic skills. Students gain the technical and theoretical foundation for more specific training that could be given just before actual job placement.

Standardized programs can be offered to relatively large numbers of students, most of whom would be too young to have made definite career choices. Standardization facilitates instructional development, makes it possible to achieve economies of scale, and allows students more options. Finally, obsolescence in staff and machinery and equipment, while not desirable, can be accommodated more readily. Skill-specific training can be gained at the worksite (Herschbach 1984; World Bank 1986; Educational Development Center 1989).

Overexpansion of the formal system in relation to the primary and secondary education base should be avoided. Overexpansion can result in underemployment, polarization, and emigration. It represents a poor use of resources, and other needed investments go begging. There are ". . .risks of economic over-specialization if more than basic cadres are trained in each vocational skill, with the resulting lower elasticities of substitution and attendant costs when shifts in

BOX III-2
Value of Formal Programs:
Laying the Foundation for Successful Workers

General programs should not be expected to result in high levels of direct job placement. They provide instruction in broad occupational fields, thus establishing the foundation for graduates to enter a number of related fields with a minimum of additional training just prior to or at the time of employment. Formal programs can achieve substantial flexibility in their graduates — an important asset in uncertain economic markets where labor needs cannot be estimated with any accuracy. As Dougherty (1989, 71) observes, "The broader and less occupation-specific the definition of vocational education, the greater the absorptive capacity is likely to be." Formal training, then, should be considered the first step in occupational preparation, not the end point.

Formal training programs are very much characterized by the nature of their student bodies; thus, admission policy plays a large role in defining the institution. Schools that enroll low-achieving students are characterized by poor quality training and poor student output; they are often unable to attract sufficient numbers of students to use their facilities fully. In contrast, schools that enroll a more balanced student population are able to offer a broader range of programs, have higher achieving students, enjoy a better reputation, and ultimately contribute more to meeting skill demands.

In Jamaica, for example, the technical high schools enroll students who represent a broad range of abilities. Students are prepared in equal numbers to enter the labor market or to go on to higher education. These schools provide an excellent preparation for students to enter such technical professions as engineering. The technical high schools in Jamaica are able to attract a wide range of good students into vocational programs by keeping open the option for further education; the schools are thus able to maintain high enrollments and high standards.

the structure of demand and technical change occur" (McMahon 1988, 191).

Many students in developing countries do not possess the basic skills needed to profit from vocational training or to realize their full work potential. This deficit in basic skills inhibits vocational development, both at school and at work. Rates of return studies consistently show positive results for investments in primary education (Colclough 1982; Psacharopoulos and Woodhall 1985). If a choice has to be made between basic education and vocational education, basic education is clearly the better investment option. Probably the greatest contribution to human resource development that formal training institutions can make is the assurance that students have a solid grounding in academic skills and in the vocational application of those skills.

McMahon (1988, 191) goes on to argue that "if there are no vocational and technical courses for students who are leaving school at each level, capstone vocationally-oriented courses complementary with the general education can be quite productive and the benefits are likely to outweigh the costs." In addition, in the case of countries in which there is not a developed skill base, "some formal technical education embodying the relevant technology would appear to be essential, even when the longer run returns are not fully reflected in current earnings."

Short courses appear to have higher rates of return than do long courses (Metcalf 1985). Some evidence suggests that students who enroll in vocational programs after completing elementary school have higher rates of return than students who enroll after having taken some secondary schooling (Metcalf 1985). One effective program pattern is short, ad hoc training provided in collaboration with employers. The equipment of participating firms is used; training is given in the institution or at the worksite; and trainees are placed with the participating firms for work experience. Once the need is met, the program is phased out (Herschbach 1988).

Highly job-specific training tends to be narrow in scope. It equips the student to be immediately employable in a specific job category, but results in limited occupational mobility. While employment prospects may be good in labor markets with high demand, under conditions of low demand individuals are handicapped in the job search because their options are so restricted. Because training is given in only a limited number of specialized areas, fewer initial resources are required; thus, highly specialized programs can be less costly than more general programs. To be effective, however, the training content must be kept current, a need which requires frequent program updating. In few cases, however, is this done, and rapid program obsolescence is common in highly specific training programs.

Links to Employers

In general, formal training programs tend not to have strong links to employers, despite the conventional assumption that they should. Consequently, there is often a significant difference between the number of program graduates and the number of job openings in a given field. Employers are often reluctant to hire new graduates whose qualifications are unknown. Useful labor market reporting systems are not available in most developing countries. In any case, labor markets are highly unpredictable in the short and medium term, making it difficult to adjust training programs to the needs of employers.

Even if these needs could be determined with some reliability, formal programs would still lack the flexibility to adjust to changing demands. Once a formal training program is established, its capacity to adapt to changing labor market signals is generally very small. The considerable size of the original capital investment restricts the ability to reinvest. In addition, permanent instructional staff would have to be reassigned or retrained and curricula revised or developed.

Training programs that have work experience components are more effective in adjusting to labor market needs. The number of people to be trained is set by the number of placements available in cooperating firms. There is, therefore, a self-adjusting mechanism that requires little outside labor market information. What information is needed comes directly from the employers. The closer the link to direct job placement, the less need there is for general information relating to job openings, skill requirements, and trends. In weak economies, however, employment opportunities often are so limited that it may be difficult to implement a work experience component.

Job placement rates, and hence external efficiency, can be increased by building placement components directly into training programs. Many of the difficulties that young people initially experience in finding jobs are due to their inability to locate within the labor market. The job placement rates of program completers are higher when institutions facilitate contact with employers (Lewis et al. 1982). On the other hand, Bowels (1988, 33) argues that "placement assistance is a necessary component of training programs only when the economy is not growing."

Successful training institutions establish strong community links which help to build the school's identity and foster public support (Corcoran and Wilson 1986). They form links by establishing public relations programs, forming advisory committees or employer associations, using job placement or job development officers, and seeking feedback from employers on a regular basis. Job information is especially important to training institutions in a number of ways. Schools need to know about the skill requirements of local employers in order to shape their curricula as well as to plan how many students to enroll. Through close working relationships with local employers, successful programs are able to gain the information they need for course design and revision. In this way, instruction is directed at the actual requirements of employers.

Nonformal Training Programs

Nonformal training is often thought of as an alternative to formal training. Rarely, however, is this the case. Nonformal training serves broader populations; its purposes and formats are much more varied and flexible. Nonformal programs are managed by a broad spectrum of institutions, ranging from government ministries, such as ministries of labor or community development, to private voluntary organizations. These programs incorporate a wide range of training activities and much variation in instructional personnel and clientele. Because of this variation, the management requirements of nonformal training programs are complex; financial control and administration are often spread among several different organizational levels of a ministry or among several different agencies.

Of the many different kinds of nonformal training, two are reviewed here because of their importance to the Latin American and Caribbean region – institution-based programs and employer-based programs. In addition, the targeted programs funded by A.I.D. to address special population groups are discussed; many of these nonformal training activities are small parts of large general programs, such as literacy or employment generation (Romain and Armstrong 1987).

Institution-Based Programs

There are several patterns of institution-based training. In general, a national training authority – such as SENA in Colombia (see Box III-3) or SENAI in Brazil – administers training centers that provide services to a range of employers. In addition to regular courses, these centers may offer formal apprenticeships combined with classroom instruction; short-term, specialized courses; on-site upgrading; and conferences.

BOX III-3
Colombia's National Training System: An Exemplary Program

Colombia's national vocational and technical training system, SENA (Servicio Nacional de Aprendizaje), is one of the most respected training systems in the developing world. It offers a very broad range of programs, from basic skills training to specialized technical training. Training includes traditional apprenticeship programs, technical skills upgrading, and management and entrepreneurial training. SENA trains some 600,000 participants annually from all sectors of the economy.

Under the direction of the Ministry of Labor, SENA conducts its activities in a decentralized manner through nineteen regional offices that identify local training needs and conduct the training programs either in centers or in plants as appropriate. The regional offices operate some 75 training centers, 120 community centers, and 60 mobile programs that reach into isolated, rural areas. SENA is financed through a payroll tax collected by the regions; 80 percent of the funds collected in a region go to the regional office of SENA and 20 percent to the national office.

Nonformal training centers are able to gather and disseminate information in a manner that individual employers cannot by themselves. Training centers often involve employers in their planning so that they can improve training by drawing on the knowledge of advanced technology and training resources that successful firms have. Training centers are particularly useful to individual firms that cannot support their own training programs. Training centers may provide one of the most practical ways of addressing the skill needs of small- and medium-sized employers (Castro 1979; Corvalan 1979; Ducci 1980, 1983; Herschbach 1984; Dougherty 1989). Box III-4 examines the rates of return of nonformal training.

BOX III-4
Rates of Return on Nonformal Training

Economists have found that many different types of nonformal training show high enough rates of return to justify investment. The crucial factor is how well the programs are implemented.

Cohen (1983) examined three types of training — the two-year basic program, job-entry training, and apprenticeships; all appeared to yield returns in the range of 20 percent. Studies of SENAI in Brazil, INACAP in Chile, and SENA in Colombia show rates of return ranging from 12 to 20 percent (Arriagazzi 1972; Castro 1979; Puryear 1979; Jimenez and Kugler 1985). These rates are roughly equal to the rate of return of 11-13 percent that is expected for investments in physical capital (McMahon 1988). Psacharopoulos (1982), however, found that SENATI in Peru had negative rates of return. Horn and Jimenez (1987) found that among the self-employed in Colombia, the earning differential for those individuals with four months or more of training in SENA was about 12 percent. Among private salaried and public sector workers, long courses at SENA were complementary to primary education and substituted for secondary education. Among the self-employed, SENA training substituted for education at all levels.

Jimenez and Kugler (1985) also documented the complementary effect of SENA training. For an individual with eight years of formal schooling, the earning premium was only 4 percent, but for an individual with twelve years of formal schooling there was a dramatic increase (24 percent) in the earning premium. Decision makers, Jimenez and Kugler (1985, 27) suggest, "... should not be alarmed when academic graduates take SENA courses. This is not a redundancy. On the contrary, the effectiveness of SENA appears to be magnified by complementary investments in human capital."

During the past decade, several significant shifts have occurred in the services provided by the national training systems of Latin America:

- Less emphasis is placed on pre-service training and more on upgrading individuals already employed. This trend acknowledges the need of employers to upgrade the skills of their existing workers.
- A greater emphasis is being placed on training supervisors, middle managers, and technicians, involving a shift away from programs that prepare skilled and semi-skilled workers.
- Training is provided either at a center or at the worksite; recently, more training is taking place at the enterprise itself, with the center playing a resource and coordinating role.
- Training centers are giving series of courses, allowing workers to progressively upgrade their skills in response to changing work demands.
- More training activities are being targeted at small- and medium-sized enterprises, which have the greatest training needs.
- Finally, the training systems are broadening their activities to include nontraining services, such as consulting and technical assistance, that are essential to employers if they are going to make full use of training.

Following the pattern of the more established national training authorities in the larger South American countries, many of the Central American and Caribbean countries have attempted to develop extensive nonformal training systems. The results have been considerably less successful. In most cases, the administrative, managerial, and technical demands have been too great for successful implementation (see Box III-5).

The conditions required for the successful implementation of nonformal training institutions differ little from those required for formal institutions. The first and foremost

BOX III-5
National Training Agencies in Central America and the Caribbean

In the 1960s and 1970s, the nations of Central America and the Caribbean established their own national training agencies. These countries have less well-developed training traditions than the larger countries of South America. Their economies are weak, their resources for training are restricted, they are unable to achieve economies of scale in training because of their small populations, and links with employers are tenuous. In addition, the governments of the Central American and Caribbean nations have tended to exert great control over the training agencies, which often leads to high training costs, inefficiency, and low quality. In small low-income countries, it is difficult to achieve the same degree of success attained in the larger countries of South America.

factor is the income level of the country. As previously stressed, it is extremely difficult to establish any form of institution-based training in low-income countries. The formal employment sector is relatively small, with limited placement potential, and overall implementation capacity is weak. Middle-income countries, though, have considerably greater implementation capacity, particularly when the training institution is part of a national training system (Chapman and Windham 1985; Middleton and Demsky 1988).

Like formal institutions, nonformal training institutions must focus resources on strengthening program components, including trainee selection, teacher training, instructional materials, management, evaluation, and placement. The major difference between formal and nonformal systems concerns the organizational structure, not the program elements. If it is difficult to implement formal training programs in a particular country, it will be equally difficult to establish nonformal institutional training. "Indeed, the evidence suggests that secondary schools are somewhat easier to put in place than nonformal centers" in low-income countries (Middleton and Demsky 1988, 87).

In general, nonformal institutions have closer links with enterprises than formal institutions do. Employers and worker groups are represented on executive boards (see Box III-6), and many of the training activities involve collaborative efforts. In some of the Central American and Caribbean countries that have attempted to follow the South American model of national training systems, however, governments tend to control financial resources and policy decisions. This appears to contribute to high training costs, inefficiency, and low program quality (Kelly et al. 1985; see Appendix A).

BOX III-6
Role of Employers and Workers on Governing Boards

The pattern of representation on the governing boards of nonformal training institutions is important. Positive government policy toward the critical issues of equity, efficiency, and effectiveness in economic development is expressed when employer and worker representatives have equal or majority membership with government representatives. Of critical concern is the control of resources. If employers and workers have a major voice in the allocation of resources, the likelihood is greater that funds will be used for their intended purposes. In decentralized systems, governments are less likely to control the use of funds. In particular, co-financing agreements with industry can generate additional income for training as well as contribute to greater financial accountability.

Overcentralization threatens the institutional flexibility that makes nonformal institutions effective. Nonformal training institutions can get bogged down in bureaucratic inefficiency as easily as can formal institutions. "The dependency of individual training centers on allocations from an agency budget imparts a bias towards overcentralization," Dougherty (1989, 60) observes, "and this is often enforced by political or institutional factors."

Nonformal training does not have any cost advantages over formal training; in fact, the unit costs of nonformal training may be higher. Faced with the need to provide a variety of specific programs tailored to the needs of relatively small groups of participants, nonformal institutions often cannot achieve economies of scale. In addition, higher program development and management costs should be expected because programs need to be upgraded regularly

to address the changing skill requirements of employers. Nonformal programs typically cost more than comparable formal programs (Zymelman 1976; Castro 1979; Corvalan 1979; Herschbach 1984). "The costs of establishing nonformal training places have been about twice those of secondary places in low income countries" (Middleton and Demsky 1988, 87).

Like their formal counterparts, nonformal training institutions must confront the problem of program obsolescence. Old or outdated equipment cannot be easily discarded. Staff must be retrained, curricula revised, and new instructional materials developed. Maintaining close links with employers is particularly important to counteract obsolescence. Employers provide guidance on course development, placement assistance, and feedback on the performance of program completers. Pre-service training should not be emphasized at the expense of upgrading and retraining. These two functions may represent the greatest training-related needs of employers, although they tend to be the most costly and difficult services to provide. If nonformal training institutions fail to maintain effective links with employers, they quickly lose the support of employers and, consequently, the major reason for their existence.

Employer-Based Programs

Employer-based training includes all programs for which the firm takes responsibility. Most vocational training conducted today in developing countries is employer-based. The output of such programs far exceeds the number of trainees produced by all other forms of training. Training may take place off-site — for instance, in a technical institute or community college — but it usually takes place on the premises of the individual firm.

Firms carry out most of their training through informal on-the-job training. Short-term courses, primarily for upgrading purposes, and structured apprenticeship programs are two training patterns typical of employer-based training. Low-level, unskilled jobs require little organized training, while higher-level semi-professional and professional positions require training best provided through organized programs or formal institutions.

The cost of employer-based training is largely borne by the trainees, their families, or their employers. To provide formal or nonformal training on a similar scale would require considerably greater national investment than many governments are able to afford.

Firms use retraining programs to address a number of skill needs. Their greatest need is to retrain and upgrade workers in order to achieve better quality and productivity. This is particularly true in the case of firms that use intermediate or advanced technology. Regular in-service training programs help keep firms abreast of new developments in complex technology.

Salome and Charmes (1988, 9-10) point out that Asian countries with economic structures ". . . characterized by mainly low value-added activities such as those found in the informal sector, and garments and textiles, food, and electronics in the manufacturing sector . . ." have little need for in-service training programs. However, as the economic structure of a country matures and becomes more sophisticated and diversified, the need for in-service training becomes greater, along with the need to accommodate a different skill mix among workers. Countries that are developing economic structures characterized by high value-added activities — such as computers, precision instruments, and telecommunications — need highly skilled and trained workers and, therefore, highly specialized and diverse in-service training systems.

In general, there are few firm-level analyses of the costs and benefits of training, primarily because training costs are difficult to disaggregate (Metcalf 1985). Employers recognize the importance of training, but only if it directly contributes to improved quality and increased productivity. Box III-7 lists the conditions under which training should be conducted at the worksite or off-site.

Large firms have fewer problems retaining skilled staff and thus have more incentives to provide training. They can pay good wages, promote within the firm, and offer more job security and better working conditions than can small- or medium-sized firms. Moreover, as Salome and Charmes (1988, 64) suggest, large firms can establish a ". . . more technically elaborate staff

management policy which encourages career opportunities, retraining and advanced training and transfers among different activities within the same firm." Large firms also have the resources to conduct training, and they generally have access to training networks for their industry.

Small- and medium-sized firms experience the most difficult training-related problems. They generally do not have the resources to invest in training, since they operate on a relatively low profit margin. The benefits of training are also uncertain. Trained employees may leave for other jobs; some may even start competitive businesses. Small firms also often lack the capacity to make full use of trained personnel. Finally, small firms tend to look for quick solutions rather than devote much time to the development of training programs.

Specialized Programs

Nonformal training projects are attractive to donors because of the great variety in programming options. Donors can target specific problems – such as women in development, income-generation, or literacy – through specialized programs. Projects can be relatively short-term, with a donor's activities phased out over a four- or five-year period, thus eliminating the need for a long-term commitment and increasing the ability to respond to policy changes. The set of project activities, moreover, may be relatively self-contained. This makes it easier to set up organizational and management structures outside of regular bureaucratic channels. Box III-8 describes one such specialized program.

However, the fact that specialized projects are separate from established government operations often creates problems in implementation. Not only must functioning organizational and management structures be set up, but effective links with government operations must also be established. Because these projects are seen as short-term and outside of regular channels, they have difficulty achieving the degree of commitment and support required for successful implementation. In general, the implementation record of specialized nonformal training programs is no better than that of other forms of training (see Appendix A).

In the case of specialized training activities, needs assessments are essential. Only through needs assessments can the interests

BOX III-7
Determining the Optimal Training Site

It is best to provide training at the worksite, if (Greig 1989):

- the equipment is highly specialized and unique to the firm;
- large numbers of employees are to be trained and external training arrangements are expensive;
- the jobs being trained for require relatively low levels of skill and knowledge;
- the skills involved are highly specific to the operations performed, the work is neither simple nor routine, and the training is clearly associated with a specific bottleneck within the firm; or,
- the purpose of training is to improve the performance of supervisory and management staff, or it is for promotional purposes. In-house training can better address the social climate within the firm.

It is best, however, to provide training outside of the firm, if (Greig 1989):

- the technology involved is new and the number of specialists within the firm are few;
- it is best not to use the actual equipment in training because it is highly complex, expensive, or dangerous;
- the focus is on the acquisition of knowledge rather than the application of knowledge within the firm;
- the number of people to be trained is small, learning time is short, and the occupational level is high;
- the trained individual is to train others upon returning to the firm;
- strategic management knowledge is lacking within the firm; or,
- the purpose of training is to develop a strong basic foundation in technical knowledge to be used later in a more specialized form within the firm.

BOX III-8
Specialized Program for Income Generation

USAID funded the Small-scale Regional Development Project in Chile to support a local private voluntary organization (PVO) that had lost its funding from industry during an economic downturn. The PVO concentrated its activities on generating employment for the rural poor through the design of new productive ventures. With modest USAID support for technical assistance, feasibility studies, and the development of a prototype small-scale enterprise, the PVO was able to secure government funding.

This specialized project in nonformal training was successful because support for it was strong, its activities were well defined, and client involvement was high. The needs of the PVO had been accurately assessed, and the PVO had the institutional capacity to implement the project. In the end, critical project activities became self-sustaining, profitable, and capable of generating local employment.

and requirements of potential participants be evaluated. Participants in specialized programs often are volunteers and have mixed motives for attending. Specialized programs may have to compete with other activities for the trainees' time. In addition, it is necessary to determine whether a nonformal program is the best option for meeting a particular training need, whether the proposed program is cost-effective, and whether it has the potential for placing graduates in jobs. "While the conduct of such an analysis does not guarantee project success," Romain and Armstrong (1987, 17) observe, "it reduces the large area of risk inherent in NFET [nonformal education and training] operations in new areas."

Failure to conduct a needs assessment is associated with poor program performance. The Training and Advisory Center for Women in Santo Domingo, Dominican Republic, for example, made no assessment of the employment potential for program completers. Consequently, while the demand for training was heavy, participants were unsuccessful in getting jobs (Dore et al. 1987). The Social Services Training Program in Morocco established handicraft training centers before it determined whether a market existed for the craft products or who the potential training population should be (Bredie and Abou-Sayf 1983).

Client participation is important in specialized programs. Clients include several groups — those using the services of the program, local implementors such as administrators and teachers, government officials, and donor personnel. In the early stages of implementation, it is particularly important to encourage participation because the goals of the program may be unclear, the program itself weak, and staff inexperienced. Support is needed to overcome these problems. External support can help to build internal commitment; government support is particularly important. Verspoor (1989, 107) found that ". . . there were no successful World Bank projects to which the government was not committed." Each organizational level involved must be committed to the project. The responsibilities of participating agencies for key project components must be clarified to ensure that all project activities are covered.

In successful projects, the institutional capacity for implementing nonformal training programs was nurtured. Programs cannot be successfully implemented within existing organizations unless the capacity of these organizations to achieve program objectives is also strengthened.

Specialized programs tend to draw their instructional staff from many different sources. Qualification standards may not exist, and instructors may lack formal training and teaching experience. This is particularly true of teachers selected from business or industry. For these reasons, training of instructional staff is essential, as is regular and systematic supervision of instruction.

Sufficient recurrent financing is often lacking for the implementation of specialized training programs. Constraints in recurrent budgets lead to low project performance. Key project components are often deleted during implementation. Nonformal training projects are particularly vulnerable to financial downturns, as they are often the first to experience budget cuts. "Formal education not only takes first place — sometimes to the exclusion of planned associated NFET activities — but even often replaces planned NFET institutions. Particularly vulnerable are those NFET components which are closely linked with the implementation of formal programs" (Romain and Armstrong 1987, 16).

Responding to the Needs of Employers

Although donors are interested in responding to the training-related needs of employers, relatively little is known about the link between employment and training from the employer's perspective. Most discussion has focused on the different forms of training and how to improve efficiency. Considerably less attention has been given to employers and their expectations of training.

Employers rely on outside sources of training for three kinds of workers:

- workers who are adaptable and able to absorb training within the firm;
- workers who bring required skills with them; and
- workers who bring new skills into the firm.

Most new employees fit the first category. For these individuals, most training programs tend to overemphasize technical skills. Workers in this group require pre-employment training in basic skills. Investment in basic skills -- the ability to read, write, and do simple arithmetic -- enhances development in general, and employers place a high value on those skills (Nuñez and Russell 1982; Pratzner and Russell 1984; Wade 1984).

