

THE FORUM

For Advancing Basic Education and Literacy

Volume 3, Issue 1, November 1993



**Work,
Productivity,
and Schools**

To Our Readers

"Each nation's primary assets will be its citizens' skills and insights."

Robert Reich

The Work of Nations

The experience of the newly industrialized countries of Asia offers convincing evidence that it is possible for a country to begin with few resources and little capital and achieve a high standard of living. The critical elements seem to be quality education for all, prudent use of technology, good planning and research. Though education has long been associated with productivity, the notions that education and knowledge can *lead* economic development and that knowledge is a critical component of production are relatively new. We are still sorting out the implications of these ideas for the kind of education we provide and how we arrange work.

At first glance, it may seem that work mainly concerns secondary and higher education. In fact, work is at the heart of basic education. Most children who leave school do so because they must work. In many countries, primary education is the only schooling the vast majority of children get. In such countries, any widespread economic effects desired from education will have to originate in primary school. Education's most important contribution to economic growth and productivity is the provision, to all children, of a sound foundation in science, mathematics and language.

Implicit in discussions of education and work is the idea that technically more advanced economies require schools which emphasize innovation and creativity more than do less-developed economies. Joshua Muskin's research on education in the informal sector in Côte d'Ivoire draws the opposite conclusion. Because poor countries lack capital and resources, they are in greater need of entrepreneurial and innovative education. Rather than emphasizing simple acquisition of isolated facts, schools need to help students learn to find, create and use knowledge.

Jon Quah outlines aspects of an East Asian model of development—solid education and training and strong government coordination of economic and human resource development policies. He also notes the importance of utilizing



Photo: Jacques Tourelle

With this issue of The FORUM, we leave the school in some sense, turning from the internal concerns of school systems examined in Volume 2 to the broader social impacts of education, our focus in Volume 3. The promise of productivity and economic growth is among the most common of rationales for education. A "productive" education develops in all future workers—including rural and informal sector workers such as this Thai farmer—both academic skills and the capacity to innovate.

human resources effectively, especially in the public sector.

The literature and practice on finance and provision of education and training was extensively reviewed by Arvil Adams, Adrian Ziderman and John Middleton. An article abstracted from *Prospects* describes their framework for dividing education and training tasks between the government and market.

For women, there is nothing automatic about the translation of education into productive and well-paying work. Carolyn Winter describes how Latin American legal systems, in different and unintended ways, prevent women from formal participation in the labor force. T. Paul Schultz argues for greater public investment in female education. Improper reading of wage signals may contribute to under-investment in women's education. Women often receive lower wages than men, but this is an inappropriate measure of returns to women's education. Instead, one must look at the wage "premium" between more and less educated women. Data from a study by George Psacharopoulos and Ying Chu Ng show that, despite lower female wages, the returns to women's education exceed those to men's.

Henry Levin describes how organization of the workplace and use of technology can either enhance or block workers' use of education for greater innovation and productivity. Claudio de Moura Castro follows with an overview of five

historically influential "models" of education and work.

The Academy for Educational Development looks at job training programs for disadvantaged youth in New York City and suggests that successful training programs must develop more than just job skills. They should incorporate academic material into their instruction and reach out to students. As organizations, they must continually be willing to change and to learn. Kenya's Undugu Society has adapted the delivery of education to the needs of Nairobi's street and working children. While gaining a sense of belonging, children learn academic and productive skills.

In our last article, James Cobbe again raises the idea of responsiveness to economic needs. He suggests that Indonesia's school curriculum ought to focus more on the work needs of rural and informal sector workers. His preliminary analysis suggests the kinds of simple analyses that policymakers can carry out with relative ease using existing data.

This issue begins Volume 3 of *The FORUM*, in which we look at education in relation to major social issues—work, health, the environment and democracy. We would like to make a special point here of encouraging you to send us responses and material whether finished manuscripts or ideas for articles. We welcome letters, articles, photographs and artwork, praise, criticism and better ideas.