Employers also express concern about workers' attitudes, motivation, and understanding of the work world. Richardson (1981) synthesized the results of a number of studies and concluded that employers expected young employees to have basic academic and communications skills, an ability to interact with fellow workers and superiors, and positive attitudes towards work. Owens (1983) examined job deficiencies identified by over 800 employers. Three major areas of concern were identified: (1) poor basic skills, particularly in oral and written communication; (2) poor work attitudes; and (3) insufficient orientation towards work and business. These findings support conclusions reached by other studies (Chapman and Windham 1985; Cuervo 1985; Herschbach et al. 1985; Kelly et al. 1985).

A smaller but essential group of new employees is made up of those individuals who possess specialized technical skills and bring these skills with them to the employing firm. Smaller employers in particular expect new entrants to have skills at the required proficiency level (World Bank 1986); they do not have the time or resources to train new employees. Reaching such skill levels involves highly specialized training of short duration best given just prior to employment. Short-term courses through nonformal institutions, such as SENAI and SENA, may be the best training mode for this group.

The most critical need among employers is for individuals who can bring new technical skills into the firm. Most technological innovations in developing countries come from abroad (Westphal, Yung, and Pursell 1981). The best training investment a donor can make may be in small, specialized, technologically sophisticated training programs that produce a cadre of innovative, competent individuals who can fulfill crucial skill development needs.

In general, large firms do not need much training assistance. They have the money and staff to establish their own training programs. Large firms have close connections to international firms and trade associations and, thus, have access to training resources. Large firms can recruit sufficiently qualified staff because they offer better job security and better working conditions. Most large firms expect new employees to possess generic basic and vocational skills; the firms take responsibility for specific skill training once individuals have been employed. This is particularly true of firms with internal labor markets -- that is, firms in which individuals gain promotion through experience and training within the firm (Dougherty 1989).

Small- and medium-sized firms experience the most difficult training-related problems. Addressing their needs may be one of the more important challenges now facing developing countries. Small- and medium-sized enterprises make up a significant component of the industrial sector in most developing countries, amounting to as much as 50 percent of industrial employment and 90 percent of the total number of manufacturing enterprises in some countries. In urban areas, the informal sector may comprise up to 70 or 80 percent of economic activity. In rural areas, where the majority of people are dependent on agriculture, small-scale enterprises make up the largest employment sector. Such enterprises may be the only source of

employment in many areas (Lindholm and Mead 1987; Davis 1988).

Many of the training programs that have been implemented in developing countries, however, are suitable only for large-scale modern enterprises. Such programs were adapted from developed countries where they were effective in formal economies. A number of conditions are associated with the provision of training for small enterprises in the informal sector, and unless these are satisfactorily addressed, training will not be effective. For example, the "conventional" supply-demand planning model based on economic forecasting focuses on modern sector employment, while job expansion and training needs largely occur in the informal sector. Similarly, the occupational categories used are inappropriate because they relate to staffing patterns in developed countries and formal economies. Training for local firms needs to be based on local data and must relate to the job structure found in small firms. National assessments do not provide this kind of information.

The training needs of small- and medium-sized employers are immediate and highly firm-specific. These firms need employees who can start work immediately. It is difficult to provide the specialized training required in large enough groups at the time training is needed to achieve reasonable levels of cost-effectiveness. The greatest need may be for skill upgrading rather than entry-level, pre-employment training.

In general, training institutions have little communication with small- and medium-sized employers. Employers may have only a general awareness of training services and often have too many other concerns to seek out information about training. For these reasons, successful training programs market their services to employers.

Training services cannot be provided alone. They must be integrated and coordinated with other services that small- and medium-sized employers require in order to effectively use training. The need for capital, for example, may overshadow a concern about training. Typical constraints involve energy, transportation, capital, raw materials, and other intermediate inputs (Dahlman, Ross-Larson, and Westphal 1985). The failure to identify local constraints to production and marketing may be a greater problem than the failure to identify training needs. Until these concerns are addressed, training will remain of secondary importance (Bremer et al. 1985; Grindle, Mann, and Shipton 1987).

Four components in various combinations are widely found in most programs designed to assist small and micro-enterprises: (1) financial assistance, (2) technical assistance (often referred to as extension), (3) social promotion, and (4) training (Grindle, Mann, and Shipton 1987). Unless training is combined with a package of integrated initiatives designed to address financial, production, and marketing concerns, it cannot be fully effective, and employers may opt not to use available training services (Marsden 1984; A.I.D. 1987; International Labor Office 1987).

Generally, donor agencies such as A.I.D. do not work directly with firms in the delivery of training, particularly in the case of small- and medium-sized firms. There is no good way to provide services directly, and administrative and management channels do not exist. The most successful donor strategy has been to work through intermediary service providers (see the example in Box III-9). Development specialists agree that one of the most effective ways to assist small- and medium-sized employers may be to strengthen private, intermediary service providers that in turn work directly with employers. Once local capability exists, development is sustained as market forces come into play (Marsden 1984; Grindle, Mann, and Shipton 1987).

BOX III-9
Responding to the Needs of Employers

One of the more promising projects aimed at providing direct assistance to employers is the Honduran Advisory Council for Human Resource Development (CADERH). Established in 1984 to address private sector training needs, the USAID-funded organization has evolved into a service center with an independent board of directors and staff.

CADERH develops instructional materials and certification tests designed to bring quality and standardization to training. It produces multimedia training materials and conducts in-plant needs analyses to identify training requirements. The Training Materials Bank disseminates the materials developed by CADERH and serves as a clearinghouse and source of training materials for training centers and firms. A training loan fund is being established, so that firms can finance training activities. Private sector firms and ten training centers are participating in a program to train instructors in the use of the competency-based training materials and strategies developed by CADERH.

The limited application of CADERH training to date shows a productivity increase of as much as 15 percent. In training centers that use the CADERH instructional materials, the results are positive, with a reduction in instructional time of as much as 50 percent, a program retention rate of 80 percent, and a job placement rate of 70 percent. The cost averages about $0.25 per person-hour of instruction.

Although CADERH operates on a cost recovery basis, a modest but stable amount of funding will be required to sustain operations over the long term. There are no examples of service centers that successfully finance their operations through user fees alone; an additional source of income is essential, whether from the government, employer groups, or foreign donors. Development support of CADERH, moreover, must continue for at least a decade.

IV Internal Efficiency: Improving the Quality of Training

The challenge faced in most developing countries is the qualitative improvement of programs, not their expansion. Donor agencies in general have not solved the problem of establishing sustainable training programs of high quality. This is a result not only of the failure to adequately assess the complexities of the implementing context, but also of the failure to strengthen key program elements. All training programs are embedded in a system, and individual program elements must be successfully addressed along with overall system requirements. "While the complexity and requirements of the system vary depending upon the institutional form and country context, the common requirement is that the total system must function in an integrated way in order to produce satisfactory results. When this is not achieved, the outcome is inefficiency and poor-quality training" (Educational Development Center 1989, 44).

This chapter discusses how to improve training quality — that is, internal efficiency. First, at the operational level, three key elements are examined that have a decisive impact on program quality and sustainability: management development, instructional staff, and instructional materials. Then the total system requirements of training programs are discussed.

Key Elements at the Operational Level

Training programs can be successfully implemented only when projects strengthen organizational structures and address key elements. Of crucial importance is the operating unit, whether it be a training center, an employer-based program, or a training activity conducted as part of a larger project.

Training programs of whatever form are complex operations. A number of components must function effectively in order for instruction to be delivered successfully. For example, to keep a physical facility operating there must be a purchasing plan for supplies, materials, and equipment; a long- and short-term maintenance schedule for machinery, equipment, and buildings; a monitoring and security system for tools and supplies; and a daily schedule for cleaning laboratories. In addition, there are the other tasks associated with instruction, such as the development of instructional materials, the supervision of instruction, and the monitoring of student progress. Regardless of the organizational form, project design must adequately address all of these components.

The most successful training projects are those that place high priority on strengthening management capacity and upgrading the quality of instructional staff (Verspoor and Leno 1986; Fullan 1989; Verspoor 1989). Another key variable is the supply and quality of instructional resources. Projects tend to fail if these requirements are not adequately developed at the operational level.

As A.I.D. has broadened its project activities from the provision of buildings and equipment to include institutional development, project complexity has increased. There is greater need for donors to focus on the development of human resources. Although program quality requires an adequate level of material support, human resources are essential to achieving project objectives. In fact, the greatest benefits may result from investments in improving the quality of management and instructional staff.

Management Development

Management development is a universal problem which has reached critical proportions in many developing countries (World Bank 1986, 1988). In low-income countries with weak infrastructures, management becomes an even more important variable than usual. The presence of

management capability is a precondition to successful project implementation and sustainability. The choice of project size and complexity should be conditioned by the degree of management capacity that exists and that can be further developed (Auerhan 1985; Herschbach 1985; Middleton and Demsky 1988; World Bank 1988).

Research studies show higher achievement levels in schools with more effective management systems. As much as 30 percent of the variance between schools can be accounted for by local school characteristics. More effectively managed schools consistently have more impact than do less effectively managed schools that have similar resources and that serve similar student groups (Rutter et al. 1979; Rowan, Bossert, and Dwyer 1983; Rosenholtz 1985; Corcoran and Wilson 1986). In addition to higher levels of student achievement, better management makes cost savings in material resources possible. In the case of laboratory instruction, for example, poor management results in considerable loss in tools, equipment, materials, and physical plant components.

In the 24 A.I.D. projects reviewed (see Appendix A), management constituted the single most frequently cited problem with regard to project implementation; 21 of the projects experienced management problems. In 15 of the projects, the problems were serious enough to result in failure to achieve a number of project objectives. Management problems were so extensive and varied that they often dwarfed all other project concerns. Poor management was associated with all parties involved — the USAID mission, the host country, and the contractor.

In the case of USAID, project managers do not always have the background or the time needed to oversee projects effectively, particularly when complex local conditions must be addressed. Changes in personnel result in a short-term approach to project management with significant breaks in continuity. New managers go through a costly learning process, and USAID managers lose control if project responsibilities are assigned to host country personnel.

In the case of the host country, management capabilities may be lacking at some or all of the organizational levels involved. This results in significant delays and poor performance. Donors often impose complex projects on weak management structures without providing for building management skills or for enabling counterparts to learn management skills. Project planners assume that local staff will learn management skills on the job, and projects are initiated before staff receive any training.

In the case of contractors, delays and poor performance also constitute the two major management problems. Contractors generally are not concerned with either the overall management problems of a project or its potential for long-term success. Their primary concern is to fulfill their specific obligations as quickly as possible. Host country organizations with weak management structures are often unable to benefit from contractors' services.

In the early stages of a project, the existence of an organizational and administrative infrastructure is particularly important. Project implementation is contingent on the successful development and strengthening of this structure; projects must devote attention and support to management issues. Management capability is most crucial at the beginning, when poorly made decisions can seriously harm a project and when some of the most complex management problems are likely to arise. However, management development should be an ongoing process.

Management development must occur at each of the organizational levels involved in a project. Different kinds of training programs obviously have different management requirements. In general, training centers, both formal and nonformal, are the most complex institutional form. All types of training programs, however, entail complex management tasks to maintain physical resources, provide support systems, and establish links with business and industry.

At the operational level, management training must focus on all levels of staff, including administrative, support, and instructional personnel. Staff duties must be well defined, coordinated, and integrated into the operating unit. Management training is usually concentrated at the upper administrative levels, although major program functions are carried out at the instructional level. If there is a weakness in the training system, it should not be at the instructional level. This is where the greatest destruction to tools, equipment, and physical plant occurs, often because of poor management, and this is where projects have their major impact.

In most developing countries, there are few opportunities for acquiring training and experience in the management of vocational training programs. In general, administrators are recruited from academic programs. Vocational programs, however, have substantially different management requirements, and academic administrators are not necessarily qualified. Administrators need to gain experience in the organizational context in which they will be working (Herschbach 1985). One of the most cost-effective ways to train prospective administrators is through internships that allow individuals to rotate through a select number of exemplary programs. It may be necessary, however, to change personnel policy in order to accommodate training experiences for administrators (Herschbach 1989). Donor agencies usually provide administrators with opportunities to participate in overseas training, study tours, and conferences. While these experiences can be beneficial, they are of limited value in imparting management skills that can be applied in local institutions.

Box IV-1 summarizes lessons from research and project experience regarding management development.

BOX IV-1
Guidelines: Management Development

- Management issues involve all participating institutions – the host country, the donor agency, and the contractor.
- Management development is especially crucial at the beginning of a project. Effective management structures must be in place before the implementation of project activities begins.
- Management development must address the needs of each organizational level involved in project implementation and must continue throughout the life of the project.
- At the training unit, management development must focus on each level of staff – administrative, instructional, and support.
- Administrators require special training that can best be acquired through a series of internships in exemplary vocational education and training institutions.

Instructional Staff

Instructional quality is directly related to staff quality. "Successful educational change is built on effective teacher training," Verspoor (1989, 92) observes. "Although the design and implementation of teacher training components does not by itself ensure success, it is an essential feature of high-outcome programs." Experienced instructors with good teaching abilities produce better learning outcomes than do poor instructors. Students of the "best" instructors experience achievement gains of up to a whole grade level over students of the "worst" instructors (Glassman 1984). Resourceful and competent instructors often can provide good training despite shortages of instructional materials and limitations in machinery and equipment. Material resources, however, cannot compensate for poorly trained or unmotivated instructors.

There is a significant, if sometimes moderate, relationship between the length and number of teacher training courses instructors have completed and the achievement of their students (Fuller 1985). However, as Haddad (1985, i) observes, "There is no indication that increasing the level of qualifications beyond a certain point produces better results. There seems to be a 'bracket' of knowledge and skills that teachers must possess . . . below which they cannot teach effectively and above which additional preparation is not cost effective."

Several difficult problems inhibit the recruitment and training of instructors. Low pay is one obvious reason that publicly supported programs have difficulty in recruiting and retaining qualified instructors. Individuals who possess good teaching skills also possess skills that command higher wages in other fields of work. Their combination of theoretical, practical, and organizational skills is in high demand, and they may be able to receive wages two or three times greater than what they earn as vocational instructors. Some of the best teachers are lost to firms and organizations that offer greater opportunity.

In many cases, prospective teachers have very modest levels of basic education and limited professional training and work experience. In some countries, there is such a sharp distinction between academic preparation and practical work that talented youth are isolated from any

opportunity to acquire the skills and experience needed to become vocational instructors. On the other hand, individuals with practical experience are unlikely to have any opportunity to acquire additional general education and professional training (Herschbach 1985, 1989).

Certification and licensing requirements may not exist, so there is no control over staff quality. Little attention may be given to prior work experience or professional preparation. This is particularly true in cases where the government is a major employer, with teaching but one of a number of public sector jobs to be filled on the basis of loyalty or political affiliation.

Employer-based training programs may have less of a problem recruiting instructors because candidates can be drawn from the ranks of skilled workers. Although these individuals may have good technical skills, they often lack basic literacy and numeric skills and may have had no pedagogical training. Employers, except for the largest, generally are not able to give pedagogical training; they do not know where to obtain it, and they may not have the resources to provide it to their instructional staff.

In any project, it is essential to develop a reliable source of qualified staff. Depending on local recruitment of instructional staff is highly problematic. All donor-assisted projects must make provision for both short- and long-term staff development. Staff development policy must include at least three elements — selection, training, and supervision and monitoring.

Selection is necessary to ensure that the most qualified candidates are hired. In many countries, good jobs are at such a premium that there is considerable pressure to hire individuals who are not qualified but who have good "connections." This pressure must be resisted. Selection, based on objective criteria, must be the first step of any staff development process. The formulation and use of certification requirements help considerably to objectify the staff selection process.

More effective staffs can be developed if the operating unit has authority for recruitment and hiring. In this case, there is a higher probability that staff will share the goals, standards, and values of the institution and faculty. "Applying school goals to the selection of teachers serves as an important control mechanism to ensure the school's quality," Rosenholtz (1985, 362) observes. It also helps reduce faculty turnover, thus avoiding a cycle of high staff change.

Both pre-service and in-service training must be provided. Pre-service training often presents difficult challenges because both pedagogical and technical skill training are involved. In general, teacher training programs have not solved the problem of technical skill development, because two or three years may be needed just to impart a reasonable level of skill proficiency. The best option is to recruit technically qualified individuals from industry and train them in classroom instruction and management skills. The next best option is to provide a combination of short pre-service technical courses with internships and work placements. The least desirable option is to provide comprehensive skill training along with teacher training; the cost and length of such training are prohibitive (Herschbach 1989). In addition, strong cultural biases against manual activities will have to be countered in many instructor training programs.

In employer-based programs, finding individuals with the required technical skills is usually not a problem. However, careful selection is essential to find individuals who can successfully complete and profit from pedagogical training. Just because an individual has good technical skills does not mean that he will be a good instructor. Supervisors may be reluctant to give up their best workers, so a selection process aids in locating the most qualified candidates.

In general, pedagogical pre-service training does not require much time if it is accompanied by in-service training after placement. Though less frequently available than pre-service training, in-service training is equally important. It offers a way to mobilize staff support for the objectives of a program and to improve staff quality. In-service training is a critical variable in successful programs (Fullan 1989). A cost-effective way of upgrading teachers is the "echo" method reported by Verspoor (1989, 95). "Such systems rely on initial training of a small core of personnel, who in turn train a larger group, who then train a still larger group, and so on."

An element of staff development often overlooked is monitoring and supervision. School-level supervision is a key element in successful programs (Verspoor 1989). It is crucial that administrative staff monitor what is occurring in the classroom;

only in this way can in-service training be directly targeted to recurrent instructional problems. In-service training is most effective when it occurs in the individual operating unit and focuses on immediate problems of instruction (Huberman and Miles 1984; Fullan 1989). Monitoring and supervision also make it possible to reduce pre-service training time. Pre-service training can be as short as ten to twelve weeks if it is coupled with a strong program of on-site supervision and in-service training. This may be the most cost-effective method for teacher preparation (Herschbach 1989).

Teachers need training in three areas: instructional methods, laboratory management, and technical skills. Teachers in developing countries tend to use a very restricted instructional repertoire (Anderson 1987). Typically, instruction consists of a lecture from notes, and students are evaluated on material they have copied and memorized. The pace of instruction is often slow, routine, and laborious. A much richer instructional repertoire can be used, and there are better ways to teach — ways that promote higher student achievement (Centra and Potter 1980; Lysakowski and Walberg 1982; Wang and Lindvall 1984; Bourke 1985; Brophy and Good 1986; Cohen and Rossmiller 1987; Frazer et al. 1987).

Inadequate classroom management continues to be a problem widely associated with training programs (Herschbach 1985; Bowels 1988). This is partly because of the complexity of the management tasks involved. Instruction in vocational training programs is more complicated than in general educational programs. Teachers have to be trained in two aspects of management — managing the instruction and managing the physical environment. Both impact on student achievement. Material loss results mainly from instructors' inability to control and maintain the physical environment. This is one of the most difficult aspects of management in developing countries because there may be strong cultural biases against working with one's hands. Manual work is thought inferior, and the supervision of instructional laboratories is relegated to untrained assistants.

Box IV-2 reviews the guidelines for developing superior instructional staff.

BOX IV-2
Guidelines: Instructional Staff

- Staff development policies must address three issues: selection, training, and supervision and monitoring.
- Selection procedures are needed to ensure that qualified instructors are hired. Certification requirements help enforce the use of guidelines and criteria in selection.
- The training institution should have authority for recruitment and selection of its own staff.
- Training must address both the technical and pedagogical skills of instructors. In general, individuals with the needed technical qualifications should be recruited and then trained in pedagogical skills.
- Both pre-service and in-service training are needed to strengthen the skills of instructional staff. Training should cover three areas: technical skills, instructional methods, and classroom and laboratory management. If in-service training programs are in place, pre-service training for pedagogical skills need not be lengthy.
- Administrators must provide adequate supervision and monitoring in order to accurately identify instructional problems and effectively target in-service training.

Instructional Resources

Although instructional resources are essential to training quality, they are not in themselves sufficient to guarantee quality. Below a certain point, the lack of resources has adverse effects on learning. Above a certain point, additional resources make little difference in student achievement (Psacharopoulos and Woodhall 1985).

Investment guidelines. Training programs tend to be expensive because of the investment required in tools, machinery, equipment, and instructional materials. When large capital investments are combined with poor management, substantial material losses and additional recurrent expenditures result. The unit cost of training, thus, becomes extremely high, and restricted budgets are greatly stressed.

One way to cope with restricted resources is to use instructional patterns that require fewer resources. Instructional laboratories do not have to be equipped in the same way as industrial establishments. The purchase of instructional resources should be based on achieving specified learning outcomes, not on duplicating the workplace. Modular instructional programs, based on the use of learning stations in which students rotate through work assignments, may require between 25 and 30 percent fewer material resources than more "conventional" instructional patterns. Combinations of in-school instruction and work placement can reduce considerably the tools, machinery, and equipment needed for instructional purposes. Basic instruction is given in the school setting, and work experience is acquired at the workplace (Herschbach 1989).

Projects tend to overinvest in elaborate instructional facilities. This is particularly true when loan funds are available from donor agencies. Much of the criticism leveled at formal vocational training institutions stems from the fact that the investment is simply too large given the training objectives and the potential for long-term financial support. Instructional programs conducted by private voluntary organizations have shown that high quality training can be delivered with minimal investment in facilities and support materials.

The development and use of instructional materials for training present complex challenges. No one kind of instructional technology has superior qualities. Simple media, such as print material and slide/tape resources, are just as effective as computer-assisted instruction or videodiscs. The most important selection factors are cost, ease of use, and content. The instructional technology must not only present the required subject matter, but it must also present the subject matter in a way that promotes effective learning (Office of Technology Assessment 1982).

In many developing countries, education and training budgets are severely restricted. It is unrealistic to consider investing in expensive systems of instructional technology. The cost differential between simple media and "high tech" devices is striking; sophisticated technology may cost ten to twenty times more. Simple media are also easier to use and have fewer support requirements. Print material, in all forms, remains the most widely used and cost-effective instructional material (Neumann 1980).

Print materials. One of the most important investments is in instructional materials, especially textbooks. There is a positive relationship between the use of textbooks and student achievement (Heyneman, Farrell, and Sepulveda-Stuardo 1981; Altbach 1983; Heyneman and Jamison 1983; Fuller 1985; Lockheed, Vail, and Fuller 1986; Verspoor 1986). The use of textbooks and print materials may account for the equivalent of 1.61 additional months of schooling per year (Lockheed, Vail, and Fuller 1986). The impact appears to be more significant among students from rural areas and lower-income families (Fuller 1985). Only moderate resources are needed for instructional materials; as the availability of textbooks approaches a ratio of one for every two students, the impact decreases (Psacharopoulos and Woodhall 1985).

Instructional materials have strong benefits that help offset their cost. They have the potential to improve instruction in two major ways. The first is by expanding and updating technical content. A principal way of bringing about quality improvement in the classroom is through curricular change, which is subsequently reflected in instructional materials (Verspoor 1986). The technical knowledge and skills of instructors rapidly become outdated unless the instructors have the opportunity to obtain regular upgrading in their technical specialties. Upgrading may be achieved through the use of instructional materials at less cost than through formal classroom instruction. The teachers themselves learn from the instructional materials used with students.