James H. Williams, Editor

Contents

The Forum

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- 2 Primary School and the Informal Sector in Côte D'Ivoire** by Joshua Muskin
The ability to innovate at work must be taught or at least fostered.
- 4 Developing and Utilizing Human Resources in East Asia** by Jon Quah
An effective human resource strategy promotes economic development.
- 6 What Role for Government in Vocational Education and Training?** abstracted from Prospects
The first priority for public policy is to strengthen primary and general secondary education.
- 8 Legal Reform to Complement Educational Investment** by Carolyn Winter
Laws designed to protect women often limit their work opportunities.
- 9 Public Investment in Women's Schooling** by T. Paul Schultz
Social returns to education favor greater public investment in women than in men.
- 10 Earnings and Returns to Education in Latin America** based on World Bank data
Women earned less than men despite higher returns to education in the 1980s.
- 11 Workplace Organization for Productivity** by Henry M. Levin
Firms organized to permit workers' discretion can better capture the productivity of educated workers
- 12 Models of Vocational Education and Training** by Claudio de Moura Castro
Most work-related education and training institutions are based on a small number of original models.
- 14 Job Training for School Dropouts** from a report of the Academy for Educational Development
Successfully teaching job-related skills requires more than teaching the skills themselves.
- 15 Basic Education and Training for Disadvantaged Youth in Kenya** Undugu Society of Kenya
Students are trained to start their own businesses or find employment as artisans.
- 16 Using Existing Data to Think About Education and Work Policies** by James Cobbe
The kinds of questions a policymaker can ask using existing data
- 17 Closing Thoughts and Additional Reading**



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Primary School and the Informal Sector in Côte d'Ivoire

by Joshua Muskin

In sub-Saharan Africa less than 10% of primary school students go to secondary school and the majority of the population lives in rural areas. Most Africans work outside the formal wage-earning sector, in the informal economy as subsistence and small-holder farmers, independent merchants or artisans.

In this context, the current emphasis on preparing all students for secondary school and formal sector employment seems misdirected. For almost all children, primary school is the only formal education they will get.

The current mode of education is characterized by strict discipline, rote mastery of facts and intellectual techniques. Typically, primary school pays little attention to reasoning, application or creativity. Yet these are the sorts of abilities students will need most for the informal self-learning and apprenticeship training experiences most will encounter. Providing such preparation does not require the sacrifice of academic rigor or the selection function of conventional schooling.

In 1989, I conducted research among independent artisans and entrepreneurs in the informal sector of northern Côte d'Ivoire. The major research question was: How can primary school better prepare students in the skills, knowledge and attitudes necessary to become successful apprentices and masterful, productive

artisans? To answer this question, 200 artisans in the informal trade sector and about 20 technical agents responsible for monitoring and assisting the sector were interviewed, surveyed and observed.

Few apprentices or master artisans (*patrons*) had attended school. Schooled or not, both *patrons* and apprentices did poorly on tests of basic academic skills – math, literacy and reasoning. Interviews made it clear that that entrepreneurs could benefit from academic skills. With minimal math skills, carpenters would be able to make accurate measurements and merchants correct change. If illiterate, tailors must remember every detail of customer requests – cuffs or no cuffs, pleated bodice or flat, the number and location of pockets. Carpenters who have difficulty with abstract textual (versus contextual) recall are unable to follow drawings. This lack of academic skills keeps artisans as marginal, poorly-paid tinkerers. (This is not to minimize the importance of restricted access to capital, markets, quality materials and equipment as obstacles to success.)

Not that artisans lack motivation or imagination. Their products are quite acceptable, functionally and visually. Indeed “aesthetic” production is an important professional concept. Artisan-entrepreneurs use various “tricks of the trade” to compensate for their lack of formal academic and technical skills. Cloth merchants, for example, sell fabric cut to standard lengths to avoid using

centimeters. A single *pagne* is enough for a short-sleeved shirt. A long-sleeved shirt requires two. A *pagne* cloth merchant simply cuts along the correct fold. Patrons often rely on apprentices to make calculations, write out invoices and receipts. Some entrepreneurs avoid difficult calculations altogether. To the test question, “How much change should a customer receive for a bill of 1815 CFAs paid with a 5000 CFA note?” a restaurant owner objected, “A meal here costs 1500 CFAs. There is never 15 CFAs here at my restaurant.” After I rephrased the problem in terms of a lunch bill of 1800 CFAs, she replied immediately, “3200 CFAs. That I know by heart.” Relying on cleverness, a methodical approach and a great desire to succeed, artisans generally define an effective if not efficient way to perform the task.

Lack of academic skills also limits artisans’ professional growth. I asked a carpenter I saw tracing 90 and 45 degree angles, “How many degrees are there in a right angle?” He replied, “45.” This error had no effect on the frame he was building, yet he would likely be unable to make a hexagonal table. An apprentice auto mechanic had to refuse an offer from a petroleum company to pay for his technical training because he was illiterate. Aspiring electricians reported similar tales.

Patrons identified different advantages to schooling. They claimed that apprentices with some schooling learn the profession more quickly than unschooled apprentices. Basic academic skills are seen as valuable in both technical production and business. However, *patrons* tended to emphasize attitudinal and “innate” skills more than academics. For example, the *patrons* I interviewed were quite articulate about the personality traits and social skills (in addition to technical expertise) necessary for professional success. Knowing how to repair an engine, make a dress or install and maintain a village handpump is virtually useless to an aspiring entrepreneur, they observed, if s/he lacks patience, discipline and persistence. A skilled artisan’s talent is wasted if s/he lacks the sociability and respect to attract clients. Successful apprentices must have curiosity and openness to learn all the *patron* has to teach.

Artisans noted in a roundabout way the school’s role in helping develop these

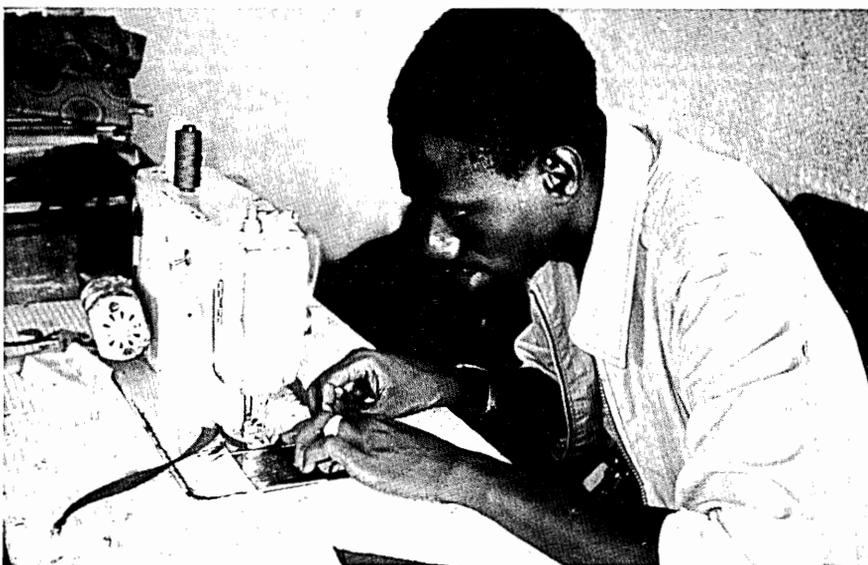


Photo: Joshua Muskin



Photo: Joshua Muskin

traits. Students leave family compounds daily to interact with classmates, teachers and visitors in the formal school setting. They receive lessons on respect, cooperation and discipline in the Moral and Civic Education curriculum. Group tasks such as play, school clean-up and school cooperative activities give students practice collaborating with others. Homework and independent classroom assignments foster discipline and persistence. Still, many *patrons* complained that schooled apprentices fail to translate these characteristics into respect, diligence and patience in the workshop. Students apparently feel these behaviors are not meant for "lowly" informal sector jobs.

Why do *patrons* not stress the academic content of schooling? On the one hand, for unschooled *patrons* to place too much value on academic skills would be to admit their own inadequacy. On the other hand, Ivorian students themselves may not be able to put school-acquired skills to productive use in the workplace. The apprentice system does not take full advantage of apprentices' academic skills. Unschooled *patrons* generally cannot help apprentices translate academic knowledge into occupational acumen. With little schooling of their own, *patrons* train apprentices the same way they learned their trades, transferring techniques of "aesthetic" production and compensation. In other less desirable ways, apprenticeship may resemble schools. Both take place in a repetitive, disciplined manner in which the learner obeys to "get by" to avoid the sharp rap of the teacher-patron's knuckles. *Patrons* use a pedagogy of imitation and repetition. In this the schooled apprentice has received exemplary preparation.

In the strict hierarchy and discipline of workshops, apprentices usually avoid

suggesting innovations for fear of embarrassing or angering the *patron* or older, non-schooled apprentices. Indeed, *patrons* usually do not appreciate apprentices who speak up, describing them as spoiled, impatient, ill-mannered. More serious pedagogically is most former students' inability to apply concepts studied in school to problems outside. Having learned math by rote, most students are unprepared to add, subtract and divide boards, bars and buttons. At school, math, science and geography involve solving problems posed by the teacher or text. In the

... Africa (and likely the rest of the world) needs individuals who can think creatively and act independently, not a populace expecting to march obediently along the school to civil service path.

workshop, however, the worker must conceptualize the problem, and an appropriate problem statement may not be clear. Practical tasks require an ability to reflect, identify the components of a problem, and represent relations among components in a way that can be solved with available tools from mathematical calculations to hammer and saw.