The second way that instruction is improved is through the use of pedagogically superior materials. The instructional materials can provide instruction that is better than that delivered by the local teacher. The investment is justified because comparable content and quality of instruction cannot be obtained through any other means. Supplying textbooks, for example, may be three to four times as cost-effective as providing additional training for instructors who lack teaching skills (Lockheed, Vail, and Fuller 1986).

The obsolescence of content is a major concern in all types of training programs. Training institutions may lag seriously behind business and industry in the technical content of instruc-

tion. Formal institutions, in particular, may not have the managerial and programming flexibility required to adapt to the changing training needs of employers. Small- and medium-sized firms tend to lag behind in technical knowledge because they are outside the mainstream of innovation and change. In contrast, large companies have the fewest problems with instructional obsolescence. They have both the resources and avenues of access required to stay abreast of technical content. Substantial technical content is embedded in new technology and is transferred along with the technology (International Labor Office 1987).

One of the most beneficial outcomes of an investment in instructional materials may be the ability to counter the obsolescence of instructional content. To accomplish this the instructional materials themselves must be kept current, and a systematic instructional materials development process must be established.

Production of instructional materials. In many cases, the capacity to produce instructional materials needs to be developed. A heavy reliance on foreign materials results in high costs. Some countries undertake national curriculum projects to supply training materials. The costs usually are higher than expected and production problems more difficult than anticipated. Considerable training is needed to develop the capabilities to produce quality instructional materials at the national level. In addition, adequately addressing local markets will require both government and private sector initiatives. Governments alone cannot address all shortages of instructional materials. Private initiatives should be encouraged, because private firms may have a greater ability to address the highly specialized content of technical subjects. They may be more willing to innovate and may have greater incentives to contain costs.

The capacity of local schools to develop simple instructional materials must be established and strengthened, so that instructors are able to enrich and supplement the lecture style of instruction, make greater use of local materials, and more readily adapt instruction to the needs of local employers. Teacher training programs should include training in the production of simple resource materials. Different ways of organizing instruction result in better learning and lower costs. The use of competency-based instructional systems, for example, requires the capacity to produce quality instructional materials.

Instructional technology. Manipulative processes cannot be taught exclusively through print materials. The use of instructional technology may be particularly useful when it is necessary to simulate complex industrial processes. It is less expensive to use instructional technology than to purchase costly equipment.

In addition, one of the most important uses of instructional technology is extending education and training opportunities to individuals not served by the traditional classroom. Formats include apprenticeships or distance education programs. When instruction is limited to a small number of individuals, the cost advantage of the conventional classroom format disappears, and it becomes more cost-effective to use instructional technology to reach students (Herschbach 1985).

Industry tends to use instructional technology to train small groups of individuals in diverse locations. Self-paced, multimedia instructional materials are prepared and standardized. A variety of delivery devices are used, including a combination of media and teacher-directed instruction, with choices made on the basis of cost, type of presentation required, qualifications of staff, and portability. Training is short-term, uses existing facilities, and has low staff requirements.

User population. Cost is an important factor in the development of instructional materials. Wide use over a relatively long period of time results in low unit costs. However, it is seldom possible to achieve the levels of use necessary for economies of scale. In the case of technical subjects, the total student population is often small. Instructional materials are generally specific to particular skill areas, so their use is considerably restricted. Instructional materials also become rapidly outdated, resulting in a short use-life and high replacement costs. Some materials may have to be replaced in as little as five years (Herschbach 1984, 1989).

In many countries, the population of users is too small to achieve any economies of scale. A

country must have a total population in the range of 10 to 15 million before there is a large enough pool of specialized users to make the production of technical materials reasonable in cost. For some countries, the best policy option will be to support the regional development of instructional materials in order to achieve cost reductions, high quality, and comprehensive technical coverage. Such a regional effort will call for developing a regional coordinating mechanism and overcoming political and economic barriers.

Guidelines regarding instructional resources are presented in Box IV-3.

Box IV-3
Guidelines: Instructional Resources

- Instructional methods need to minimize the use of expensive equipment and machinery.
- Investment in instructional resources should be guided by the learning objectives. There is no need to duplicate the workplace in full.
- Print materials, especially textbooks, are among the most valuable investments in improving the quality of instruction.
- Good textbooks help improve instruction in two major ways: they provide technical information that is current, and they present information in a manner that is pedagogically sound. Training programs must provide for the regular updating of texts if they are to continue to serve these purposes.
- Local capabilities on the part of training institutions and instructors to produce simple instructional materials must be developed. National governments cannot afford to assume full responsibility for materials production.
- Alternative technologies and formats — instead of the traditional classroom setting — are appropriate when small numbers of students in diverse locations require training.
- In order to achieve economies of scale, small countries such as those of Central America and the Caribbean should look to the regional production and distribution of instructional materials.

Development of Sustainable Training Systems

Total System Requirements

Project design must be approached from the standpoint of developing and implementing a sustainable training system. Too often, the larger system requirements are not considered, and different program elements are developed without full regard for the interdependent relationship of all system elements. Physical facilities, for example, may be built and equipped properly, but little attention given to the development of the supply and maintenance components essential to keep those facilities operating satisfactorily. The failure of projects to improve the efficiency and effectiveness of overall training systems leads to poor performance (Educational Development Center 1989; Fullan 1989).

If total system requirements are not taken into account, institutional distortion occurs, resulting in poor use of project investments. Some system components are developed, while others are weakened. For example, if curriculum development activities are introduced without provision for addressing the additional management requirements entailed, an already weak structure may disintegrate under the pressure of new responsibilities. There must be a balanced and sequenced approach to project implementation — balanced in that all system components are addressed, and sequenced in that some components are developed before others.

In the project design stage, priority is often given to the more certain and static project elements, such as participant training or commodities, that are amenable to early identification and planning. Less attention is given to the more dynamic and uncertain elements, such as management quality, that cannot be measured with any degree of certainty. The failure to fully account for uncertain project elements, however, will cause a training project to fail in the long term. Some system components require experimentation before successful implementation of the overall project can be achieved. Only through experimentation can their uncertainty be reduced. A project must incorporate such experimentation in order to develop a workable training system capable of sustained quality output. Developing and implementing a training system is an unpredictable process, and its tentative nature must be accommodated.

System overload occurs when a project is simply too large for the existing management capabilities or when implementation is attempted before the training system is adequately developed (Fullan 1989). Project implementation must start out small and expand incrementally as system capabilities are developed. Considerable time is usually needed to develop system capabilities (Middleton and Demsky 1988; Educational Development Center 1989; Verspoor 1989). As Dougherty (1989,102) observes, "Even when well-conceived and well-implemented, there is usually a long maturation period before the operating of a training system approaches maximum efficiency." Moderate projects may require a decade; large-scale projects may require fifteen to twenty years (five years to start up, another five to ten years for implementation, and the remaining five years for consolidation and institutionalization). Needless to say, the duration of many projects is too short (Fullan 1989). Box IV-4 discusses the value of incremental development.

In many cases, A.I.D. invests in projects that are too complex and too demanding, given total system requirements and the lack of mature organizational capabilities within the host country. The assumption is that a new project will help build the requisite management skills. In fact, the opposite is true. Existing capabilities are stressed beyond their capacity by the demands of the new project. Thus, the total impact of the project can be negative, extending to and distorting activities not related to the project.

When management capabilities are lacking in a country, the addition of yet another complex activity places even greater demands on an already weak resource base (see Appendix A). The problem is compounded when multiple parties are involved. Not only must the donor, the host country, and the contractor coordinate and manage their own project activities, but they must also integrate all of the different project elements. Contractors are usually interested only in select project components, and it is often impossible to coordinate project schedules with the development of the host country's capability to absorb and use project services.

In employer-based training programs, system requirements may be less extensive because the scope of training activities is smaller. Training may be limited to one company, and support units may already exist in the current management structure. In broadly based training programs that address the needs of numerous employers, system requirements are greater, especially for coordination activities. In a competitive environment, employers may have little inclination to work together or little experience of cooperation. The coordination of training activities for small employers is particularly challenging because they have very specific and immediate training needs for groups that usually are too small to achieve economies of scale. Generic training for larger groups of workers, however, is usually inappropriate to meet the needs of these employers (Herschbach 1988).

BOX IV-4
Value of Incremental Development

In the project design phase, it is essential to assess system capabilities. When a new system must be developed or an existing one enhanced, system capabilities must be built before functional responsibilities for other project components can be assigned. This suggests a pattern of incremental development with project activities phased in gradually. Two or three years (or more) may be required just to develop a system capable of implementing and sustaining project activities. Simultaneously building system capabilities while implementing project activities is not successful in most cases.

The example of the Honduran Advisory Council for Human Resource Development (CADERH), established to address private sector training needs, is instructive. Partly by design and partly because of funding delays, project activities have been phased in over an eight-year period (see Appendix B).

The project has expanded as resources have become available and organizational capabilities have been developed. The pace of incremental development has enabled CADERH to start small, develop policies and a plan of action, strengthen organizational capabilities, and expand as resources have become available. Some of the problems that CADERH has encountered are due to the fact that development was pushed too fast, when CADERH still lacked the institutional capacity to absorb and fully use the services provided. It is particularly important that CADERH be allowed to mature as an organization. CADERH will require as much as another decade of USAID guidance and assistance before it will be a self-sustaining organization capable of nurturing its own growth.

Organizational Structure

Training systems work within organizational structures. The complexity of the structure is largely determined by the type and scope of the training project. In most cases, an organizational structure already exists within the host country, and the task at hand is one of strengthening that structure and integrating the training system into it. It is especially important to recognize the different organizational levels and the requirements of each (Verspoor 1989).

- *Policy and planning organizations* prepare overall development plans, formulate policy options, establish standards, allocate resources, identify training priorities, and approve curricula.
- *Support agencies* are responsible for the logistical services associated with building facilities, printing textbooks, providing educational technology, equipping laboratories, recruiting teachers, and ordering supplies.
- *Line agencies* serve as the link between the central educational authority and the operating units. They fill mainly a supervisory function.
- *Operating units* provide instructional services. They are the key to the successful delivery of training.

Policy makers in developing countries tend to opt for large-scale change with program objectives that are linked to national social and economic objectives (Fullan 1989). Programs ". . . are usually complex, comprising a 'bundle of innovations' . . . to be implemented more or less simultaneously . . ." (Verspoor 1989, 132). Complex projects implemented on a national scale involve all four organizational levels; however, the various levels are not always well integrated. Box IV-5 presents general guidelines for reducing project complexity.

The tendency in large-scale national projects is to overemphasize the ease of adoption and to underestimate the complexity of implementation. "Planners and policymakers," Verspoor (1989, 133) suggests, "have often assumed that a clear and detailed explanation of the objectives and elements of the change program will lead to adoption by teachers and result more or less automatically in classroom implementation." Such projects tend to have limited results if they do not consider the implementation requirements at the different organizational levels. At each level, implementation problems are perceived differently and must be treated accordingly. Support agencies, for example, may have little interest in policy issues and little commitment to broad, general objectives. Likewise, general project guidelines will not apply uniformly to all organizational levels. In particular, a balance must be struck between national objectives and the implementation constraints and requirements of the operating unit.

Resources are usually restricted, and they are often inadvertently diluted by being spread among the different organizational levels or allocated to low priority activities. Where strong

BOX IV-5
Reducing Project Complexity

One strategy for coping with the complexity of different organizational levels is to reduce the scale of vocational training projects. Broad national objectives are deemphasized in favor of concrete objectives that can be achieved given existing constraints and resources. A.I.D.'s project design process, however, tends to work from broad, national objectives, without establishing a consistent relationship to specific project components (Johnson and Taggart 1984). Consequently, the particular path through the different organizational levels is not clear, resulting in considerable uncertainty. A distinct implementation strategy must address the functional requirements of each organizational level. Reducing the scale of the project facilitates the development of appropriate implementation strategies.

Another strategy is the model suggested by Korten (1980). He divides implementation into three phases to accommodate complexity and incremental development at different organizational levels.

- In the first phase, *learning to be effective*, the project is implemented on a small scale in order to find out whether the activity will produce the expected results.
- In the second phase, *learning to be efficient*, the focus is on reducing unit costs and experimenting with different training methods, support systems, and management structures.
- In the third phase, *learning to generalize*, large-scale implementation is undertaken, building on the experience and understanding gained in the first two phases.

political clout is involved, for example, resources may be diverted from the operating unit to another organizational level, even though activities at that level are of little relevance to project objectives. In many cases, the most crucial component in successful implementation is the operating unit. It needs long-term support at a reasonable level, even though it is in the weakest position to compete for resources (Van den Berg and Vandenberghe 1986; Verspoor 1989).

Some countries are experimenting with decentralization to simplify the complex problems involved in working with different organizational levels. Decentralization can also result in greater cost-effectiveness and improved training quality, although this outcome is uncertain (Winkler 1989). In decentralized systems, project components can be "compartmentalized" more easily, and the interdependent relationships among organizational levels become less important. Project activities can be focused to a greater extent.

Decentralization also invests greater authority and responsibility in the operating unit, resulting in greater efficiency and accountability (Fullan 1989). Research suggests that operating units need the autonomy to solve their own problems, which are immediate and require local solutions (Purkey and Smith 1983; Squires, Huitt, and Segars 1985; Corcoran and Wilson 1986; World Bank 1986; Noah and Middleton 1988). Operating units in decentralized systems are more likely to develop an institutional environment that fosters good teaching. They can maintain closer links with the local community and make changes in the curriculum more readily. Furthermore, they can correct deficiencies in the operational system more directly (Educational Development Center 1989). This is not to say that the operating unit does not need high-level support. But support differs from control and is best characterized as assistance and guidance.

Decentralized organizations require greater management capability (Armstrong 1984; Middleton and Demsky 1989; Winkler 1989). In some countries, this will constitute a major barrier. It is essential that there be ". . . an explicit definition of the roles of units at various levels and [an] effective flow of information between them" (World Bank 1988, 83). In some cases, the degree of decentralization will differ according to different system functions. Curriculum development, for example, may be centralized, while responsibility for in-service training remains local (Winkler 1989). "The advantages of decentralization loom larger with greater geographic dispersion, more pluralistic institutions, and weaker communication systems," but the need for local initiative and self-reliance also increases (World Bank 1988, 83).

One beneficial outcome of decentralization can be the relaxation of restrictions on private training organizations and business and industry, thus allowing for the development of nonformal programs and expanding the range of available training options. Training costs can be shifted away from government, and links to the marketplace can become more direct from both the supply and demand perspectives (World Bank 1988).

Recurrent Funding Obligations

The availability of funding for recurrent expenditures is a crucial element in all training projects, especially the most successful (Herschbach 1985). A major reason for the inability to sustain a project over the long term is the failure to adequately assess recurrent funding obligations. Technical assistance does not come free. It assumes an obligation on the part of the host country that often is considerable in relation to the funding available for recurrent support. What appears at first to be a development asset may be a financial liability when long-term recurrent funding obligations are fully considered.

In designing a training project, planners must accurately calculate the amount of recurrent funding needed over the expected life of the project. The recipient's obligation will increase as the donor concludes its assistance and as system maintenance costs increase. Ironically, recurrent expenditures will often increase the most in successful programs because of high levels of use, as illustrated in the example from Thailand (Box IV-6).

Project size and duration should be based on the ability of the host country to provide the required recurrent funding over the expected life of the training program. Unless adequate recurrent funding is budgeted, it is difficult to sustain quality, even when the initial capital investment

BOX IV-6
Lack of Recurrent Support Jeopardises Successful Project

Although the Thailand Rural Nonformal Education Project (Giovanni, Armstrong, and Jansen 1981) was highly successful in establishing a new training system, the Thai government was not able to absorb the cost of the system once donor funding was concluded.

In the face of rising inflation, support had remained constant from the program's beginning in 1966 through 1980, at an approximate outlay of US $5 per student per year. In the initial stages of the project, the low level of recurrent support was offset by assistance from USAID in the form of new tools, machinery, and equipment. System requirements were relatively low; however, high levels of use caused system requirements to increase rapidly. Within a three- to five-year period significant increases in recurrent support were needed but not available.

When USAID's contribution to the project was completed, the number of schools in the training system was reduced from 47 to 26, in part because of the reduction in resources. In the remaining 26 schools, resources were still inadequate to sustain the program's previous high level of enrollment and instructional quality. Maintenance could not be performed, equipment could not be repaired or replaced, and essential instructional tools and materials could not be supplied.

is high. If insufficient funds are budgeted for recurrent expenditures, the original investment may be lost as equipment, machinery, and buildings deteriorate though a lack of maintenance and the instructional program weakens through a loss of instructional staff (Herschbach 1985; Educational Development Center 1989).

Sufficient recurrent funds need to be available without shifting resources from other activities. Eventually the host country must finance the costs of the new activity along with those of its other commitments. Unless new sources of income are generated, new project commitments will not be met, and existing activities will become further underfunded (Herschbach 1985; Educational Development Center 1989).

Unit training cost is important to project sustainability. If the costs of A.I.D. project components exceed local costs, the probability of the project being sustained after A.I.D. phases out assistance is greatly reduced. The local agency, unable to pay more than the local market rate, will have to reduce operations, eliminate expensive activities, or discontinue the project. Consequently, a project that is funded at higher than local costs has a much greater probability of failing in the long term than a project that has costs comparable to local costs. Many host countries cannot afford to pay the same rate as A.I.D. does for services. Unrealistically high project costs by local standards constitute one of the major reasons why sustainability is difficult to achieve. Box IV-7 summarizes the relationship between capital investments and unit cost of training.

Furthermore, well-financed projects tend to distort reality. It may be heartening to know what can be accomplished with generous amounts of financing; however, it is more important to recognize what accomplishments can be sustained over the long term with a realistic amount of project support. If A.I.D. wants to invest in sustainable projects, then it should keep expenditures within the boundary of local costs. Only in this way is it possible to determine which elements of a project have a reasonable chance of succeeding.

BOX IV-7
Maximizing Capital Investments and Lowering the Unit Costs of Training

The unit cost of instruction can be kept low only by maximizing the use of expensive machinery and equipment. Due to low levels of use and the short life span of much equipment, the training costs in some developing countries are extremely high, far exceeding the level that should be accepted.

Projects that are underfunded often have high unit costs over the long term. If little money is put into maintenance and repair services, machinery, equipment, and facilities tend to deteriorate quickly. The period of time over which the machinery and equipment is amortized is not sufficient to result in cost-effective training. For example, equipment that should last ten years with proper maintenance may last only five, effectively doubling the cost of the equipment. In addition, the amount of time that the equipment can be used for instruction is reduced because of breakdowns and lack of funds for servicing and repair. Thus, instructional quality is lowered, and the cost of instruction is further increased because few students are using the equipment.

V Sources of Funding: Diversifying the Finance of Training

During the 1960s and 1970s, donor organizations and national governments invested heavily in vocational education and training systems. Shrinking government revenues in the 1980s, however, have made it unlikely that support for these systems can continue at past levels. In the Latin American and Caribbean region, the proportion of government expenditures for education actually has declined over the last decade (Psacharopoulos and Woodhall 1985). Governments are increasingly reluctant to invest heavily in education, even if the resources are available. Other social needs are urgent, and there is growing skepticism over the benefits of large public investments in vocational education and training.

In the whole education sector, then, a major challenge is to achieve a more efficient use of resources. In the vocational education and training subsector, the special challenge is to broaden the resource base for financing education and training programs. Reducing government costs through diversification may represent the best way to both increase and stabilize training opportunities.

Diversification of funding sources means, in part, shifting a greater share of the financial burden to those who benefit the most from training, i.e., individuals and employers (World Bank 1991). Diversification opens up more training opportunities. The overall national resource level for vocational education and training is increased, resulting in a greater aggregate volume of training activity. Thus, vocational education and training services can be expanded without placing additional demands on public revenues.

Greater overall financial stability is also achieved. By drawing on different sources of income, training systems reduce their vulnerability to reductions in any one source. Through diversification, there is greater assurance that the funding levels crucial to maintaining instructional capacity over the long term are sustained.

Donors have usually worked directly with central governments. Consequently, assistance for vocational education and training has tended to be restricted to publicly funded programs. Other means of financing vocational education and training have not yet been explored to the extent possible. One of the most important priorities for donor organizations such as A.I.D. is to assist central governments in addressing critical policy issues, so that developing countries can begin to broaden the funding base for vocational education and training.

This chapter discusses alternative ways to finance vocational education and training. First, the financing of vocational education and training through general public revenues is discussed. Next, the use of payroll taxes is examined, followed by a discussion of user fees and student loans. A concluding section lays out major concerns associated with the diversification of financing. These concerns call for policy reforms to relieve pressure on public budgets. Such reforms, however, must be pursued with caution because there are no easy solutions to achieving the equitable and efficient financing of vocational education and training.

General Public Revenues

Most developing countries heavily subsidize vocational education and training through general public revenues. Although the role of the central government in financing education has been extensively debated (Cohen and Geske 1990), few would argue that the government has no role. The major questions are to what extent government should finance vocational education and for what purposes. In a climate of financial austerity, these questions become especially important.

Justification for Public Investment

Government financing of vocational education and training is theoretically justified when social benefits exceed the benefits that accrue to individuals and employers. Such social benefits are called externalities or spillover effects. They range from the stimulation of technological innovation and industrial growth to the creation of a trained labor force in excess of anticipated requirements, the raising of skill standards, and the better use of underemployed workers.

Because individuals and employers do not realize the full benefits of training, they tend to underinvest, which results in less vocational education and training than is socially desirable. Economic theory suggests that government investment is required to make up the difference in order to realize a socially optimal level of training activity (Cohen and Geske 1990; Dougherty and Tan 1991). Government investment is justified in anticipation of future social benefits.

Firms and individuals may underutilize training because of imperfect market conditions. Firms, for example, may undertrain because incentives are lacking, or management does not realize the need for training. Firms may be too small to establish cost-effective in-house training programs, and off-site training providers may not be available. Minimum wage legislation may discourage training. Individuals may not undertake training because they fail to appreciate the long-term benefits, or they are not able to obtain loans to finance training (Dougherty and Tan 1991). All of these situations result in less investment in training by individuals and employers than is socially or economically desirable.

Government investment in vocational and technical education is theoretically justified, also, on grounds of equity and equality of opportunity. Under market conditions, only the more affluent can afford to pay enrollment fees. Without public subsidies, social underinvestment in education occurs — and the perpetuation of inequality. The poor do not realize the social and economic benefits of education because they cannot afford to attend school. If the unequal distribution of income is seen to be undesirable, then government financing of education and training is one socially accepted means by which such inequalities can be diminished (Psacharopoulos and Woodhall 1985).

Even with government support, a correlation persists between income level and secondary school enrollment (James 1987). Students from more affluent families attend general secondary schools, while students from less affluent families attend vocational secondary schools, the only option open to youth who will need to enter the labor force upon graduation. Eliminating government support for vocational education and training would eliminate even this opportunity.

Yet another justification is the unique role publicly supported secondary vocational education plays in enhancing labor force capacity. These programs broaden individual opportunity by focusing on the development of the basic academic skills that young people need in order to build successful careers over the long term (McMahon 1988). This is a function not addressed by privately supported training programs, which almost exclusively focus on the development of specific job-related skills.