In describing professional mastery, artisans gave great value to "intelligence," an active kind of curiosity. Yet schools tend not to encourage this sort of thinking. Schooling quells precisely the positive attributes of young children – curiosity, expressiveness and openness to discovery of the world – needed to apply academic skills to real problems. At the same time that schools develop students' ability to communicate, they incarcerate this instinct with strict discipline and forced respect.

For example, Côte d'Ivoire's Education Télévisuelle initiative of the 1970s was largely an attempt to emancipate the curiosity and expressiveness of primary school students. Accustomed to passive, "obedient" students, secondary school teachers receiving graduates of the program viewed students' greater "expressiveness"

as poor discipline (Sosoo, 1986; teacher interviews).

Despite curricular reforms, classroom instruction treats students as passive receptors of academic lessons. Passing from Years 1 & 2 to Years 5 & 6, an observer is struck by differences in students' eagerness to learn. When asked a question, younger children exuberantly try to catch the teacher's attention. After 5-8 years in the primary school system, students sit almost frightfully still. Just as students acquire math skills without learning to apply them practically, they acquire communications and study skills without learning to use them to learn and contribute to the world. This may be fine for the factory worker or a formal sector employee manning Lewis's (1954) surplus labor army, but not for independent entrepreneurs in a country needing initiative and creativity to compensate for a lack of resources and infrastructure. For most children the ability to innovate and reason in a professional, productive context must be taught, or at least fostered. As primary schooling offers most Africans the only opportunity for formal education, innovation and problem-solving might fruitfully be included in the primary school program.

The proposal is not that students be given vocational training in primary school, that they be diverted from secondary school, or that the academic component of primary school be weakened. Rather I suggest that the basic skills, knowledge and attitudes necessary for success in the productive sector be included in the primary school program. In light of the realities of employment, education and development, Africa (and likely the rest of the world) needs individuals who can think creatively and act independently more than a populace expecting to march obediently along the school to civil service path. The formal education system now clearly favors the latter. Its poor performance clearly demonstrates a need for change. ♦

This article is based on a longer article being prepared for publication. Joshua Muskin is a research associate at the Learning Systems Institute, Florida State University, Tallahassee, FL 32303, USA.

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Developing and Utilizing Human Resources in East Asia

by Jon Quah

...a country's development performance turns largely on its ability to properly allocate, upgrade and manage its human resources (Ozgediz, 1983: p. 76).

In classical models, economic development depended primarily on the exploitation of physical resources. Lacking natural resources, Japan, Singapore, South Korea and Taiwan have been forced to develop a new strategy, relying on human resources as the engine of economic growth. This strategy has four components.

First, all four countries have invested heavily in human resources. Governments have led the way by making formal basic education for all a top development priority. As a result, universal primary enrollment was achieved early on. More recently, secondary and tertiary enrollment ratios have grown rapidly, as shown in Table 1. A high proportion of GNP has been devoted to education, as shown in Table 2, and this proportion has grown along with tremendous growth in per capita GNP itself.

Second, the four countries have devoted considerable resources to continually upgrading their workforces. Much of Japan's economic success can be attributed to its education and training systems. Japan's per capita expenditure on formal off-the-job training is 4 times that of the USA and 10 times that of Germany. Continuous training in Japan has two aspects — "every employee, very often up to and including top managers, keeps on training as a regular part of his job until he

Country	Secondary School Enrolment (as % of Age Cohort)		Tertiary Enrolment (as % of Age Cohort)	
	1965	1986	1965	1986
Japan	82	96	13	30
Taiwan	55	99	4	25
Singapore	45	71	10	12
South Korea	35	94	6	32

Country	1960		1986	
	Education as % of GNP	GNP	Education as % of GNP	GNP
Japan	4.0	\$610	5.0	\$12,838
Singapore	2.8	490	5.2	7,411
South Korea	2.0	110	4.9	2,372
Taiwan	2.5	170	4.7	3,580

* Per Capita GNP figures are expressed in current US dollars.
 † Adapted from R. Wade, 1990. *Governing the Market*. Princeton: Princeton University Press (Table 2.1).

retires," and the "employee is, for the most part, trained not only in his job but in all the jobs at his job level, however low or high that level is (Drucker, 1973: p. 134)." Japan's lifetime employment system makes such a training system economically feasible for many firms.