Box V-1 summarizes the reasons why government financing is especially important in low-income countries.

BOX V-1
Need for Government Financing in Low-Income Countries

Low-income countries rely on general public revenues to finance all forms of education in order to achieve flexibility in the allocation of limited funds. Governments are better able to control the social distribution of educational services in relation to economic and social priorities. In addition, financing through general revenues does not require the establishment of additional tax-collecting mechanisms (Dougherty and Tan 1991).

In low-income countries, where A.I.D. is the most active, no good alternatives to government financing may exist. Just as the context in low-income countries may be too weak to support project implementation, there may be little capacity for financial support outside of the central government, restricted though this source is (Middleton and Demsky 1988). The public financing of vocational education and training may ". . . be the most feasible option in economies or skill areas where private enterprises are relatively small and lack management and training capacity" (World Bank 1988).

Forms of Public Investment

In many developing countries, the central government assumes responsibility for funding the ***full expense*** of operating the public vocational education and training system because local or regional jurisdictions lack taxing authority. Funds are channeled to training institutions on a per student or per class basis. This does not account for variation in need or capacity and, more importantly, provides no incentive for good performance. Institutions receive the same level of funding regardless of their need or performance. Moreover, because the central government retains considerable financial control, substantial programming flexibility is lost at the local level.

Developing countries make little use as yet of ***matching funds***. Under such a mechanism, the central authority provides only partial support, and the local or regional authority is required to contribute matching funds. The matching requirement lowers costs to the central government, generates local investment in training, provides greater financial stability to the training institution, and could in some cases stimulate program expansion. Unless legally restricted, there is no reason why local matching funds cannot come from private sources, as well, through user fees or donations.

Categorical aid is used to provide funding for additional educational services and, like the use of matching funds, reduces the financial obligation of the central authority. Categorical aid is used most often to stimulate training in critical skill areas and to address social priorities, such as programs for economically disadvantaged groups. Without the stimulation of categorical aid, important areas of change would be ignored.

Categorical aid is "seed" money used to encourage new programming. Partial support is given to local educational jurisdictions if in return they agree to contribute the balance of funding. In this way, state funds are used in areas of high priority, training activity is stimulated, and central control is maintained over the use of local funds. Once a program is established, the state phases out support, and the local jurisdiction is expected to assume full funding responsibility.

Both matching funds and categorical aid relieve central governments of the burden of providing the full costs of vocational education and training. They are not widely used, however, because both require that central governments give up some legal, administrative, and operational control; that new taxing mechanisms be developed; and that the concept of publicly supported vocational education and training be redefined to include financing from local funds, user fees, and collaborative arrangements with the private sector.

Outcomes of Public Funding

Historically, general government revenues have represented a limited, irregular, and unpredictable source of funding for vocational education and training. Although governments generate income through a variety of means, taxation constitutes the main source of income. In many developing countries, the tax base is very limited. There is simply not a high enough level of general wealth to produce substantial government income. There also is less reliance on broad-based taxes, such as income and property taxes, which have considerable income-generating potential; more use is made of taxes which produce limited revenues and are more sensitive to fluctuations in the economy, such as custom duties and excise taxes (Guthrie, Garms, and Pierce 1988). In low-income countries, there is less of a financial cushion; consequently, in recession periods government revenues drop immediately.

During the 1980s as the economic recession deepened, vocational education and training systems had to compete with other forms of education for a decreasing share of public funds. This resulted in underinvestment in vocational education and training because the level of recurrent funding available was no longer sufficient to support program operation. As discussed in Chapter IV, if training institutions lack sufficient recurrent funding, they are unable to recruit and retain qualified teachers, to purchase essential instructional materials, and to sustain program maintenance and upkeep.

At the same time, many vocational education and training systems had become overexpanded. Relatively high levels of support in the 1960s and 1970s resulted in the development of vocational education and training systems that now are too extensive in relation to the level of

financial support available from government revenues.

Public budgets generally have not kept up with institutional needs. As a result, training institutions are chronically short of funds, and there is considerable instability because the amount of funding available cannot be predicted over the long term. Annual allocations are often subject to wide changes from year to year. Donor assistance in the form of grants or loans is used to finance equipment and technical assistance, but local funds are too limited to enable projects either to be completed within time requirements or to be continued after donor assistance is phased out.

In many cases, government funds are not sufficient to support present operations let alone the expansion of activities. For these reasons, public revenues represent an unstable source of income. Thus, donors often work in environments that provide insufficient support for project development, implementation, and sustainability. One of the most important priorities for donor organizations such as A.I.D. is to assist central governments in addressing critical policy issues, so that developing countries can begin to broaden the funding base for vocational education and training.

Payroll Taxes

Forms of Use

The earmarked payroll tax is the most common alternative to the use of general government revenues to support training. There are two basic ways in which the tax is used. In the first, the tax is used to support a national training agency. This use characterizes the Latin American and Caribbean region (Inter-American Center for Research and Documentation for Vocational Training 1991). In other regions of the world, the second way predominates: the tax is used to provide grants or rebates to firms that provide training services.

Typically, the tax levy ranges from 1 to 2 percent of gross payroll. In some cases, smaller firms may be exempt and larger firms may pay more. The Brazilian government pioneered the use of the payroll tax. In 1942, a special tax was levied on enterprises in order to establish apprenticeship training centers for youth and to provide upgrading to young salaried workers and employed adults. SENAI, the National Industrial Training Services, was thus founded, followed in 1946 by SENAC, the National Commercial Training Service. From the beginning, close collaboration existed among government, employer, and worker groups, a principle encouraged by the International Labour Office and still followed in most countries.

In most other regions of the world, the payroll tax is used primarily to support a grant or rebate scheme. This is the newest and most widespread form of the payroll tax. Firms which start or expand training programs receive grants or rebates, depending on the kind, level, and scope of training. Rebates may be issued on a cost-incurred basis, as in Singapore and Tunisia, or in the form of grants to establish in-firm training systems, as in Nigeria and Zimbabwe.

Within these two general uses of the payroll tax, there are many variations and combinations (Whalley and Ziderman 1989; Salome and Charmes 1988). The Latin American countries have a long tradition of institution-based training administered through a national training agency. To function successfully, the national training agency must be free of self-serving domination by either government or private groups. It must truly represent the constituencies that it serves, control its own budget, and possess the autonomy to make policy and carry out decisions (see Box V-2).

When employers and workers have a major voice in the administration of the agency, there is a greater probability that training funds will be used for their designated purpose. In decentralized systems, there is less of a tendency for the central authority to divert funds for non-training purposes. It is also easier to develop co-financing agreements with industries, not only generating additional sources of income, but also achieving greater authority over the use of the funds.

In the past, Latin American countries made relatively little use of the tax rebate scheme, and consequently, less emphasis was placed on in-firm training. Recently, however, these countries have been moving toward a more diversified use of the payroll tax, with combinations of general revenues and user fees complementing income from the payroll tax to support a more diverse mix of training (Inter-American

BOX V-2
Balanced Representation Critical to Success of National Training Agency

Colombia has been relatively successful in achieving balanced and effective representation on SENA's (National Training Service) Board of Directors. Decentralized, non-governmental control has been achieved. The National Director, who is named by the President of Colombia, is a nonvoting member of the Board. The ten voting members include four representatives of the public sector: the Minister of Labor and delegates from the National Planning Department, the Ministry of Education, and the Ministry of Agriculture. The four private sector members are appointed by the institutions which they represent: the national organizations for small and large employers, the Chamber of Commerce, and the agriculture association. One member represents the largest union in the country, and one member is appointed by the Episcopal (Catholic) Conference.

Much of SENA's success is also due to the fact that it decentralizes its operations to 19 regional authorities, which have the responsibility for local training operations. This ensures greater local involvement and representation.

Center for Research and Documentation for Vocational Training 1991). The trend is to diversify the sources of funding as much as possible in order to achieve greater financial stability.

Low-Income Countries

In low-income countries, the use of the earmarked payroll tax to support a national training agency would appear to be a reasonable choice because individual firms have difficulty providing the necessary range of training services. Grant and rebate schemes seldom support total training costs, and small employers in particular experience high unit costs of training since they cannot capitalize on economies of scale. In theory, national training agencies have the potential to offer services that employers cannot provide cost-effectively. Institutional stability can be achieved, and services become available that would otherwise not exist.

For a variety of reasons, however, the payroll tax has been a less useful financing mechanism in the low-income countries of the Caribbean and Central America than in the middle-income countries of South America. Tax evasion is a major problem. The collection rate among modern sector firms is high, particularly for firms that employ 25 employees or more, but tax evasion is the general practice for small firms, nonunion establishments, and informal and agricultural employers. In the case of low-income countries with small formal economic sectors, the payroll tax may not be a viable form of income generation.

The payroll tax is often an oversheltered source of income. It represents a large revenue pool outside normal government channels. There may be few checks on how money is spent. On the one hand, the national training agency may overindulge itself, and on the other, the government may siphon off considerable funds for non-training purposes. In Panama, for example, only 15 percent of the income raised through the payroll tax was used to finance INFOR, the national training authority. Consequently, the organization was seriously underfunded, training was of low quality, and employers were disaffected. While this is an extreme case, the diversion of funds is common practice. Governments, hard pressed for financial resources, view the training fund as an additional source of revenue outside the normal taxing structure (see Appendix B). Consequently, employers who pay the tax often do not receive an equal value of services in return.

In the Central American and Caribbean countries, the payroll tax has not been a successful funding mechanism for several additional reasons. Restricted economies, limited financial resources, weak management and staff capabilities, and an inability to capitalize on economies of scale are all conditions associated with a low level of implementing capacity. A national training agency may be too complex an institutional form given the low support capacity of the implementing context.

Administrative control of funds and of the training agency is crucial. In the countries of Central America and the Caribbean, governments tend to exert greater control over the national training agencies than in the South American countries with well-established train-

ing traditions. This fact alone may account for the relatively poor performance of national training agencies in the Central American and Caribbean countries. The agency is often characterized by the same inefficiencies found in other government agencies, and it may be maintained as a large public bureaucracy to serve a political constituency.

The difficulties experienced with implementing a national training agency in a low-income country suggest real limits to this model. Because resources are often not well used, one of the greatest challenges is to redirect resources to better applications. Such changes require a number of related actions: eliminating inefficiencies, reconceptualizing the role of the central government, broadening the use of the payroll tax, and developing more effective and less costly training formats.

Middle-Income Countries

Evidence seems to suggest that as economies modernize, the national training agency is less suited as a form of training delivery (Salome and Charmes 1988; Hultin 1987). In modernizing economies, enterprises need greater in-service training capability. Training has to be specialized, related to specific work problems, conducted when needed, and delivered in firms on a continuing basis. The grant and rebate scheme is a better option because of the training flexibility it allows.

In general, national training agencies are not characterized by flexibility. Once institutions have been established, it is difficult to change modes of operation. Whether some of the more established training agencies can adapt quickly and fully enough to maintain the support of the business and industrial community is still open to question (Ducci 1991).

Argentina and Chile have discontinued use of the payroll tax, and Colombia redirects up to 50 percent of the revenue generated to support training that is conducted outside of the national training agency. The institutional form itself needs to change to attain sufficient flexibility in meeting the training needs of employers.

In the case of large firms, grant and rebate schemes offer several advantages. Large firms have the capability and resources to set up their own training, tailoring programs to their specific needs and building a stable staff. Technologically intensive production is more likely to require more frequent training and retraining to the specifications of the firm. For this reason, the grant and rebate scheme is appropriate.

The case of Singapore is instructive. The earmarked payroll tax is used to achieve economic restructuring. The tax is levied exclusively on low wages to encourage the use of high capital and advanced technology. The intended effect is to upgrade the status of low-wage workers. Firms that train and raise wages are exempt from the tax. Basic training is being replaced by assistance in mechanization and in advanced skills training (Salome and Charmes 1988).

South American countries, with a long tradition of nonformal training institutions, support very little enterprise-based training through their national training agencies, even though the overall need is in this direction (see Box V-3). While training is targeted to specific industries, the national training agency itself conducts the training. These countries need to move to a system that fully supports multiple uses of payroll tax revenues, incorporating grant and rebate schemes with an accompanying reduction in programs administered through the national training agency. It is extremely difficult, however, to get established national training agencies to give up any resources.

BOX V-3
National Training Agencies Fail to Implement Enterprise-Based Training

Although there is a trend in Brazil toward more enterprise-based training, it is largely financed through general government revenues, not through the payroll tax, which continues to be used almost exclusively to support SENAI and SENAC. Large companies with over 500 workers may be exempt from part of the payroll tax if they conduct training. The result is that SENAI and SENAC administer relatively little enterprise-based training. INCE in Venezuela and INTECAP in Guatemala have instituted similar procedures with similar results.

User Fees

Types and Uses of Fees

The charge of user fees is an attractive concept in that those who benefit most directly from training pay its costs. There is also a built-in quality control mechanism to the use of fees: individuals are reluctant to invest in training of low quality that offers poor career prospects. In theory, then, the widespread use of fees should have the effect over time of eliminating poorly functioning programs and stimulating the growth of strong ones. Because the scope for expanding tax revenues is severely limited in many developing countries, user fees provide a way to recover costs and generate new income.

Fees can take many forms: a charge for the full cost of training; a partial contribution based on the ability to pay; general tuition fees; charges for boarding, food, or tools; a direct labor contribution; a community assessment; or a special levy on employers.

In general, the use of fees is more effective as a means of supporting nonformal, short-term training than public pre-service training. Formal instruction extends over a relatively long period and, hence, is costly; the relationship between education and job placement is not direct. Individuals are more willing to pay for short-term training that provides immediate employment opportunity. Fees, however, are effective as a way to finance pre-service training offered through trade associations and employer groups because such instruction is more clearly related to future job opportunities.

Regardless of the type of fee and the form of training, full consideration must be given to the individual ability to pay. In low-income countries, the general level of poverty restricts the use of fees. Some evidence shows that as fees are increased, fewer households are willing to pay for vocational education and training. The greatest effect of fees is felt among the poorest 75 percent of the population (Gertler and Glewwe 1989); those least able to pay the fee will elect not to attend school. Box V-4 summarizes the effects of fee levels on enrollment.

Limited experience (Gomes 1991) suggests that fees are a viable financing alternative for vocational education and training if combined with other forms of support. As the proportion of training costs that the student is expected to cover through fees comes to exceed 50 percent, there is a corresponding negative effect on enrollment rates and program quality. The most reasonable expectation in many developing countries is to use fees for partial recovery of training costs. The Educational Foundation of Montes Claros (FEMC) in Minas Gerais, Brazil, for example, assesses training fees according to students' ability to pay. Fees range from 30 to 70 percent of training costs, and the remainder is financed through scholarships, the sale of services, and private contributions (Gomes 1991).

In most cases of government-financed vocational education and training, fees are kept as low as possible largely out of social and political concern. Fees are expected to cover only a limited portion of training expenses. In addition to practical limits on the amount that individuals can pay, politicians are sensitive to public pressure. Substantial administrative problems also often surround the collection and use of

BOX V-4
Influence of Fee Levels on Enrollment

The influence of fee levels on enrollment rates is mixed. In the LAC region, universities that have raised their fees have kept enrollments high (Schiefelbein 1987). University students, however, tend to come from affluent families that have the ability to pay increased fees. In addition, the occupations for which university students are being educated pay higher salaries than those open to completers of vocational programs. For these reasons, it is unclear what the effect on enrollment rates will be if fees are charged for vocational education.

A study in Malawi showed that fees could be increased upwards to about 40 percent of cost recovery before the excess demand for secondary school placements would disappear (Bray and Lillis 1988). The charge of fees probably discourages students with less academic ability to enroll in training programs. Fees, thus, contribute to greater efficiency in selection. Questions of equity, however, should not be ignored. Higher fees also reinforce the enrollment disparity which already exists between the more affluent and the lower income groups (World Bank 1988).

fees; administrative costs may approach the level of income generated through fees (Bray and Lillis 1988). Governments in Nigeria, Ghana, and Kenya at one time or another have had to rescind fees due to public outcry. Because of the political cost associated with the introduction of user fees, many governments are unwilling to consider this funding option (Psacharopoulos and Woodhall 1985).

Private schools in general charge higher fees than publicly financed institutions. They enforce specific student selection criteria, and they control the curriculum to a large extent. Some governments impose a ceiling on fees charged by private schools and try to control admission and instructional practices. Government attempts to regulate private schools, however, have often proven ineffective, particularly when the government has no financial leverage. Box V-5 discusses the relationship between proprietary schools and government policy.

BOX V-5
Proprietary Schools

Proprietary schools represent the simplest type of privately financed institutional training. In the LAC region, few countries outside of Chile have well-established proprietary systems of vocational education. Government policy makers often tend to look with disfavor on proprietary schools because they feel that such schools subordinate broader educational objectives to the profit motive.

Rather than discourage such schools, governments should consider remedial action. For example, accreditation programs can be instituted in order to ensure training quality. Proprietary schools relieve pressure on governments to offer more vocational education and training opportunities, and they often offer a more flexible and cost-effective response to training needs than government-financed programs can.

Government Subsidies

If national policy is to stimulate the development of private sources of vocational education and training, then one of the best options is for governments to contribute subsidies to individuals or firms unable to cover the full cost of training. This, in effect, enables schools to maintain quality, provides a profit incentive, stimulates the expansion of private training institutions, and makes training more widely accessible. At the same time, the cost to government is less than the full financing of a public system of vocational education and training. Government subsidies do not replace fees but are used to upgrade quality and stimulate the generation of private training opportunities (James 1987).

Governments should be encouraged to offer direct financial assistance to training participants rather than set ceilings on user fees. If governments do set fee ceilings below what an unregulated market would charge, training quality usually declines. Schools downgrade quality in order to maintain profits. In addition, there is no incentive for schools to expand enrollment because their profits will not increase. The effect is especially great over the long run, as relatively few new schools will open because of the low profit margin. And when fee ceilings go below costs, schools will go out of business if they do not downgrade quality further. James (1987, 54) suggests that in situations ". . . where the object is to increase both quantity and quality . . . price controls would seem to be a counter-productive device."

Fee ceilings may also create distortions among the groups who gain access to training. Governments may impose low fee ceilings in an effort to expand educational opportunity. The cost of vocational education and training is held low so that the poor can afford to enroll their children. Greater inequity, however, may result if excess training demand exists. Under such conditions, greater competition for a limited number of training places occurs because there is no incentive for schools to expand training opportunities. The more affluent are usually in a better position to compete for placements. With greater access to training, the more affluent may actually benefit more from low fee ceilings than do the poor (James 1987).

When there is no government subsidy of fees for private training, the most likely outcome is the concentration of training at two levels: low and high. For example, many individuals in developing countries now obtain training through the extensive informal training "system" which exists

alongside the informal economic sector (Fluitman 1989). Novices learn from master craftsmen through work experience. Training fees are very modest, and a limited set of low-level technical skills is taught. Training flourishes because it is inexpensive even for the poor.

In technical fields, on the other hand, high fees can be charged because the training leads to high-income occupations. Students are attracted from affluent families able and willing to pay high fees because of future status and earnings; the private rate of return is sufficiently high. Training in many mid-range occupations, however, is not provided because the earning potential from fees is not great enough for the school. Training costs are too high relative to the fees that can be charged. Proprietary programs in general tend to solidify around those markets that have the greatest earning potential (see Box V-6).

Government subsidies can help to correct this imbalance. Spending "norms" are necessary, so that inefficiencies can be eliminated and training targeted to specific occupations. Without some external control over how fees are used, schools will simply provide training in those fields that produce the greatest profit margin (James 1987). In addition, the level of cost sharing is important. When subsidies are too high, there is a reduction in efficiency, instructional relevance, and cost control (Bresser and Hultin 1990); there is less incentive to provide high-quality training. When subsidies are too low, there is less incentive to provide adequate numbers of training places, and the quality of the training tends to be low.

Student Loan Programs

Student loan programs have the potential theoretically to offset the inability of students to pay for training. Money is available when needed; payment is deferred until training is completed; and loans are repaid out of the higher earnings achieved as a consequence of training. Loan programs are common in the United States and other developed countries for individuals pursuing vocational education, but they are rare in developing countries. However, nearly all countries in the LAC region offer government-sponsored loans to students pursuing university education (Middleton and Demsky 1988).

BOX V-6
Influence of Fee Structure on Kinds of Training Offered

INACAP in Chile has been unsuccessful in sustaining a number of high-level technical education programs on a self-financing basis. The capital investment and operational costs are too high given the total income level that is generated through user fees. The training institution cannot pay operating costs through fees alone, and fees cannot be increased beyond a certain point because enrollment will drop too low for the school to maintain reasonable unit training costs. Classes with high enrollments are needed to achieve economies of scale.

Consequently, training is concentrated in fields that have low training costs, high enrollments, and large class sizes. Little training is given in fields that require high capital investments in machinery and equipment and small class sizes. Some important technical fields are completely ignored because of high operating costs and low profits, even though there is high employment demand.

For a loan program to be successful, it needs to be managed prudently with real rates of interest offered, and it must be supported by an effective collection system. Many of the student loan programs for higher education in the LAC region lack these characteristics. Low fixed rates of interest in countries with high inflation rates have effectively converted student loans into scholarships. In fact, the overall impact of inflation largely explains why the present real value of student loans is much lower in LAC countries than it was a decade ago (Schiefelbein 1987).

Another important requirement for the success of student loan programs is the willingness of individuals to pay for training that was previously free. Student loan programs are most successful when they finance training for higher level occupations which pay relatively high wages. More affluent students are attracted who have greater ability to repay loans. Students also are more likely to enroll, because they perceive that the benefits of training clearly outweigh the costs. Loan programs are more appropriate, also, for financing short-term training programs rather than long-term.

Student loan programs are less effective when targeted to disadvantaged and less affluent populations and when used to finance training for low-paying jobs. Borrowing through organized loan programs may be an alien concept to many individuals, and their ability to repay loans is restricted no matter how modest the sum borrowed. Default rates tend to be very high under such circumstances.

Diversifying Resources: Policy Concerns

One of the more urgent priorities for A.I.D. and other donor organizations is to work with developing countries in broadening and strengthening the financial foundation for vocational education and training. Governments in developing countries will continue to some degree to finance vocational education and training programs. In some cases, no adequate alternatives to government financing exist. In others, the external effects associated with government support justify some form of public investment. Most governments, however, cannot continue – and should not continue – to provide support at past levels. There are too many demands on restricted resources from other levels of education and other social sectors.

Several alternatives exist for dealing with limited resources. In countries that have overextended their training capacity in relation to their resources, one of the most constructive options is to reduce marginal programs and reallocate resources. Resources are too limited to be squandered on poor quality programs, and opportunities must be created for new training options. This situation calls for the reallocation of resources.

Another option is to make better use of resources. The unit costs of training must be contained, student enrollments maximized, completion rates raised, and completion cycles shortened. All components of the training system must be strengthened so that programs of high quality will result.

Finally, a third option is to broaden the base of financial support, the focus of this chapter. Other sources of financing must be mobilized in addition to public revenues. This requires changes in government policy, new ways of raising revenue, and new working relationships. None of the major sources of funding for vocational education and training provides complete answers to the financial challenge faced by governments. In combination, however, these other sources can provide partial answers.

Diversifying the financing of vocational education and training will require A.I.D. and other donors to work in new ways with government and non-government agencies. The administration and management of vocational education follow from the pattern of financing. "If training is supported through taxes and other levies on employing enterprises, these enterprises should have a large role in the management of expenditures. Frequently this will mean that training institutions are owned and managed by individual large enterprises or by associations of employers with common needs for skills" (World Bank 1988, 67). In many cases, changes in the sources of financing will require governments to play less central roles in the management of training.

Diversification also means that A.I.D. must alter the way that it conceives, designs, and implements training projects. Training modes are not interchangeable as funding sources shift. How projects are financed determines in part how training can be delivered. Not only is the scope and complexity of a proposed project limited by resources, but the source of funds restricts the kind of training solutions that can be considered.

The diversification of financing is linked to larger policy questions of public spending and the role of state intervention in development (Ducci 1991). Puzzling out the complexities of the policy environment may be one of the more formidable tasks associated with the diversification of financing (Bowels 1988).

Macro-level conditions, such as political and economic climate, affect the capacity to diversify the financing of vocational education and training. For example, the policy climate must provide incentives for investing in training, advocate equity and opportunity, promote the decentralization of government authority and control, and link education and training with development policy. If tax policies hamper economic growth, employers will have little incentive to invest in training; if employment opportunities are limited, individuals will have little incentive to pay school fees. The diversification of funding sources may also mean that more working capital must become available.

The ability to diversify financing is restricted by a country's course of economic development. There is an imperfect but nevertheless important relationship between a country's economic level of development and the available range of effective financing mechanisms.

As previously discussed, financing options are severely restricted in low-income countries with less well-developed economies. Even if it were desirable, it would be difficult to develop alternatives to government financing of vocational education and training. Industry and its collective bodies are weak (Castro 1987). In these countries, the potential to generate high levels of training support through private sector initiatives does not exist; the organizations to effectively collect and distribute revenue, also, do not exist (World Bank 1988). It is administratively difficult to collect levies from small employers; tax evasion is high; training needs are not well articulated. Few incentives exist for employers to invest in training, and they are unwilling to pay for services that they perceive as yielding few benefits.

In middle-income countries, on the other hand, there is considerably greater potential for shifting the financing of training from the central government to the users. In stronger and more technologically advanced economies, enterprises obviously have greater capacity to invest in training. There are increased job opportunities and hence greater willingness on the part of individuals to pay for training. The necessary conditions exist for broadening the financial base of training: a greater range of institutional forms, more incentives to invest in training, and reasonably well-developed avenues through which revenues can be generated.

Policy makers, then, must grapple with these and other complex conditions. The need to ease the burden of public financing will continue to be a pressing concern in most developing countries. How successfully this challenge is addressed will depend on the willingness of A.I.D. and host countries to take bold steps that lead away from the traditional ways of financing vocational education and training through public revenues to new sources raised directly from the private sector through the sale of training services to employers and individuals.

VI Study Findings: Implications for Policy

Developing countries face immense pressures to provide greater opportunities for vocational education and training with diminished resources. Without a reasoned and measured policy framework, these pressures can lead to poor investment decisions.

Training investments do contribute to development. "The social rates of return to different modes of vocational training are nearly always acceptably high" (Metcalf 1985, 9). Investments, however, must produce programs of a quality sufficient to contribute to development. Poor programs, whatever the form, squander scarce resources and close out potentially more effective options. It is essential that good policy decisions be made based on the contribution to development each particular training alternative can make and on the probability of successful implementation within the particular country context.

Many other factors also enter into decisions about investments in vocational training, including the characteristics of the existing training infrastructure. Few programs can be developed without fully considering the state of established training institutions. Political objectives, when linked with development plans, exert considerable influence, and resource levels within the host country largely determine what can or cannot be done.

Following is a summary of the findings and conclusions of this study. The first section offers recommendations for investment choices in vocational training by type of training mode, with particular emphasis on the Latin American and Caribbean region. The second section provides specific guidelines for conducting vocational training in low-income and middle-income countries. In the third section, project design is discussed from the perspective of strengthening an entire training system. A final section describes the need to diversify sources of funding and to undertake related policy reforms.

Program Mode

Formal Training Programs

The major distinguishing characteristic of formal vocational education and training is its combination of academic instruction with skills training. If training is of high quality, formal vocational instruction can provide considerable flexibility and adaptability, enabling participants to find employment in a variety of work settings. The fact that instruction is less job-specific than some employers desire is largely offset by the effectiveness of combining academic and vocational learning. Investments in formal programs are particularly important in countries where there is a general absence of vocational and technical instruction for school leavers (McMahon 1988). All countries need multiple training paths, and diverse economies require diverse methods of training. Some countries, however, have overinvested in formal training capacity at the expense of the primary and secondary education base. The major problems associated with formal programs are excessive program expansion and poor program quality.

Conventional formal vocational training programs are limited in their ability to provide skill-specific training largely because they cannot rapidly upgrade equipment, adjust curricula, or focus on the skill needs of specific employers. Formal training programs function best when large groups of students are instructed in a common, generic body of content that stays fairly stable over time. There is a trade-off between economies of scale and the specificity of instruction. Formal training responds very poorly to market needs, and attempts to make it demand-driven often duplicate training that can be obtained more quickly at less cost elsewhere. Formal training, therefore, should be encouraged

only in those areas in which it has a comparative advantage. In general, skill-specific training should not be emphasized in formal programs.

A.I.D should approach investments in formal vocational training programs with caution – not because school-based programs are unimportant, but because providing effective assistance is very difficult. Formal programs are complex operations, and, under weak implementing conditions, they are difficult to implement and sustain. To achieve internal efficiency, an adequate resource base and qualified administrative and instructional staff are essential. A favorable policy context and a strong organizational structure must support program development. In many cases, though, the policy maker is faced with an unfavorable implementing context and a highly complex training program.

In most countries, the formal system is extensive, typically absorbing about 10 percent of the public education budget. A donor agency rarely can provide comprehensive assistance, and a limited activity – such as physical plant renovation – will have little long-term impact on program quality unless other system components are also strengthened. Ministries of education often use donor funds as a replacement for, rather than as an addition to, government funds. Consequently, donor assistance becomes absorbed into a resource-poor system. When donor assistance is phased out, resources are spread even more thinly than before.

Large numbers of students enter formal vocational training programs with severe learning difficulties, weak basic skills, and poor study habits. Under these conditions, investments in formal vocational training are not used well and often cannot be justified by the rate of return, which may be marginal, especially in low-income countries. If resources are restricted and a choice must be made between providing primary education or formal vocational training, then the investment should be made in primary education.

If only limited investments in formal vocational training can be made, they should be in the areas of management development, instructor training, and curriculum and instructional materials development. Unless these components are strengthened, investments in physical resources cannot be effectively used. Physical resources do not guarantee an effective instructional system, but they can help improve the efficiency of an already well-functioning system. The most cost-effective investments may be in those systems that are already operating with a fair degree of efficiency. Such systems are able to make full use of the investment, thereby increasing overall efficiency.

In the case of poorly functioning systems, the best policy option is to provide either comprehensive assistance, thus strengthening all components, or no assistance at all. If anything less than comprehensive assistance is given, the investment will have little long-term impact. Caution should be exercised in order to prevent encouraging, through comprehensive assistance, the establishment of an overly expanded training system that cannot be adequately supported (Chapman and Windham 1985; Middleton and Demsky 1988). The inevitable outcome is poor-quality training and low cost-effectiveness.

In low-income countries, consideration should be given to consolidating the formal training system into a smaller entity that can reasonably be supported and managed, with comprehensive assistance given to such a smaller, stronger system. This increases the probability of realizing long-term benefits from A.I.D. investment.

Another policy option is to limit support to a single institution which, besides serving as an exemplar, focuses on a restricted range of critical skill areas. In order to determine the best way to achieve cost-effective training, considerable experimentation should occur, the primary purpose being to develop an integrated and effective learning system that can be replicated within the host country context. A.I.D.'s support, therefore, should be moderate and should extend over a ten- to fifteen-year period.

Nonformal Training Programs

It has often been suggested that nonformal training projects offer better investment opportunities because of their potential to impact directly on employment generation. This study, however, found no basis of support for this opinion. Nonformal programs experience as many problems in implementation as do formal training programs, and program completers often experience as many difficulties in securing employment (see Appendix A).

In the case of specialized programs designed to address specific development needs such as literacy or employment generation, there may be no existing organizational structure capable of supporting project implementation. Such structures must be developed. With the attendant political and operational problems, project complexity is increased, and what initially appeared to be a simple project may quickly become very complicated.

Specialized nonformal projects, however, are an important form of training for several reasons. They can target specific development problems or groups, they provide a relatively rapid and flexible response, and they can be modest in scale and implemented under less than ideal conditions. In many of the smaller Latin American and Caribbean countries where A.I.D. works, specialized nonformal programs may be the best policy option. These countries often have specific development problems that require immediate attention. Programs need to be designed which accommodate the particular implementing conditions within the country, and implementing requirements need to be reasonably modest in order not to overburden the existing managerial and resource capacity. Required program elements must be built into the implementing organization to ensure success.

The institution-based nonformal training systems established in many of the middle-income countries of Latin America offer an appealing model because they have proven to be an effective way to address development needs. Particularly promising is their emphasis on upgrading workers, combining institutional and firm-based training, targeting smaller employers, and training technicians and managers. They are also integrating services into a "package" of assistance to employers.

The most successful institution-based programs are in countries that have long traditions of vocational training. SENAI in Brazil, for example, traces its beginnings to 1942; SENA in Colombia to 1957; and INCE in Venezuela to 1959. A.I.D.'s assistance in the 1960s and 1970s helped support the development of these successful systems. These countries are economically stronger than the smaller countries of the region and benefit from mature training infrastructures capable of supporting program development.

Currently, however, A.I.D. works in countries that have less well-established training traditions and are less well-off economically. These countries have neither a successful training tradition nor sufficient resources to support an extensive nonformal institution-based training system. In many cases where a national training authority has been established, the result has been only marginally successful. The organizational structures are not sufficiently strong to support institutional development. Two problems in particular plague these programs: excessive government control and the overexpansion of low-quality programs.

In many of the Central American and Caribbean countries, national training boards are under the control of the national government. Whatever private sector representation exists on the training boards is often ineffective, and these programs tend to become overcentralized with weak links to employers. Political concerns may come to dominate decision making, and programs are staffed to fulfill political obligations. The bureaucratic problems that often dominate formal training systems may also come to characterize national nonformal training systems.

Some countries tend to build layers of training programs and spread them among various government ministries and agencies. These programs are often underfunded and poorly staffed and managed. In some cases, they are also underenrolled, because the quality of training is so poor that no one wants to attend. Few of these programs, however, are ever abandoned completely. Because they serve a political constituency, the tendency is to add new program layers in the hope of demonstrating the ability to successfully address development problems. A.I.D. should not get trapped in this cycle. The most reasonable policy position in such a situation is to encourage and support program reduction, consolidation, and resource reallocation.

A.I.D. should not overinvest in nonformal systems for the same reasons that it should not overinvest in formal training programs. If investments are made, they should be targeted to activities that have a reasonable chance of

success and can have a major impact on the training system. As in the case of formal programs, one option is to single out a program, or a manageable group of programs, and provide long-term, comprehensive assistance with the objective of developing an exemplary institution. Similarly, it may be better to invest in training systems that are already working reasonably well, thus achieving a degree of excellence, rather than propping up low-quality systems. Many of the countries in which A.I.D. works are desperately in need of examples of cost-effective institutions that can deliver quality training services.

In general, it is better to invest in training technicians and first-line managers than in training skilled and semi-skilled workers. Upgrading and retraining are better options than pre-employment training. Developing countries often experience critical shortages of technical first-line managers and skilled workers, which limit the ability of their economies to expand. Spreading assistance among many poorly performing programs that aim to provide entry-level training for semi-skilled workers should be avoided, because the probability of any lasting impact is remote.

Recently donors have expressed considerable interest in employer-based training. Many donors feel that the lack of relevancy and the low quality of much vocational training may be associated with working through government bureaucracies. Donors are also interested in more directly addressing the problems of economic growth, employment generation, and private sector development. However, there are few successful examples of donors working directly with enterprises. In the case of small- and medium-sized employers, the necessary administrative and management structure is lacking to centralize services. Successful training programs have worked through intermediary organizations, such as service centers, employer groups, and trade associations. One long-term implication may be that A.I.D. will have to target activities directly to these nongovernmental organizations, largely bypassing the national government, in order to reach employers.

In general, small- and medium-sized employers have the greatest training-related problems. Large employers are able to organize flexible nonformal training programs to fit their needs, but small- and medium-sized employers do not have the resources to invest in training, and they do not know where to go for assistance. Their needs are highly specific and the number of trainees small, making it difficult to achieve economies of scale. A major thrust in vocational training activities in the next decade may be directed at responding to the needs of small- and medium-sized firms. If A.I.D. is interested in the direct provision of assistance to small employers, it must find a way to coordinate services to them.

Training is more valuable if it is supplemented by other services that enable the employer to use training more effectively. These services are intended to enhance the availability of capital, improve distribution, expand markets, increase the supply of raw materials, and encourage better product design. Successful programs in vocational training include a "package" of related interventions that address the general constraints to private sector growth.

National Income Level

Low-Income Countries

It is difficult to implement and sustain training projects successfully in low-income countries. Resources are scarce, and management capacity is generally weak. The best policy option is to design administratively simple projects to be funded over an extended period. Donor-assisted projects often have been too complex to be successfully implemented in many of the countries for which they were targeted. Given the complexity of the projects and the conditions under which they must be implemented, project time spans have been too short and the demand on local resources too great.

A.I.D., however, tends to work primarily in low-income countries. Its training strategy must be appropriate to the implementing conditions within these countries. While specific conditions may vary from country to country, successful project implementation in low-income countries suggests the general guidelines that are laid out in Box VI-1 (Chapman and Windham 1985; Herschbach 1985, 1989; Bowels 1988; Middleton and Demsky 1988; Dougherty 1989; Fullan 1989; Verspoor 1989).

Box VI-1
Guidelines for Project Implementation in Low-Income Countries

- ***Implementation capacity.*** The most important determinant of project design is implementation capacity. Project size and complexity should not be based on needs assessments. Low-income countries have great needs but little implementing capacity. Implementing capacity cannot be developed concurrently with project implementation.

- ***Least cost.*** Investments should be made in those training alternatives that are the least costly and have the greatest potential for long-term sustainability. This may entail working through nongovernmental organizations and private voluntary organizations, establishing collaborative arrangements with employers, and offering nontraditional program modes.

- ***Simple projects.*** Investments should be made in programs that are administratively simple and have modest resource requirements. Most forms of publicly supported institution-based training, for example, are too complex and too expensive to be successfully implemented and sustained over the long term. They lack the management capacity, institutional support, and long-term resources required to administer complex projects.

- ***Modest initial investment.*** Initial project investments should be modest in order to increase the likelihood that training programs will be sustained. Investments that are too large result in an overextension of capacity and severely strain existing resources, thus ensuring that projects will not be adequately supported over the long term.

- ***Long-term outlook.*** Donor support should be sustained over a relatively long period of time. This is particularly important under poor implementing conditions. Time is needed for management capabilities to mature and for projects to become operationally embedded within the existing social, economic, and political frameworks. Project cycles of a decade should be considered, and even longer cycles may be appropriate. The majority of successful training systems have been developed over a fifteen- to twenty-year period. The "permanent pilot" may be one of the best implementing options.

- ***Incremental development.*** Successful projects follow a pattern of incremental development. Initial investments are small; considerable experimentation takes place; expansion occurs only after sufficient experience and success have been gained. It is essential that project expansion not take place until adequate management and staff capabilities exist, and a system capable of being sustained has been established.

- ***Concentrated resources.*** Resources should be concentrated in a limited number of programs with adequate support. Flexibility should be maintained in order to reduce training costs, improve efficiency, and enhance relevancy. Resources should be focused on building the key elements required for program quality. These include management capability, staff development, instructional materials, a certification system, and job placement.

- ***Recurrent costs.*** Projects frequently cannot be sustained over the long term because they lack sufficient resources. There must be adequate level of recurrent support in order to maintain program quality. Project size and complexity should be based on the availability of recurrent funding over the expected life of the project. All too often, however, funding involves shifting resources away from other activities, only to shift them back after a donor completes its work. In the long run, this kind of assistance creates training liabilities that cannot be supported at an adequate level of economic return.

- ***Unit costs.*** The unit cost of training is an important variable. Project activities should be developed at costs comparable to local costs; otherwise the probability of sustaining the activities is seriously reduced. If local programs cannot afford similar services once donor assistance has ended, then the host country cannot be expected to assume support for the training over the long term.

Middle-Income Countries

Given their greater resources, middle-income countries have a greater capacity to support multi-layered vocational training systems. Because dynamic economies need diverse ways to address manpower needs, training systems in these countries should include a combination of cost-effective training programs. For example, it may be desirable for middle-income countries to develop a two-stage system in which formal institutions provide generic training and nonformal training programs provide skill-specific, short-term training. Major policy considerations for training program design and implementation in middle-income countries include the points summarized in Box VI-2.

Box VI-2
Guidelines for Project Implementation in Middle-Income Countries

- ***Private sector linkages.*** Establishing linkages between training and employment is essential to successful program planning, and these linkages are particularly important at the local level. As economies develop and become more sophisticated, employers demand more from training systems. The existence of linkages then becomes vital to the implementation of successful training programs.

- ***Cost containment.*** Because the private sectors in middle-income countries are more developed, these countries enjoy considerable potential for cost containment through collaborative efforts with employers. Training projects should maximize these opportunities.

- ***Retraining and upgrading.*** Many middle-income countries are attempting to restructure their economies following the private-sector, export-led development model. This is especially true in the Latin American and Caribbean region. Under these circumstances, vocational training should emphasize retraining workers and upgrading skills. The most pressing need of employers is to improve quality and productivity, and the vocational training system should focus on this objective.

- ***Rehabilitation.*** Given current resource constraints, middle-income countries should focus investments on the rehabilitation of training institutions rather than on the establishment of new programs.

Improving Program Quality and Sustainability

Implementing Context and Project Complexity

Donor agencies, in general, have yet to solve the problem of sustaining vocational training projects. Some economists have argued that the problem is one of investing in the wrong type of training, and they advocate the use of manpower and cost-effectiveness studies to guide investment decisions. This study, however, suggests that the most serious problems are achieving program quality and sustainability, and that the most critical challenge is working effectively within the complexities of the implementing context. The particular training mode is not as important to success as the combination of social, economic, and political conditions that will foster program stability, efficient use of resources, long-term development, and effective links with employers.

External and internal efficiency are linked through the interdependent relationship of implementing context and project complexity. If project requirements far exceed the implementing capacity, there is little likelihood that quality training programs of any type can be implemented or sustained.

The projects most likely to succeed are those with high implementing support and low design complexity; whenever possible, A.I.D. should attempt to achieve this combination. Projects with high support and high complexity may succeed if a strategy of incremental expansion is followed. Conditions of low support and high complexity should be avoided; the most likely outcome is poor training quality and lack of sustainability. In the case of low support and low complexity, the best strategy is to implement a "permanent pilot" project.

System and Organizational Requirements

Training projects are implemented within the context of training systems. The major task of the donor is to assist in the development of system capabilities necessary to attain the training objectives and sustain operations after donor support ends. If the required system capabilities are not developed, the project will ultimately fail.

At the operational level, developing strong management and instructional staff capabilities

is crucial. Strong management is a precondition for successful project implementation and sustainability. All levels of management involved in the project must be addressed: administration, support, and instruction. Furthermore, management development should be viewed as an ongoing process and must be supported throughout the life of the training activity.

There is a direct relationship between the quality of the instructional staff and the quality of instruction. In most cases, it will not be possible to rely on local recruitment of instructional staff. Pre-service training does not have to be extensive, but it must be available. Pre-service training, moreover, must be coupled with in-service training and supervision. This is important in directing instruction towards achieving project objectives. The combination of in-service training and instructional supervision characterizes the more successful programs and is one of the most cost-effective ways to enhance quality.

Recruiting technically qualified individuals and then training them in classroom instruction and management skills is cost-effective. Licensing and certification requirements help to ensure quality. More effective staff can be developed if the operating unit has control over recruitment and hiring.

Nonformal specialized training programs may have the greatest need for staff training. They recruit staff from many different sources, and there are usually few controls on staff quality. Although individuals from business and industry may have technical skills, they often lack basic academic skills.

A.I.D. should avoid overinvestment in tools, machinery, equipment, and facilities. The lesson learned from private voluntary organizations is instructive: excellent training results are often obtained with modest material investments. Moreover, a modest level of investment may actually improve the likelihood of program sustainability because recurrent expenditure requirements are kept to a minimum. In particular, overinvestment in elaborate instructional facilities should be avoided, and greater use should be made of institutional collaboration with employers.

One of the best ways to improve instructional efficiency is to provide an adequate supply of instructional materials. In many developing countries, instructional resources are simply not available. Technical content should be regularly upgraded through the use of prepared instructional materials, which requires only moderate resources. Providing textbooks and print materials may be three to four times more cost-effective than providing teacher training for poorly performing staff.

Small- and medium-sized firms, in particular, benefit from instructional materials that enable them to train their own staff. Considerable amounts of technical content relating to new technology can be embedded in instructional materials that are kept current. These materials may also provide a partial solution to the problem of delivering specialized instruction to small groups of individuals.

The capacity of local teachers to develop simple instructional materials should be fostered, since such a capacity enables them to enrich and supplement their own teaching. The development of local capability reduces reliance on government- and foreign-produced materials and can reduce costs. There is also a greater probability that instruction will be adapted to the needs of local employers.

Central American and Caribbean countries have a major problem in achieving economies of scale. Countries with populations of two and three million do not have a potential pool of specialized users large enough to make the cost of producing technical material reasonable, particularly when frequent revision of materials is necessary. This is one of the most pressing policy problems that A.I.D. could address, particularly because instructional materials can have such a decisive impact on program quality. Possible options include combining government and private sector capabilities, increasing market size by addressing both public and private training, and supporting and financing the regional development of instructional materials.

Training system design should be balanced and sequenced. Total system requirements must be addressed in project design; otherwise institutional distortion is introduced. Some system components must be developed before others. It is particularly important to address the dynamic and uncertain project elements, such as management, and not focus exclusively on the more static project elements, such as facilities and equipment. System overload should be avoided

by designing projects that do not overextend the existing resource and institutional framework, and by not initiating training before the system is adequately developed. The tendency to design overly complex projects — which consequently are poorly implemented and cannot be sustained — should be avoided. It is best to start out small and expand incrementally as system capabilities are developed.

Training systems operate within organizational structures. Complex projects involve working at all organizational levels. They depend on the cooperation of policy and planning organizations, support agencies, line agencies, and operating units. This often requires considerable coordination. Many low-income countries lack the resources and the degree of efficiency or integration among organizational levels necessary to support program implementation. Resources may be spread too thinly or may be allocated to low priority activities. Project support among the different organizational levels may be uneven, or a particular level may exert undue influence on project implementation. Successful implementation requires adequate support of all levels; in particular, the operating unit must be given sufficient support.

One approach would be to design less complex projects, reducing project scale and deemphasizing broad national objectives in favor of limited objectives with a reasonable probability of successful accomplishment. Another approach is to divide implementation into phases, following a plan of incremental development that allows for considerable experimentation, feedback, and modification. Large-scale implementation should be attempted only after the organizational structure itself has proven to be sufficiently strong and enough experience has been gained to know what works.

Diversifying the Finance of Training

Most developing countries still rely heavily on public revenues to finance vocational education and training. With increased demands on public funds and declining resources for education, governments cannot maintain adequate levels of funding for program implementation. As a result of inadequate and unstable funding, the quality and sustainability of training programs have declined.

One of the more pressing policy considerations for A.I.D. is to work with developing countries to strengthen and broaden the financial base of vocational education and training through diversifying the sources of funding. Policies are needed that encourage less reliance on public funding, greater use of private sources of funding, and increased involvement on the part of employers in the training process. A.I.D. should apply its experience and leverage to assist developing countries in exploring a broad range of alternative sources of finance.

There is no simple answer as to how training should be financed. Funding options depend on the local implementing context, level of national development, and training mode under consideration. An important task is to identify the benefits and constraints of each funding option in a given context.

In low-income countries, public funding will continue to be important because few other options exist. The social and external benefits of training may outweigh the individual benefits, thus justifying public investment. These countries, however, need to use their resources more efficiently. Their training systems often are vastly overextended, and an important function may be to eliminate marginal programs and reallocate resources.

In middle-income countries, it will be important to broaden the tax base by changing the tax structure and by ensuring the effective administration and collection of taxes. Regional and local jurisdictions will also require the authority to tax. Government and donors will have to develop new partnerships with business and industry and with community organizations in order to tap private sources of funding. In the past, A.I.D. has generally worked with governments. Now A.I.D. will have to form relationships with nongovernmental organizations and private associations. Changing the way in which training is financed will also affect the way in which training projects are designed and implemented.

Addressing the complex policy issues involved in broadening the funding base poses a major challenge for host countries and donor organizations alike. Central governments will have to relinquish a measure of control over

resources and their use. The interests of competing groups in society will have to be balanced and the outcomes of change assessed. Establishing a favorable climate for policy dialogue and reform represents a very constructive role for A.I.D. to play in the 1990s.

Conclusion: Vocational Education and Training in the 1990s

A.I.D. faces a significant challenge, and an equally significant opportunity, in providing support for vocational education and training. In Latin America and the Caribbean, policy makers will continue to grapple with the problem of providing more and better quality training. Spiraling population growth, rapidly expanding cities, lagging formal economies, and the burgeoning need for employment – all of these factors combine to increase the demand for greater educational and training opportunity, even in the face of increasing financial constraints. Vocational education and training projects, however, have been difficult to establish and sustain, particularly in the low-income countries in which A.I.D. works. Clearly the challenge is to do better with fewer resources.

As A.I.D. moves into the 1990s, it has the opportunity to build on its considerable experience by broadening its focus. Policy makers, donors, and planners need to give much greater attention to understanding the implementing context, appraising project complexity and fitting projects to local contexts, assessing the system requirements of training programs, and broadening the sources of funding. Introducing change into contexts that are poorly understood is difficult; sustaining projects that have overextended existing implementing capability is impossible; and providing effective training is unlikely if system components do not work well together.

Issues of program quality, sustainability, and effectiveness must continue to occupy the forefront of policy deliberations among donor organizations and developing countries. Successfully addressing these issues requires a broader planning focus. Only with such a focus will countries be able to implement vocational education and training programs that contribute to sustainable economic growth.

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Select A.I.D. Projects in Vocational Education and Training

Introduction

A.I.D. has built up considerable experience in the design and implementation of technical assistance projects in vocational education and training. Results, however, have been mixed. Some projects have succeeded, while others have fallen short of expectation, experienced considerable difficulty in implementation, or become hostage to the political and economic environment. Even in the case of less successful projects, however, valuable lessons can be learned.

This review identifies factors that contribute to project success or failure. Twenty-four training projects that A.I.D. has conducted were analyzed. The purpose of the review was to identify the common variables that affect project implementation.

Of the 24 projects reviewed, three were located in Asia, five in the Caribbean, four in Latin America, three in North Africa and the Middle East, and nine in Sub-Saharan Africa. Average project duration was three years; the shortest project was one year in length and the longest eight years. The average A.I.D. contribution was $4.7 million. Twenty-one of the projects were in nonformal education, two were in formal education, and one was mixed. Project components included the construction of training facilities, the purchase of commodities, the provision of participant training and technical assistance, the development of curriculum and instructional materials, the conduct of surveys and studies, and the establishment of loan funds.

The projects chosen for analysis varied greatly in objectives, scope, design, and intended target population. In some cases, training activities were an integral part of larger projects; in others, the development of a training system was the major project activity.

The projects were selected for review because audit or evaluation reports were available. In some cases, reports were excluded because they had little information to contribute. Nevertheless, the conclusions reached can probably be generalized throughout A.I.D. training-related projects.

Limitations of Data

Ideally, project performance should be evaluated against two standards: (1) the relative importance of project objectives to the achievement of national development objectives, and (2) the degree to which these objectives were realized. This review focuses mainly on the second standard. Project documentation did not provide sufficient information to assess the importance of project objectives. Although the appropriateness of project objectives was discussed in some cases, most evaluations assumed that project objectives were valid. Most reports did not clarify the basis of establishing project objectives, and evaluators generally focused on the attainment of project objectives. If a high number of objectives were realized, the project was considered successful.

One measure of project effectiveness is the percentage of the enrollment target achieved. Another is job placements. The reports contained insufficient information to make detailed judgments about either.

Accurate cost information should be included in every project evaluation because cost is critically important to the question of project sustainability. Particularly useful are comparative data on project costs vis-à-vis local costs for specific activities. Unit training cost is an important

indicator of program effectiveness. In general, however, cost data were lacking in the project evaluations. There was insufficient information in the documents reviewed to make any type of accurate comparison feasible. The reviewer's impression, however, is that overall project costs were high. Annual average per-student training costs of $2,000 to $4,000, or higher, were the norm in many cases.

Evaluations must share enough common information to facilitate analysis. A full assessment of project outcomes cannot be made based on the information currently available. Given the above limitations, it appears that the project evaluation procedure in general needs to be restructured to yield more complete information for comparative analysis.

Summary of Factors Contributing to Project Quality and Sustainability

Issues of program quality and sustainability are at the forefront of policy concerns. Most developing countries are faced with complex training problems, but the resources they have to address these problems are severely limited. Poorly conceived and implemented projects only further strain already overextended resource bases.

Successful vocational education and training projects have been extremely difficult to implement. A.I.D.'s experience bears this out, and it is probably not much different from the experience of most other donor agencies. Only a few of the projects examined accomplished most of their objectives to a reasonable degree. In these cases, implementation reached the operational stage, and there was a measurable impact — as well as a fair probability that the host country would sustain some of the project elements over the long term. Four or five of the projects could be placed in this category. Serious implementation problems, however, plagued most of the other projects. Objectives were not attained, and performance was substandard. Impact was marginal, and there was little probability that the project would have sustainable results. More than half of the projects reviewed fit into this group. The remainder fell somewhere between. Clearly, one of A.I.D.'s more urgent needs is to improve the project implementation process, so that there is a reasonable probability that project activities can be successfully sustained.

No single project evaluation or audit report gave comprehensive insights into why projects were, or were not, successfully implemented. Collectively, however, a number of factors are consistently demonstrated by the projects.

What makes projects work? Factors identified as contributing to successful project implementation include the following:

- A.I.D. and the host are in agreement about the project goals and how they can best be achieved. The project is planned collaboratively, with major responsibilities jointly addressed. The host takes an active part in all phases of the project, and a strong mentoring relationship develops.

- The host country and institution have a strong, continuing, and long-term commitment to the project — they meet their commitments for resources and staff, they assign a high priority to the project, and they deliver on time.

- Key individuals take the responsibility for meeting project objectives — they obtain the help of others, eliminate project bottlenecks, solve operational problems, and improvise and adapt as necessary.

- Contractual agreements and procedures for achieving project objectives are clear, A.I.D. keeps project delays to a minimum, there are few unanticipated changes, and the contractors deliver on time.

- All parties involved exhibit strong management. Responsibilities are clearly indicated, reasonable time lines are developed, adequate resources are available to carry out the tasks, performance is monitored and reviewed, and performance expectations are clearly identified. If management capabilities are lacking, they are developed; support systems are established, and the organization is strengthened as necessary.

- The project is reasonable in size and can be implemented within the constraints of existing capabilities and resources. Basic project assumptions are realistic.

In summary, successful projects are collaboratively planned and implemented. The host country or institution values the project, commits resources, and assumes major responsibilities. Contractual obligations are clear. The project objectives are realistic and mutually agreed upon. Strong leadership and management capabilities exist. Support systems are developed, and the organization itself is strengthened if necessary. The project does not overextend the capacity of the organization to successfully implement activities.

What makes projects fail? Factors that contribute to lack of success include the following:

- The project is overly complex; it cannot be successfully implemented with existing capabilities.
- The project duration is too short; objectives cannot be accomplished within existing time and resource constraints.
- The host staff is lacking in capabilities, the host institution is unable to recruit and retain qualified staff, the project lacks sufficient numbers of mid-level technical specialists, or an adequate staff development program is missing.
- The counterpart's contribution is not made, technical inputs are delayed, recurrent funds for program maintenance are inadequate, or funds are not released on time by the host.
- The project's management capacity is weak — the management system is cumbersome, supervision is poor, lines of authority are unclear, decision making is uncoordinated, project leadership is weak, and no system for developing management skills exists.
- Financial accounting and record-keeping are poor, reporting is inaccurate, cost estimates prove inaccurate, errors, omissions, and inconsistencies are found in the contract, or delays in negotiating the contract and amendments occur.
- Misunderstandings and conflicts between parties develop regarding project outcomes and financial obligations, the government makes changes in the project, or contractors do not deliver services.
- Project backstopping is slow and cumbersome; delays are experienced in construction schedules.
- The demand for training or the availability of trainees was not adequately assessed. Faulty assumptions are made regarding the complexity of training, the ability of the students, or the capabilities of staff.
- Assumptions about job placement opportunities prove to be faulty. Program completers cannot get jobs, because no placement mechanism exists, labor demand is low, or the level of training is inadequate or inappropriate.

Conclusions

Project design and performance can be markedly improved if the following points are considered:

- In low-income countries, organizationally simple projects should be designed, as the management capacity is not available to run complex projects, related institutional support is unavailable, necessary resources are lacking, and employment opportunities are limited.
- In general, the length of training projects needs to be extended. At a minimum, most projects need a decade of assistance before they are self-sustaining. Management capability needs to mature, and it takes time for the project to become operationally embedded within the existing economic, political, and social framework.
- Funding should be modest initially and increased incrementally as experience and success are gained. The tendency to infuse projects with large amounts of funding over a relatively short period of time should be avoided. Funds cannot be used well, institutional distortion occurs, and the essential managerial and organizational structures are not developed sufficiently to sustain project operation.
- Project costs should be comparable to local costs; otherwise, the probability of sustaining

the project is seriously reduced. If local programs cannot afford similar services, then the host country cannot be expected to assume support over the long term. USAID must expect to assume all of the capital, operating, and recurrent costs for each project service, unless it is one which the host can and expects to support over the long term.

- Local input and commitment are essential for all project phases, including all levels of project design and operation.

- Projects are more successful if they give substantial attention to strengthening the host countries' institutional and organizational capabilities, including management capacity.

- Counterpart staff are crucial for project success. Projects are more successful if they provide staff training prior to other project activities. The practice of training staff concurrently with project implementation should be avoided.

Project

Indonesia, 1979-1983. Rural Works Project. Nonformal training. US $3m; GOI $46m; loans $25m.

Objectives

Improve rural construction projects; construct training center; provide training.

Outputs

Good progress, but some shortfalls in construction; training provided.

Problems

Delays on the part of the Government of Indonesia to provide technical inputs; delays in the release of funds; lack of technical capability; financial accounting not provided.

Source

Fritzler, G.G. 1980. Memorandum Report No. 2-4-97-80-19. Rural Works – Indonesia. USAID/Indonesia.

Project

Pakistan, 1984-1990. Baluchistan Area Development. Nonformal training. Cost figures unavailable; nonformal training component not disaggregated from total project budget.

Objectives

Provide participant training; train local staff.

Outputs

On target.

Problems

Lack of counterparts; recruitment of qualified local staff.

Source

LaPorte, R.; Hill, R.O.; and Anderson, J. 1987. *Interim Evaluation of the Baluchistan Area Development Project.* 391-0479. Washington, D.C.: TvT Associates.

Project

Thailand, 1966-1972. Rural Nonformal Education Mobile School. Nonformal, pre-employment training. US $7m; GOT amount unknown.

Objectives

Provide commodities, participant training, and technical assistance in project design, management, and evaluation; establish system of 54 mobile training centers; establish five regional polytechnic schools; improve Bangkok polytechnic.

Outputs

45 mobile training centers in operation; one regional polytechnic upgraded; four polytechnics equipped with tools and equipment; 80,000 individuals enrolled; 431 professionals trained abroad.

Problems

Inadequate recurrent funds for program maintenance; facilities, equipment, and materials barely adequate; equipment repair and replacement problems.

Source

Giovanni, R.S.; Armstrong, L.T.; and Jansen, W.H. 1981. *Thailand: Rural Nonformal Education – The Mobile Trade Training Schools.* Project Impact Evaluation No. 25. USAID/Thailand.

Project

Caribbean regional, 1982-1987. Regional Skills Training. Nonformal training. US $4.77m.

Objectives

Establish training network with support services; develop information system; train staff; develop instructional modules; train unemployed youth.

Outputs

Process of institutionalization proceeding well; information system established; 70-90 percent placement rates for trainees; high-quality training.

Problems

Insufficient funds budgeted to support network; information not being used effectively; structured training plans lacking.

Source

Comings, J.P.; Girling, R.H.; Rawlings, E.; and Saaveda, L.E. 1987. *Evaluation of the Regional Nonformal Skills Training Program.* 538-0073. USAID/RDO/C.

Project

Dominican Republic, 1980-1983. Training and Advisory Center for Women. Nonformal training and advisory service. Cost figures unavailable.

Objectives

Establish general training and advisory service center; provide skill training for formal and informal sector employment; provide network support and advisory services; provide skills upgrading; provide technical assistance.

Outputs

Center development on target; training seriously below target; network development on target.

Problems

Questionable if employment/income earning potential exists for trainees; training areas need to be carefully selected; ineffective management system.

Source

Dore, E.W.; Girling, R.H.; and Reichmann, R. 1983. *A Mid-course Evaluation of a Training and Advisory Center for Women (APEC/CENAM) in Santo Domingo, the Dominican Republic.* Washington, D.C.: International Center for Research on Women.

Project

Dominican Republic, 1983-1988. Human Resources Development Project. Nonformal skills development, skills training, and loan fund. US $5.4m; GODR $1.4m.

Objectives

Provide technical assistance to training institutions; provide student loans; provide faculty loans for additional study; provide loans to institutions for commodities.

Outputs

Student loans efficiently disbursed; faculty and commodity loan components not implemented; improved computer capability.

Problems

Inadequate follow-up; capacity to provide labor market studies lacking; poor performance by contractor; poor technical assistance performance; withdrawal of support by key institutions; devaluation of peso.

Source

USAID/Dominican Republic. 1985. *Human Resources Development Project for the Dominican Republic.* 517-0127. Mid-term evaluation.

Project

Jamaica, 1978-1982. Manpower Planning, Training, and Employment Project. Nonformal, short-term training. US $950,000; GOJ $650,000.

Objectives

Provide training in labor market and employment information collection, interviewing and evaluation, and test development; develop vocational and job counseling techniques.

Outputs

All outputs qualitatively deficient; activities incomplete or never done.

Problems

Project overly ambitious and unrealistic; resources not effectively used; political issues delayed funding; country inputs substantially below initial projections; quality of technical assistance uneven; purchased commodities inappropriate in some cases; resources inadequate to achieve objectives.

Source

Johnson, F., and Taggart, R. 1984. *Manpower Planning, Training and Employment. Project Evaluation Summary, Part II.* 532-0047. USAID/Jamaica.

Project

Jamaica, 1983-1989. Basic Skills Training Project. Multiple activities. US $13.4m; GOJ $49.9m.

Objectives

Assist the Human Employment and Resources Training Trust; upgrade and expand nonformal skills training programs and formal technical institutions; provide loans to institutions for commodities; provide technical assistance.

Outputs

Three academies established; administrative structure developed; failed to achieve objectives related to non-formal training; some facility upgrading accomplished; participant training short of target.

Problems

Management capabilities lacking; project too complex; poor contractor performance; political interference; high training costs.

Sources

Blank, L. 1988. *A Review of RCA/GE Inputs into the Non-formal Skills Training Component of the Basic Skills Training Project.* USAID/Jamaica.

Kelly, T.F., and Kenneke, L.J. 1989. *An Evaluation of the Basic Skills Training Project (Jamaica).* Newton, Massachusetts: Educational Development Center.

Project
Ecuador, 1978-1981. Small Business and Employment Generation. Nonformal training. US $442,400; recipients $460,000.

Objectives
Train and place 90 men, 150 women, 100 mothers, and 30 young men.

Outputs
37 men completed training; 8 women received on-the-job training; 69 mothers completed training, 8 employed; 10 young men placed.

Problems
Unrealistic targets; lack of staff; inability to attract trainees; trainees lacked basic academic skills; management insufficiencies; counterpart contribution not made.

Source
USAID/Ecuador. 1981. *Small Business and Employment Generation.* Memorandum Audit Report No. 1-518-81-19.

Project
Ecuador, 1979-1982. Employment Generation and Placement of Marginal Youths. Nonformal PVO. US $377,000; other $659,000.

Objectives
Strengthen institutional quality; develop curriculum and instructional materials; conduct labor market studies; upgrade instructional staff; train and place students.

Outputs
Mixed progress in strengthening institution; 10 percent of materials developed; mixed progress with labor market studies; mixed progress with staff upgrading; 20 percent achievement of training objectives.

Problems
Major organizational and administrative problems; implementation overly complex; staff development program not initiated; staff lacked basic communication skills; weak curriculum; lack of equipment and materials.

Source
Lamb, G. 1980. *Technology With a Human Touch: Vocational Skills Training for Disadvantaged Youth.* OPG 518-0007. USAID/Ecuador.

Project
Honduras, 1984-1992. Advisory Council for Human Resource Development (CADERH). Nonformal service center. US $14.159m.

Objectives
Develop competency-based curriculum materials and certification examinations; develop capacity to conduct needs analyses; develop media and materials production capacity.

Outputs
Good progress in materials development; difficulties with needs analyses; media development on target.

Problems
Lack of sufficient mid-level technical specialists; goal of self-sufficiency unrealistic; completion date of project underestimated.

Sources
McNeil, J.; Milbrath, R.; Paredes, E.; and Herschbach, D. 1989. *Evaluation of Centro Asesor para el Desarrollo de Recursos Humanos de Honduras (CADERH).* Los Angeles: Juárez and Associates.

Tucker, W.W., and Gloetzner, J.T. 1987. *Evaluation USAID/Honduras CADERH Project.* Washington, D.C.: Academy for Educational Development.

Project
Paraguay, 1977-1978. Vocational Institute. Nonformal PVO. US $390,000.

Objectives
Construct facilities; upgrade electrical installations.

Outputs
All objectives achieved.

Problems
No major problems.

Source
USAID/Paraguay. 1980. *Vocational Institute. Project Evaluation Summary, Part I.* 526-0507.

Project

Egypt, 1980-1984. Vehicle Maintenance Training Project. Nonformal training. US $4.5m.

Objectives

Establish training center for transportation sector; provide technical assistance; provide participant training; achieve training target of 200 in first year, 540 in following years.

Outputs

Project performance generally poor; construction behind schedule; participant training six months behind schedule; 85 individuals trained to date.

Problems

Lack of agreement among USAID, contractor, and transport syndicate; delay in customs clearances and construction; weak leadership; political issues distracting.

Source

USAID/Egypt. 1984. *Vehicle Maintenance Training – Final Evaluation*. 263-0114.

Project

Jordan, 1979-1982. Vocational Training Project. Nonformal training. US $2.125m; GOJ $3.025m.

Objectives

Construct and equip Yajourz trade training center; train staff; provide technical assistance for instructional design.

Outputs

Construction behind schedule; commodities remain to be procured; staff training on target.

Problems

Construction schedule too ambitious; complexities of host country contracting.

Source

USAID/Jordan. 1981. *Vocational Training. Project Evaluation Summary*. 278-0238.

Project

Morocco, 1980-1985. Social Services Training Project. Nonformal training. US $6.5m; GOM $7.2m.

Objectives

Improve the quality and range of skill training opportunities for Moroccan youth; improve the administrative and management capability of the Ministry of Handicrafts and Social Affairs.

Outputs

Most project activities behind schedule.

Problems

Original project design not complete; misunderstandings developed; management cumbersome; local institution support weak; capacity to place trainees in labor market uncertain.

Source

Bredie, J.W.B., and Abou-Sayf, F.K. 1983. *Social Services Training Project. Mid-point Evaluation Report.* 608-0157. Washington, D.C.: Creative Associates.

Project

Botswana, 1985-1991. Junior Secondary Education Improvement Project. Formal education. US $16.318m; GOB $6.193m.

Objectives

Develop curriculum and instructional materials; train teachers; strengthen system planning, management, and supervision capabilities.

Outputs

Curriculum and instructional materials development behind schedule; good progress made on developing system components.

Problems

Lack of qualified mid-level counterparts to implement project activities; project management capacity not strong enough; project backstopping cumbersome and slow; unrealistic time line for completing work.

Source

George, R.; MacKenzie, B.; Belding, B.; and Fuller, B. 1988. *Junior Secondary Education Improvement Project. Mid-project Evaluation.* Washington, D.C.: Louis Berger.

Project

Djibouti, 1980-1985. Human Resources Development. Nonformal training. Cost figures unavailable.

Objectives

Construct training facility; recruit and train staff; develop curriculum; develop placement office; strengthen management.

Outcomes

Construction on time and below cost; satisfactory progress in staff recruitment and training; curriculum development component not implemented; management training not achieved.

Problems

Government removed key component; ability level of entering students low; lack of job placement opportunities; no formal system for improving management skills of counterparts.

Source

Norris, M. 1984. *Human Resources Development, Djibouti. Project Evaluation.* 003-0006. USAID/ Djibouti.

Project

Ghana, 1976-1980. Nonformal Community-based Vocational Education Project. Nonformal training centers. US $1.9m; GOG $1.476m.

Objectives

Conduct training courses; provide administrative services; increase annual training output to 460 per center; establish new center; establish national coordinating office.

Outputs

Achieved 60 percent of outputs.

Problems

False reporting of placements; job retention rate not met.

Source

Barnett, S.A., et al. 1980. *End-of-project Evaluation of OIC/Ghana Phase II Nonformal Community-based Vocational Education Program.* Westport, Connecticut: Barnett and Engle.

Project

Ghana, Lesotho, Liberia, Sierra Leone, Togo, and Zambia, 1977-1981. Opportunities Industrialization Centers International. Nonformal training centers. US $8.3m.

Objectives

Support OICI central office; establish training programs; achieve target of 1,669 trainees by 1979.

Outputs

Training centers established; training goal short (only 773 by 8/79); financial self-sufficiency not achieved.

Problems

OIC/Togo expended 80 percent of funds by project mid-point; inadequate and inaccurate reporting; cost data not available; placement data not available.

Sources

USAID. 1980. *Effectiveness of Opportunities Industrialization Centers International in Establishing Vocational Training in Developing Countries.* Audit Report No. 81-27. Washington, D.C.: U.S. Agency for International Development.

Barnett, S.A.; Huntington, R.; and Kroll, J. 1987. *An Evaluation of OIC International: Its Institutional Development Performance, Impact, and Cost Effectiveness.* Westport, Connecticut: Robert Nathan Associates, International Science and Technology Institute, and Stanley A. Barnett.

Project

Kenya, 1977-1981. African Manpower Development Project. Participant and in-country training. US $1.431m; GOK $265,378.

Objectives

Meet critical requirements for management and skilled manpower; award annual training grants; provide short-term specialized training.

Outputs

Targeted goals for training appear to have been achieved.

Problems

Basic purpose of training questionable in light of manpower projections and placement record; complete roster of participants unavailable.

Source

USAID/Kenya. 1981. *African Manpower Development Project.* 698-0384.

Project

Liberia, 1978-1983. Vocational Training Project. Formal vocational education. US $5.9m; GOL $7.9m.

Objectives

Upgrade staff; revise curriculum; renovate facilities; strengthen support systems; achieve training capability of 500 annual completers.

Outputs

After two years, none of the objectives achieved due to dispute between contractor and Government of Liberia.

Problems

Dispute concerning staffing and contract terms; errors, omissions, and internal inconsistencies in original contract; delays in negotiating contract amendments; substandard contractor performance; deficiencies in ability of government to manage and administer contract.

Source

USAID/Liberia. 1980. *Problems Arising from an A.I.D.-financed Host-country Contract Between the Government of Liberia and Prairie View A&M University.* Audit Report No. 80-89.

Project

Liberia, 1980-1984. Youth On-the-job Training Project. Nonformal training centers. US $495,000; GOL $481,000; private sector $300,000.

Objectives

Achieve 400 annual training completions with 75 percent placement rate; retrain semi-skilled workers.

Outputs

57 completers; increase in number of participating employers.

Problems

Faulty assumptions about length of training required (program doubled from one to two years); training and placement rates not achieved because of inefficiencies; basic skill level of entrants too low; coup reduced implementation period by half; cost of training $15,000 per program completer.

Source

USAID/Liberia. 1984. *Final Report on Youth On-the-job Training Project.* PD-A4Q-060.

Project

Senegal, 1979-1983. YMCA Vocational Training Project. Nonformal job development. US $1.8m; GOS $1.6m.

Objectives

Assist youths in acquiring marketable skills; achieve annual output of 280; provide technical assistance to establish programs; construct facilities; purchase equipment.

Outputs

Project costs underestimated, and additional funding needed to meet objectives; no program completers; training behind schedule; construction delayed; equipment delivery behind schedule.

Problems

Inaccurate cost estimate by grantee; poor project management and cost control by grantee; personnel hired before required; lack of agreement between technical assistance personnel and counterparts; poor prospects for employment of program completers; counterparts inadequately prepared.

Source

USAID/Senegal. 1981. *The YMCA Vocational Training Project in Senegal Needs Improved Management and Administration.* Audit Report No. 0-000-81-112.

Project

Togo, 1979-1982. LaKara Skills Development Training Project. Nonformal PVO. US $612,000.

Objectives

Conduct socioeconomic survey, nutrition survey, and technical survey of craft production; construct training center; provide training to women.

Outputs

Socioeconomic survey completed but of low quality (unsound methodology); nutrition survey limited to only one group; technical survey not undertaken; construction unsatisfactory; two buildings condemned.

Problems

Project management lacked technical skills; field activities poorly supervised; lines of authority unclear; limited monitoring by project staff; weak headquarters support; decision making uncoordinated.

Source

USAID/Togo. 1981. *LaKara Skills Development Training. Project Evaluation Summary*. 6980388.12.

Advisory Council for Human Resource Development, Honduras

Introduction

The Advisory Council for Human Resource Development (Centro Asesor para el Desarrollo de Recursos Humanos de Honduras — CADERH) was established in 1984 to address the private sector training needs of Honduras. CADERH was originally approved by USAID as a pilot activity and funded through an operational program grant. Subsequent amendments extended the life of the project, increased the amount of funding, and broadened the scope of activity. CADERH is now a fully operating service center, linked with its private sector membership through an executive board. Although it is anticipated that some income will be generated through services provided to members, CADERH relies on USAID for financial support. A proposal is now being formulated to establish an endowment fund for CADERH to ensure long-term support.

Background

CADERH evolved from an informal discussion group formed through the initiative of an USAID official to elicit from members of the private sector their views on how training services could be improved in Honduras. A lack of trained employees was one of the major factors limiting productivity. At the same time, the existing vocational-technical training system was characterized by a lack of standards, low levels of cost-effectiveness (high dropout and low job replacement rates), poor communication with employers, and the absence of effective systems for identifying training needs and for monitoring training results.

Of particular concern was INFOP (Instituto Nacional de Formación Professional), a semi-autonomous public training institution fir[illegible] by the private sector through a payroll tax. [illegible]gh overhead expenses, underqualified instructors, lack of instructional relevancy and quality, and poor coordination were all issues of major concern to employers. Although employers were paying the bill for INFOP, they had little say in the way training was delivered or in establishing standards for its quality and substance. Employers did have two representatives on the tripartite board of directors, but actual authority rested with the public sector members who had the controlling votes. In large part, it was this frustration with INFOP that created a receptive climate for the creation of CADERH (Kelly et al. 1985).

After nearly two years of weekly discussions, USAID financing was obtained for evaluations of training in Honduras and for a study tour to the United States. The purpose of the evaluations was to assess training capability in Honduras and to identify crucial problems. The purpose of the study tour was to acquaint key individuals with other training systems and, in particular, training methodologies which might be applied to private sector training needs in Honduras. Subsequent project amendments and continued funding enabled CADERH to develop an organizational framework, formulate a definite plan of action, and implement a long-term program for addressing employment-related skill needs.

With a membership of approximately 300, CADERH has grown quickly. It has its own office building, an executive director, and three staffed and functioning departments: Vocational Education and Testing, In-plant Training Needs Analysis and Programs, and Multimedia and Materials Production. An independent board of directors, composed of 15 members, administers CADERH. While CADERH currently relies on USAID for financial support, additional income is

generated through membership fees. Future income is expected to be generated by a loan fund, the provision of training needs assessments and certification services, and the sale of training materials and media (McNeil et al. 1989).

CADERH's Services

CADERH is a modification of the service center concept in which several interventions are delivered in coordination. Training-related problems are addressed together with other problems encountered by employers, thus ensuring a fuller use of training. At these centers, services may be provided directly or referrals may be made to other agencies; CADERH opts to provide services directly. Activities center around three core components.

Curriculum development and trade certification. Component I is designed to improve the quality and relevance of training. A major problem encountered by employers is that the quality of training throughout Honduras is uneven; moreover, there is considerable uncertainty about the qualifications of applicants. Employers have no reliable method of determining what skills an applicant has been trained in or to what level of proficiency. The lack of adequate instructional materials, a preponderance of unqualified instructors, weak instructional capacity, and an absence of private sector involvement in functional planning all contributed to poor-quality and irrelevant training. Component I is designed to bring quality and standardization to training.

CADERH is presently developing competency-based instructional (CBI) materials in six trade areas, with additional trade areas in the initial stages of planning and design. The private sector and ten training centers are involved in programs designed to train instructors in the use of CBI strategies and materials.

In the development of CBI materials, CADERH has established and maintained close links with employers. Volunteer trade advisory committees composed of employers, highly skilled workers, and vocational training instructors help define the general standards for a trade, which, in turn, are developed into sets of specific performance objectives and assessment items. Instruction thus reflects work requirements, and student progress is based on predetermined, standardized performance requirements. The instructional format is modularized, providing considerable flexibility and compensating for the lack of qualified teachers. This format also helps improve student achievement and retention rates and reduce instructional time and cost. Perhaps most importantly, instruction can be standardized over time and location, thus providing uniformity throughout training programs. Because instructional content is uniform, program completers can be expected to perform at specified levels.

A uniform certification system can also substantially reduce uncertainty about training quality. Standards for a trade are translated into specific performance objectives. These performance objectives are then validated by a larger group of employers and skilled workers and form the basis for developing certification examinations. The certification process is used for screening potential employees, evaluating present employees, and certifying the competence of graduates of training institutions. Uniformity is thus achieved in the initial skill level of workers.

CADERH has developed certification tests in six trade areas and will complete tests in four others soon. The certification tests need to be validated through practical field trials; at present, they appear to be too difficult and the performance standards unrealistic (McNeil et al. 1989).

The development of certification tests and the creation of instructional materials are linked: the standards developed for certification also serve as the standards for preparing the competency-based instructional materials. To date, over 300 modules have been produced in the six trade areas, in addition to orientation modules and modules in mathematics. The full impact of the CBI program now being used cannot be fully assessed until it has been widely implemented. In locations where the CBI materials are being used, results are positive, with a reduction in instructional time of as much as 50 percent, a program retention rate of 80 percent, and a job placement rate of 70 percent. Cost averages about $0.25 per person-hour of instruction. Roughly 130 instructors and administrators have received training in the use of CBI materials (McNeil et al. 1989).

In general, the development of a CBI system is costly. Materials development is a labor-intensive, time-consuming process which requires considerable trial and revision; teachers must be trained in its use; and system maintenance costs are generally high. The unit cost of competency-based instruction is high unless it can be implemented in many locations. For this reason, CADERH must continue to implement the CBI program as widely as possible.

Training needs analyses and in-plant training. Component II focuses on the private sector. The industry-specific training needs analyses are conducted on an in-plant basis and are used for identifying training requirements. It is possible to gauge the impact of training on employment generation, product quality, and productivity. Training is given to address specific production requirements. These programs are expected to be carried out in firms that anticipate or are now operating in the free zone industrial parks, thus stimulating exports.

Component II is one year behind schedule because of delays in technical assistance and because policy constraints on the training fund have not allowed its use for in-plant training. To date, two industry-specific training programs have been approved for financing, though no training programs have been conducted. CADERH currently lacks the staff to conduct analyses, and the problem of developing a high-quality team will probably remain (McNeil et al. 1989). Once Component II becomes fully operational, however, it has the potential to directly and quickly impact on productivity and quality, thus enhancing the competitive ability of Honduran business. Moreover, the income generated through services will provide operational support to CADERH.

Multimedia and training materials production. Component III is designed to address the long-term need for low-cost, high-quality training materials. A range of services is provided: printing, binding, and distribution of CBI materials; photocopying; production of audiovisual material; and desktop publishing activities. Most of these services are provided to other activity centers within CADERH, although some outside work is done.

The Training Materials Bank disseminates training material developed by the project and serves as a clearinghouse and source of training materials for plants and training centers, thus helping to institutionalize the activities of Components I and II. The Bank also draws on a number of international sources for obtaining, adapting, and reproducing low-cost multimedia training materials.

The income-generating potential of Component III appears to be greater than anticipated. The present level of self-financing is 61 percent. A large proportion of this income comes from internal services to other units of CADERH; nevertheless, the potential for serving outside clients equally well exists (McNeil et al. 1989).

Assessment of Results

The success that CADERH has so far achieved can be attributed to a number of factors. First, and perhaps most important, it is an organization established by employers for the purpose of serving their needs. Employers participated in the initial discussion stages, have played a major role in defining activities, and oversee operations through the executive board. Membership is voluntary; individuals and firms join because of the benefits that will flow directly to them. Thus they have a major stake in CADERH's success.

CADERH must continue to respond to employers or it will lose its effectiveness. Expanding the participation of the private sector and of labor is a continuing challenge. Membership, at around 300, has remained relatively small, despite efforts to expand. CADERH must reach small employers, in particular; they have the greatest training-related needs and the least capacity to deal effectively with these needs.

CADERH is following a course of incremental development. The project started small and focused at first on developing policies and a plan of action. It has expanded as resources have become available and its organizational capabilities have been developed. It is now at a critical juncture; it needs to pause, regroup, and sharpen its ability to complete the tasks at hand. CADERH has probably been overly ambitious in setting goals, some of which it cannot fully address with its present capabilities.

USAID leadership has been effective. Of particular importance is the fact that CADERH has been allowed to mature as an organization. It will

need at least a decade of guidance and assistance by USAID before it will be truly self-sustaining. Technical assistance has targeted developing the institutional capabilities of CADERH to nurture its own growth; at the same time, CADERH staff have taken considerable initiative in formulating and implementing development plans.

The services of both contractors have been disappointing. In part, this is because CADERH lacked the capacity as an institution to absorb and fully use the services being provided. The first contractor, moreover, was probably incompetent. While the replacement contractor performed markedly better, there were still widespread difficulties. The contractor overstated its abilities and proved incapable of accomplishing some tasks. The contractor performed best in training instructors and providing short-term technical experts. It performed least well in the development of certification tests and training needs assessments.

As an organization, CADERH has developed considerable capabilities. While it has benefited from the presence of technical assistance teams, its capabilities for addressing instructional design and certification testing within the Honduran context probably now surpass those of any U.S.-based team. Ironically, it is the failure of contractors to perform satisfactorily that forced CADERH to take the initiative to complete tasks which would not otherwise have been successfully resolved. In the process, the organization has learned much (McNeil et al. 1989).

CADERH, however, needs to expand its cooperative linkages with other institutions serving similar needs. The human resource base in Honduras is small, and CADERH needs to draw on the resources of other service providers and to concentrate resources by linking with others.

In 1986, Amendment III to the project contract added a component designed to assist vocational training centers directly, and in 1987 the project was further amended to expand this activity. The results have been highly satisfactory. Vocational centers now serve poverty areas targeted for help. Funding was provided for building and equipment modernization, implementation of competency-based instruction and certification, and training for center staff. Centers also have access to a revolving loan fund for purchasing production materials. Considerable operating expenses are recovered though production activities, with a current costs recuperation rate of 44 percent. Ten centers have been assisted, with five more in various stages of upgrading. Placement rates appear to be high (70 percent). Increases in cost-effectiveness and higher retention and job placement rates appear to be associated with the CBI system. These centers have proven to be a cost-effective way to upgrade the Honduran labor force, with 2,000 qualified workers currently trained. By any index, this project component has been highly successful (McNeil et al. 1989).

The limited application to date of the CBI program to private sector training shows promising results, with as much as 15 percent improvement in productivity. Only a few industry-specific needs assessments have been conducted, however, and major problems surround the use and administration of the loan fund. Moreover, the problems accompanying the delivery of training to private sector firms are considerably more complex than those associated with the delivery of services to public institutions. If CADERH can surmount these difficulties, it will, indeed, have a major and long-term impact on manpower development in Honduras.

Sustainability and Replicability

The overall development of CADERH has been impressive. It has been measured, steady, and directed. There have been problems, but these have been addressed; whenever satisfactory solutions could not be found, workable alternatives were developed. Planning has been wise. Monitoring and evaluation have guided decision making. USAID has provided critical support. The USAID advisor works directly with CADERH on a day-to-day basis, which has been crucial to the program's success.

To what extent, however, can program success be sustained over the long term? CADERH is still evolving as an institution, and its full potential has yet to be realized. In order to achieve its potential, CADERH must address four major problems:

- it must secure a self-sustaining financial base which will enable it to carry out its instructional functions;

- it must restrain personnel growth over the long term;
- it must recruit, train, and retain the mid-level staff essential to carrying out its activities effectively; and
- it must reach an accommodation with INFOP.

CADERH's current financial capability, as demonstrated by the amount of income generated, shows that it is highly unlikely to survive without the assistance of an outside source of funding, whether it be USAID, another donor, or income from the payroll tax (McNeil et al. 1989). Over the long term, CADERH cannot depend entirely on its income-generating activities to support the organization. Consistent — even if modest — support will be needed throughout its life.

Ideally, service centers such as CADERH should operate on a cost-recovery basis. Costs, however, cannot always be recovered, at least to the extent required to fully support operations. Client demand is not always consistent. Income during slack periods is not sufficient to cover expenses, and there is often a considerable delay in recovering fees. Charges must be kept low in order to attract clients. Small firms in particular have very limited resources; even collectively, small firms may not be a good source of financial support for service centers. Finally, the market size must be large in order to ensure a reasonable financial return. This is not the case in Honduras now, and it may never be the case unless CADERH is successful in providing services to INFOP and the formal educational sector.

In the earlier stages of the project, it was assumed that CADERH could become self-sufficient through marketing its services by 1992. This goal was very unrealistic. There is no known case of a service center operating successfully without outside support. The proposal to establish an endowment assistance fund is sound and should be supported, provided operational costs can be kept low in order to keep the fund intact.

Even if CADERH could approach self-sufficiency through the provision of services, it might not be desirable to do so. The need to generate income would dominate decision making, influencing the form as well as the substance of activities. Policy should not be subordinated to profit. CADERH needs the flexibility to target activities that have development impact but low profit-making potential. To eliminate this flexibility would eliminate the effectiveness of CADERH as an institution for facilitating change. While income-producing activities are important, they should not be expected to be the sole source of support.

Sustainability is directly affected by staff size. Service centers have a tendency to increase staff as they expand services. This tendency should be resisted. The need for services is rarely constant, so there can be considerable down-time during which salaries are paid but little constructive work done. Unless staffs are kept small, the costs of wages and benefits can eventually outweigh the value of the services provided to clients.

CADERH is now engaged in considerable development work. Some of this work can probably be done less expensively though contractual hires, as opposed to direct hires. In the near future, moreover, CADERH needs to make the decision to focus on a select and limited number of activities which it can efficiently manage, which best address its mandate, and which are cost-effective. CADERH needs to contain its growth in personnel while at the same expanding its activities by supporting and linking with other service providers. One of the most direct ways in which CADERH can be effective is to assist in the development of other Honduran intermediary service providers. Rather than attempting to provide direct assistance, CADERH should learn to make referrals. By working through other service providers, staff size can be kept within reasonable limits while, at the same time, a range of services can be provided.

The success of CADERH, like that of most organizations, depends largely upon its management capability. In particular, CADERH must maintain a complex network of collaborative relationships. It must efficiently manage its own structure, which has heavy development and production schedules. CADERH has effective administrators at the top level, but insufficiencies at the mid-level range are impairing its efficiency and effectiveness. Weaknesses exist, moreover, in the ability to locate and employ needed consultants and technical assistants.

Over the long term, CADERH cannot succeed unless it can address these needs. In this respect, CADERH is similar to other organizations in developing countries; programs are not sustainable because of the lack of mid-level personnel. While personnel growth needs to be restrained, the quality and productivity of the mid-level staff must be kept high.

Finally, CADERH needs to negotiate a rapprochement with INFOP, the key institution in the country's publicly financed nonformal training system. CADERH began with the limited objective of reforming INFOP. When these reform efforts were thwarted, CADERH became, in essence, a rival organization. CADERH's long-term success probably depends on developing a constructive working relationship with INFOP. In the first place, in order to become cost-effective, CADERH must expand the scale of its services, and this can only be done by offering services that complement, not duplicate, those of INFOP. For example, at present both are engaged in producing instructional materials. While the quality of the materials produced through CADERH is unquestionably superior, the organization will ultimately need to market them to the institutions served by INFOP if it is to approach cost-effectiveness; otherwise, the market size will simply remain too small. Similarly, services that are currently offered by both organizations drain away scarce resources.

The training challenges faced in Honduras are diverse enough for both organizations to focus on areas of specific responsibility through coordinated efforts. Furthermore, employers are already paying for training services through the 1 percent payroll tax, and CADERH will continue to be faced with reluctance on the part of employers to pay additional fees for identical services, even if their quality is higher. Finally, INFOP, possessing the government's mandate to coordinate the Honduran training system, has a major stake in controlling the political context, and CADERH needs a positive political climate in the long term if it is to be successful.

To what extent can CADERH be replicated in other countries? CADERH's present success is due in no small part to the efforts of two USAID officials. One of these individuals successfully guided its inception and early development, forming a solid foundation for subsequent growth. The other official has been associated with CADERH since its beginning, thus providing essential continuity throughout different stages in the development process. Moreover, USAID has been involved on a day-to-day basis, so the degree of interest, advice, monitoring, and assistance is much greater than would normally be associated with USAID projects. A climate of trust and respect exists, and a very close and effective working relationship has been developed with Honduran counterparts. Whether a similar relationship can be developed in other projects is problematic, but such a relationship is critical to project success.

The experience of CADERH with two different U.S. contractors is instructive. In both cases performance was inadequate, although the second contractor performed at a much higher level. Contractors focus on delivery dates, activities, and products, not on the long-term development of human capabilities. To be sure, many activities are designed for local staff, but staff capabilities must be nurtured over a long period of time, through a mentoring process which a contractor cannot provide. In the case of CADERH, the two USAID officials played this role, which has contributed greatly to the demonstrated success of the project.

The technical components of CADERH are not overly complex. CADERH has developed and implemented a reproducible instructional delivery system which can be used in other Latin American countries. What is required is adequate leadership on the part of USAID and the development of the local capabilities essential to successfully implement the project. Human — not material — resources constitute the major factor conditioning the success of the project.

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Basic Skills Training Project, Jamaica

Introduction

Considerable optimism surrounded the planning of the Basic Skills Training Project in 1982. The new government of Prime Minister Seaga was formulating policies aimed at reversing the economic stagnation that had plagued Jamaica for the preceding seven years. Training was to be an integral part of this policy, and the government and the private sector would work together to revitalize the economy. The Basic Skills Training Project would help strengthen the partnership.

As the Basic Skills Training Project nears completion, however, there is considerably less optimism. The project has not met its established objectives. The government and the private sector did not form a partnership, and the training system in Jamaica was not revitalized. If anything, a progressive deterioration has occurred in vocational training capability throughout Jamaica. What was intended to be a broadly based project strategy became focused instead on establishing and operating four new schools as part of the Human Employment and Resources Training (H.E.A.R.T.) Trust, a key element in Prime Minister Seaga's economic development program.

Many officials feel that the fundamental objectives of the Basic Skills Training Project were sacrificed to the political objectives of the H.E.A.R.T. Trust. Employers are angry because they must now pay a payroll tax for which they feel they receive little in return. Directors of training institutions are disillusioned because the assistance they expected did not materialize. Some members of the National Training Board, designed to coordinate and guide implementation of the new initiative, feel they were let down by USAID, because the mission did not stop the redirection of the project.

What went wrong? The Basic Skills Training Project is an example of a project that went out of control. It cannot be termed a failure because it had some marked successes. Academies have been established which are examples of well-run training institutions, but the overall quality of the instruction they offer is uneven, and the project will not accomplish its objectives. Funds were diverted from other elements of the Jamaican vocational training system to support the academies. Those objectives that were realized were costly and probably cannot be sustained.

Background

When the Basic Skills Training Project was approved in 1983, skills training services in Jamaica were provided through a loosely structured, uncoordinated "system" spread throughout nine government ministries. The Ministry of Education, for example, operated three levels of training programs: pre-vocational education in 130 high schools; vocational education in seven technical high schools, which enrolled 6,000 students aged 14-17; and technician and middle-management training in the College of Arts, Science and Technology, which enrolled 1,700 full-time, 1,000 part-time day, and 800 part-time evening students. The Ministry of Youth and Community Development (MYCD) conducted handicraft training in 67 Community Centers, which enrolled 3,500 persons; agriculture training in eight "4-H" camps, which enrolled 400 students; and pre-vocational training in five Youth Community Centers, which served 1,000 students. In addition, 2,200 students were enrolled in the 24 Industrial Training Centers administered by the MYCD; 75 students in the German Automotive School; and 130 students in the Garment Industry Training School. The MYCD also provided training through an apprenticeship system, which involved 270 persons. Training offered by the Jamaica Industrial Development Corporation in various industrial and commercial firms was a source of skilled manpower (USAID/Jamaica 1983).

Jamaica did not lack training outlets; rather, it lacked the capacity to provide quality training coordinated with the needs of business and industry. If anything, the training "system" was too large, extending beyond the capacity of the government to manage or support. Almost without exception, programs were seriously underfunded, lacking the recurrent expenditures required to keep them operating satisfactorily. General deterioration had set in: buildings were in a state of disrepair; machinery and equipment had become inoperable due to lack of maintenance; instructional materials (if available at all) were in short supply; and there were too few qualified teachers. The elements of a training system were in place, but were fragmented,

underfunded, poorly managed, and only loosely linked with business and industry. The challenge was to consolidate and revitalize the existing training system, not to expand it.

The Basic Skills Training Project was intended to upgrade selected elements of the system, coordinate component parts, and strengthen ties to business and industry (USAID/Jamaica 1983). According to the Project Paper (USAID/Jamaica 1983, xv), activities were to focus on three areas:

> (1) assistance for the institutional development of the Human Employment and Resources Training (H.E.A.R.T.) Trust, which will, among other things, regulate, evaluate, fund, promote and coordinate new and existing skill training programs included in the GOJ's desired skill training system; (2) upgrading and expansion of nonformal skill training programs and services within the Ministry of Youth and Community Development; and (3) upgrading and expansion of formal technical level skill training services and programs within the Ministry of Education.

At the time of the initial project design work in the spring of 1982, a National Training Board was envisioned to play the key coordinating and leadership role. A revolving trust fund, financed through a 3 percent payroll tax, would be the major source of revenue for an integrated and revitalized training system. Employers would play an important role on the Board, since their money would finance the training system and they would be in the best position to assess training priorities. USAID, working with the interagency Steering Committee formed to design the project, had stressed that these project features were essential to make the training system responsive to private sector training needs.

In the spring of 1982, the Steering Committee and USAID were aware of plans for the H.E.A.R.T. Trust. However, there was only a vague idea of what the program would entail and how (if at all) it would fit into the proposed Basic Skills Training Project. By the fall of 1982, though, the issue of the H.E.A.R.T. Trust dominated planning. Fifteen months passed from the time that the Project Identification Document (PID) was approved until the Project Paper was finalized, mainly because of the need to reach compromises over the role of the H.E.A.R.T. Trust.

During this time, project control and management were effectively transferred from the National Training Board to the H.E.A.R.T. Trust. In the process, the Government of Jamaica's "Political Directorate" became the lead partner in the Basic Skills Training Project (USAID/Jamaica 1983). The idea of a training board was retained as a concept in the form of the H.E.A.R.T. Trust, but, since the Trust was administered from the Prime Minister's office, the executive director of the Trust had overwhelming power, even though ten members were appointed from the private sector. As a consequence, the H.E.A.R.T. Trust became more responsive to the political agenda of Prime Minister Seaga than to the needs of Jamaica's business and industry. Much private sector support was lost.

USAID was aware of the problems that could develop if the project were politicized. A guidance cable stressed the need to ensure private sector participation in all facets of the project, as well as the need to simplify the project. The cable even questioned the role and value of the H.E.A.R.T. Trust. Throughout the process of developing the Project Paper, USAID tried to strike a balance in order to realize project objectives. Perhaps putting the best face on a situation in which control was already lost, the Project Paper emphasized that with such high level support, a considerable amount of leverage was gained. "The H.E.A.R.T. Trust will permit resources to directly enter the private sector," the Project Paper stated, "while at the same time providing it with essential expertise, material and instructor training . . ." (USAID/Jamaica 1983, 5-7). None of this, however, actually happened (Charleson 1987).

USAID was never able to regain control of the project, and its fundamental objectives were not realized. Today, as the project nears completion, the Jamaican training "system" is in greater disarray than before, the links with business and industry are as diffused as ever, and considerable resources have been spent on questionable ends. It is true that some of the academies are showplaces, that much training has taken place, and that some young people have found employment. The major impact of the project, however, has been detrimental to the overall long-term training capability in Jamaica. The

government has in place a system of academies which are too expensive to operate, which provide training at a skill level inappropriate to the needs of business and industry, and which drain resources from other training programs better able to address critical skill needs. Collaboration and coordination with the private sector are still lacking.

The H.E.A.R.T. Trust

The H.E.A.R.T. Trust was slated to become the centerpiece of Prime Minister Seaga's program to revitalize Jamaica's economy and to address the high unemployment rate among youth. The Trust focused on the problem of youth unemployment, and not on the underlying need to revitalize, coordinate, and redirect the extensive training system already in place. The large group of poorly educated, disaffected young people was a social threat which could be turned into an economic and political bonus through the H.E.A.R.T. Trust, it was reasoned. "The challenge of the GOJ is to convert this group into human resources attractive to investors, and enable them to fill the semi-skilled positions being created by the economic expansion," the Project Paper noted. "Not only do they lack skills, they have negative attitudes and behavior patterns with respect to membership in the labor force. If they are to be converted from potentially dangerous elements in the social/political structure into attractive human resources needed to fill semi-skilled entry occupations, significant resources will be required to effect the change" (USAID/Jamaica 1983, 32).

The financial needs of the H.E.A.R.T. Trust dominated project implementation. To date, total project costs are over US $63 million, or around US $29 for each Jamaican (Kelly and Kenneke 1989). Other project elements in the Ministry of Youth and Community Development and the Ministry of Education appear to have been reduced or eliminated in order to shift resources to the H.E.A.R.T. Trust.

The proposal supported by the H.E.A.R.T. Trust was to develop ten academies, which would serve as residential vocational training institutions for school dropouts and unemployed youth. This approach differed from the 24 Industrial Training Centers (ITCs) established under the previous government, which were day centers, strategically placed within commuting distance of surrounding communities. The ITCs were left to stagnate. While both approaches served the same target population, the academies would encourage students to leave their homes to attend school and seek employment elsewhere, whereas the ITCs were intended to help rejuvenate community life. The academies afforded greater control over students, but the cost was high.

The H.E.A.R.T. Trust increasingly assumed a primary management role, directly overseeing the development and daily operation of the academies. Its original planning, coordination, and evaluation functions gave way to the immediate concerns of promoting and overseeing the academies. In effect, the H.E.A.R.T. Trust became a competitor to other skill training outlets in Jamaica and, thus, could not credibly serve its intended role. Moreover, a widely held perception developed among other agencies that the H.E.A.R.T. Trust was using its close links to the Prime Minister's office to enhance its own position at the expense of others.

The Trust's greatest success was probably in raising the consciousness of the public to the need for skills training, and in focusing attention on the link between such training and economic growth and development. The academies were used as showplaces and became the focus of media attention. No opportunity to bring in television cameras and reporters was lost. Model programs which showed that training could be delivered were developed. In the case of the Garment Industry Training School, there was a direct and demonstrable link with the government's employment and growth policy. To the extent that the H.E.A.R.T. Trust was successful in galvanizing public support and cooperation, project outcomes have been positive.

The academies are attractive and well run; their day-to-day operations are orderly. The instructional program, however, appears to be uneven. The qualifications of instructional staff vary from academy to academy. In some cases, instructors lack good teaching and classroom management skills. Insufficient attention has been given to designing curricula that relate directly to the training requirements of business and industry, and to designing effective programs. While there are some very good programs, there are also very poor ones that are indistinguishable from the low-quality programs run elsewhere. In general,

more emphasis has been placed on the image of the academies than on the substance of their programs.

The overall output of trainees in the semi-skilled and skilled category has been impressive. Of the 9,983 individuals who completed training in one of the various training institutions throughout Jamaica during the 1986-87 academic year, 6,450, or 65 percent, were products of H.E.A.R.T. programs. These figures, however, need to be qualified. H.E.A.R.T. programs for semi-skilled workers tend to be short-term, so output figures alone are misleading. Furthermore, 1,081 of these individuals received on-the-job training from employers who opted to participate in the school leavers' program rather than pay the 3 percent payroll tax. At the same time, there was a drop in completions of upgrading programs designed for skilled and semi-professional fields, areas not served by the H.E.A.R.T. Trust but which have critical shortages. There was also a decrease in professional, technical, and managerial training (Planning Institute of Jamaica 1988).

It is difficult to make a full assessment of the impact of the Basic Skills Training Project because reliable placement figures and cost data are lacking. H.E.A.R.T. officials have been reluctant to carry out the tracer studies essential for fully assessing the project's impact on employment, and data from the Ministry of Education are unreliable (Kelly and Kenneke 1989). A pilot study was carried out, but its methodology was flawed. Nevertheless, it appears that employment among H.E.A.R.T. graduates is around 50 percent, though the employment rate for jobs in which individuals were trained and placed is much lower, perhaps as low as 3 or 4 percent and as high as 20 to 30 percent, in some occupations. The average placement rate for all occupations in which training was given is no higher than 10 or 12 percent.

The unemployment rate of 17- to 25-year-old Jamaican youths, regardless of educational background, is around 30 percent. With a placement rate of 50 percent, the Basic Skills Training Project is not making a great impact, especially if the placement rate in fields for which training was given is as low as it appears. Youths off the street apparently have less difficulty finding jobs than those who undergo training in the H.E.A.R.T. academies.

One reason for low placement rates in the fields for which training was given is the skill level of training. Much of the training is for low skill-level jobs, which traditionally have high turnover rates. Program completers earn low wages and tend to seek other types of employment if available, or even opt not to work. The average weekly wage of employed graduates from Stoney Hill Academy is typical: J $111 for females and J $120 for males (US $19 and $21, respectively). In general, the H.E.A.R.T. academies turn out relatively large numbers of program completers in low-skill and low-income occupations with high turnover rates. Of the 5,369 program completers during the 1986-1987 school year, 4,940, or 92 percent, appear to be in low-level, low-paying semi-skilled jobs (TrapeJohnson 1987; Planning Institute of Jamaica 1988).

Another plausible reason for low placement is that students may decide to return to their communities after the completion of training, and jobs may not exist there in the fields in which they were trained. The curriculum of the academies is largely skewed to urban employment, although students are recruited from across the island and include considerable numbers from rural areas.

The cost of training appears to be high, which is to be expected since the academies are residential institutions. The training must have high personal and social value in order to justify the expenditure. Accurate cost figures, however, are difficult to identify because capital and operating costs are not separated clearly, and the administrative costs of the H.E.A.R.T. Trust are combined with the direct operational costs of the academies. The best conservative estimate is that recurrent operational costs for training are around US $2,000 per student year. Thus, training an individual in an academy is at least four to five times as expensive as training students in the technical high schools and about 25 times more expensive than per-student costs in primary schools (Planning Institute of Jamaica 1988; Kelly and Kenneke 1989). Moreover, these are new institutions; as depreciation, maintenance, and replacement costs escalate, the unit cost of training will increase. Given the low skill and wage level of the occupations for which individuals are prepared, the relatively high cost of training is difficult to justify.

The administrative costs of the H.E.A.R.T. Trust, although difficult to determine, appear high, also. The organizational chart reveals a top-heavy organization, and salaries are generous by Jamaican standards.

One reason that instructional costs are so high is that the academies provide remedial instruction, which extends training time. Students are unable to profit from instruction because of their poor literacy and numeracy skills. Competency-based instructional materials, in particular, are ineffective with nonreaders because of their heavy reliance on language skills. The project, however, placed heavy emphasis on the development of competency-based instructional materials, even though these are of little use in the academies.

The major attack point for literacy skills should be the elementary schools, not the academies. The elementary schools, however, are seriously underfunded, receiving only 33 percent of the total educational budget, and the physical plant throughout Jamaica, as well as the quality of instruction, is progressively deteriorating. Over 50 percent of the primary school and all-age graduates are functionally illiterate (approximately 50,000 students per year). In 1987, per capita expenditure on primary education was US $62.70, in contrast to more than US $2,000 per academy student (Education and Training Unit 1987). It is difficult to justify such expenditures in light of the serious problems at the elementary school level, particularly when the only way to stem the flow of illiterate youth in the long term is to improve elementary education.

USAID Components

In regard to the H.E.A.R.T. Trust, USAID-financed project inputs were to focus on activities concerned with policy making, planning, coordination, monitoring, and evaluation of skill training. Technical assistance, participant training, and the procurement of equipment would constitute the major activities. The Trust was given overall supervision responsibilities for the implementation of project components, including those associated with the Ministry of Youth and Community Development and the Ministry of Education. Government funds were to be used for operational expenses, equipment and supplies, and research activities.

The MYCD project component was to address the upgrading and expansion of nonformal training facilities, including the procurement of equipment and the development of instructional resources. Strengthening management capacity was also a major objective. In general, these objectives were not attained. In cases where they were addressed, the impact has been minimal, except where H.E.A.R.T.-related objectives were involved. One reason is that the MYCD appears to have been perceived as a rival to the H.E.A.R.T. Trust. Also, the source of financing for the MYCD has shifted to revenues raised through the payroll tax, for which it must compete with the Trust.

The MYCD's Nonformal Education Division was responsible for policy making, planning, quality control, and general technical and professional services for the H.E.A.R.T. academies. The Vocational Training Development Institute (VTDI) was responsible for the development of competency-based curriculum materials and instructor training, serving the academies as well as other nonformal training organizations. USAID planned to assist with the establishment of four academies; two of these would be under the authority of the MYCD and two under that of the H.E.A.R.T. Trust. In 1986, however, Prime Minister Seaga gave the Social Development Commission the responsibility of operating the two academies assigned to the MYCD. The Social Development Commission is a statutory body established by the MYCD to operate residential youth camps that provide vocational training. Following student unrest in the academies and a commission of inquiry (June 1988), the H.E.A.R.T. Trust was given the responsibility for operating all four of the academies that were assisted through the Basic Skills Training Project.

The project financed participant training, the purchase of equipment, renovation of one academy, in-service training for VTDI personnel, testing and monitoring activities, and tracer studies. The development of curricular and instructional materials was a major activity, and USAID funds were to be used through the VTDI to develop a Training Materials Resource Center responsive to the training needs of the private sector. The government contributed to the construction and renovation of training facilities,

including the academies, and supported local personnel and research activities.

In regard to the Ministry of Education, USAID funds were used to provide technical assistance, participant training, equipment purchase, and construction and renovation. The Government of Jamaica provided funds for construction and renovation, in addition to regular operating funds. The Ministry of Education had its own funding, separate from the training fund generated by the payroll tax. Project activities funded by USAID included the renovation and upgrading of the seven technical high schools, the upgrading and conversion of four regular high schools into technical high schools, the development of a teacher training program, and the development of private sector advisory committees to provide assistance in curriculum development, occupational counseling, and job placement.

The private sector advisory councils for the technical high schools were not established, although subject area committees have been developed for the Ministry of Education. Counseling and student placement activities have not been fully implemented. Renovation and upgrading of the seven technical high schools has been partially carried out, and four additional high schools have been upgraded to technical high schools. Technical assistance, participant training, and in-service training have contributed to system improvements (Kelly and Kenneke 1989).

Contractor Performance

The prime contractor, hired in August 1984, had responsibility for technical and management assistance to all project components. To date, however, the prime contractor has not been able to meet project goals. In cases where activities have been completed, performance has often been substandard. Serious performance problems exist in the delivery of virtually every aspect of the contract (Blank 1988). Procurement services, for example, have lagged far behind schedule. In some cases, after buildings were certified as ready to receive equipment, the contractor spent more than two years formulating equipment lists.

A key component of the project was the development of instructional design and testing capability. Self-paced, competency-based, modularized, and programmed instruction was to be introduced. The contractor was to build the capability for developing and producing training materials. Through the Training Materials Resources Center, these materials would be made available to the H.E.A.R.T. academies as well as to other public and private sector training institutions. The VTDI would adapt materials to meet specific training requirements.

The results were poor. A long-term technical advisor was assigned to the VTDI for a two-year period with specific responsibility for preparing a long-range plan. The plan was developed but not approved. Without the plan, the development process was uncoordinated, resulting in materials being prepared but not widely used. They were inappropriate to the Jamaican culture, language, economy, and training needs. While there has been some use of the materials in the technical high schools, virtually none are used in the academies.

A full analysis of the reasons for the contractor's poor performance has not been conducted. Probable reasons include unqualified technical advisors, a failure to fully use Jamaican counterparts, inadequate support services, interpersonal problems between local staff and consultants (and among consultants themselves), poor planning, and poor follow-through, among others. Failure may also no doubt be attributed to the facts that timely decisions were not made by the H.E.A.R.T. Trust, that the capacity to absorb and use the services was lacking, and that project elements changed, making compliance difficult. Innumerable project delays were also associated with delays on the part of USAID (Blank 1988).

Lessons Learned

The Basic Skills Training Project, with the H.E.A.R.T. Trust playing a major leadership role, had the potential to significantly affect the Jamaican skills training system. Linked closely with the Prime Minister's office through the H.E.A.R.T. Trust, the skills training system could have been closely coordinated with national economic development policy. Furthermore, the leverage of the Prime Minister's office could have been used to consolidate the system by removing redundancies, phasing out poorly operating programs, consolidating resources, and estab-

lishing clear policies. Considerable bureaucratic inertia and resistance would have had to be countered, and the H.E.A.R.T. Trust would have had to elicit widespread support. Instead, a new organization was created which effectively became a competitor in the skills training arena, forsaking its potential role and resulting in the addition of yet another costly layer to the already overextended training system. Existing training institutions could have been used to accomplish the same objectives at considerably less cost. The H.E.A.R.T. Trust failed to realize what could have been its most important function — to establish direction, coordinate, manage, evaluate, and assist.

The Basic Skills Training Project was large and complex, involving different ministries, agencies, and institutions. It also involved different levels of activity, which varied in complexity and difficulty of implementation. These activities had to be planned, designed, and carried out in a relatively short time span, and implementation of the project placed heavy demands on an already weak infrastructure.

The training system in Jamaica was seriously overextended even before the implementation of the Basic Skills Training Project. Through the activities of the project, the system was further extended, resulting in deterioration of the training capacity that already existed. Although the training fund was intended to provide financial support, it was used to replace, not to complement, current government funding, and was used mainly for H.E.A.R.T. activities. As a consequence, other nonformal training programs suffered a net loss of income, had to curtail training activities, and were unable to address program development needs.

The most pressing need in Jamaica was for program consolidation and revitalization, not expansion. Under conditions of scarce resources, project activities that add to the existing financial obligation should not be funded unless additional sources of funding are generated, or unless existing activities are phased out to make way for the new activities. To do otherwise only reduces the general level of support, which is already in most cases insufficient to maintain program quality. The result is additional deterioration in quality.

From its inception, the Basic Skills Training Project was ambitious. The scope of activities exceeded the capabilities of USAID, the Government of Jamaica, and the contractor. Failure by all parties to establish an effective management structure contributed to the failure of the project. In particular, no effective monitoring and evaluation system was established, so corrections and changes could not be made during the course of the project.

Projects of this size and complexity need a long time span, and investments need to be small and incrementally expanded as the system develops and becomes capable of effectively administering and managing project activities. Feedback and assessments are necessary to gauge the maturity of the system, and project expansion should be based on demonstrated ability to perform. It is important to find out what works and what does not work before expanding. For a project the size of the Basic Skills Training Project, the investment needs to be spread over at least a decade.

Many of the problems that the project experienced with contractors are similar to those experienced in other projects. These problems include, among others, an inability to meet project goals, a lack of continuity in services, and substandard performance. Contractors are at their best in providing material inputs such as equipment and machinery. They perform least well in strengthening in-country capabilities, such as the production of instructional and test materials, which are to be developed on-site with the collaboration of host country staff. A major purpose of these activities is to enhance the local capacity to develop and sustain the instructional system. But often what happens is that consultants are brought in to give workshops and work with local staff in order to provide evidence that "training" has been given, and representative materials are produced, often by adapting U.S. material off the shelf. Once the consultants leave, little is left behind: some boxes of material, perhaps, which may or may not be used. Such was the case with the Basic Skills Training Project.

The development of the professional capabilities essential to establishing and maintaining instructional systems is a long process that involves sustained effort. Human capabilities must be developed and integrated into a system capable of producing the desired output, whether it be certification tests, competency-based materials, or in-service training. It is not a

process in which contractors can immediately "deliver," and thus fulfill their contractual obligations. Extremely complicated dynamics are involved in establishing a functional and sustainable training system. A long-term commitment, based on something other than the profit motive, is required.

Project objectives, when they are sound, need to be sustained. Otherwise, constructive alternatives need to be found. In the case of the Basic Skills Training Project, the Prime Minister's office was able to gain control and direct financial resources toward political objectives which were in large part contrary to the objectives of the project. To be sure, it is certainly not possible, or even desirable, to isolate a project from the political arena. There is an essential and important political dimension to technical assistance projects. But there is a point beyond which political influences so distort the objectives that it is no longer prudent to stay involved.

The concept of a National Training Board has merit. To function successfully, however, such a body must be free of government domination, truly represent the constituencies that it serves, control its own budget, and possess the autonomy to make and carry out decisions. Through the power of the Prime Minister's office and the control of appointments, the Executive Director of the H.E.A.R.T. Trust controlled the Board, which did little more than rubber-stamp decisions that had already been made. Moreover, by controlling the training funds, the Executive Director had considerable power to carry out the political objectives of H.E.A.R.T., thus circumventing the original purpose of the Board, which was to coordinate and upgrade a broadly based training system responsive to the economic needs of Jamaica.

The experience with H.E.A.R.T. only confirms similar experiences in other countries where experiments with tripartite national training boards have been attempted. While the concept is sound, the result can be detrimental if the government gains control of the board, or if the board does not represent the interests of the constituencies it is intended to serve. This is particularly true when a source of revenue is at stake. Too often, the government considers the training fund to be but another source of funds at its disposal, and soon the fund is dissipated into activities that have little relationship or value to employers. This is particularly true in countries in which public bureaucracies are maintained as political constituencies.

A payroll tax is often used for the purposes of building a training fund. However, unless this fund is under the control of an autonomous board, responsible to the constituency it is intended to serve, there is little likelihood that the fund will be used for its intended purpose. Employers, moreover, will soon become disaffected because they are being taxed for services from which they receive little benefit.

With a change of government in Jamaica, the H.E.A.R.T. Trust will be reconstituted in some other form and renamed. A new set of activities will be designed to be identified with the new government. The concept of a training board and the use of a payroll tax, however, are now realities in Jamaica, and they will no doubt continue. Unless the reconstituted training board, in whatever form it takes, has independence and is truly representative of the private sector, the H.E.A.R.T. experience will be repeated again in an altered form and with different participants.

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