Many scholars believe that South Korea will become the next Asian super economic power after Japan. Korea's commitment to education has resulted in a highly educated population and a system

of over 200 technical colleges and universities which "sets Korea apart from virtually all other developing nations (Porter, 1990: p. 465)." As in Japan, Korean companies invest heavily in training. Law requires large companies to provide employees with training. As a result, all Korean employees receive at least 1 or 2 weeks of training a year.

Singapore has also invested heavily in education and training. The Skills Development Fund was established in 1979 to increase workers' skill levels by providing companies with incentive grants. The fund is financed by a tax on employers with workers earning less than S\$750 a month [US\$1=\$S1.65]. Similar investments in education and training over the last 30 years have given Singapore one of the developing world's highest quality work forces.

A third characteristic of the human resource development strategy is the close linkage between human resource and economic development policies. Economic growth is a major goal of human resource development, but is also necessary to finance education and training programs. These countries' experiences suggest that governments should simultaneously invest in human resources, introduce policies that promote economic growth and take an active role in promoting such growth. Without economic growth, no government can afford to educate and train its people. Without natural resources, sustained economic growth is impossible unless human resources are effectively developed and efficiently utilized.

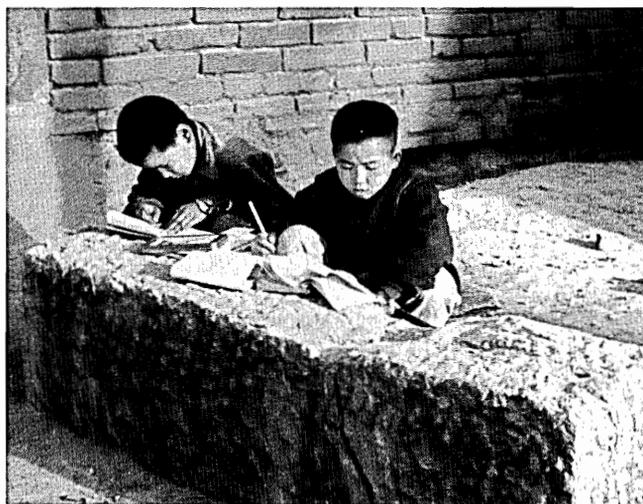


Photo: UNESCO/A. Bailey

A final lesson is the importance of attending to utilization as well as development of human resources. Government has an important role in framing policies in which education and work contribute to each other. For government to play an active, intelligent role, it must be able to attract and keep talented staff. In many cases, public personnel systems need

Without natural resources, sustained economic growth is impossible unless human resources are effectively developed and efficiently utilized.

reform to compete with the private sector. Incentives within the system should be structured so as to reward performance rather than seniority. At the same time, a commitment needs to be made to streamlining civil service.

Corruption is a particularly serious barrier to effective, efficient utilization of human resources. Government must take the lead in eradicating corruption with adequate anti-corruption measures and political commitment. Singapore has minimized corruption by sincerely implementing an anti-corruption strategy that reduces both incentives and opportunities for corruption (Quah, 1989: pp. 841 – 853).

The lessons for countries concerned with improving human resource development and utilization are clear. Governments must encourage and directly educate and train their populations. Governments must commit themselves to economic development, to minimising corruption and to comprehensive reforms in public personnel management. The recipe for success is clear, but whether leaders are willing and able to pay the price of developing and upgrading their human resources remains to be seen. ♦

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Photo: UNICEF/Claudio Elinger

The Challenge of Child Labor

...ironically, one of the main reasons why children work is to be able to afford school. Many Third World educational systems expect students' families to pay some fees, money the poorest families raise by putting their children to work before and after class. Many other children do not attend school because they cannot raise the necessary funds. ... A further inducement for children to work for money is the expanding array of consumer goods — radios, T-shirts, audio tapes, toys — available to them. ... For many Third World families, the grinding burden of poverty has made reliance on their children's economic contribution an essential part of survival.

In itself, the work may not be physically harmful, but today's definition of workplace hazards to children must be broadened to recognize the long-term harm stemming from inattention to a child's mental and social development, which can pose just as great a threat to his or her future as do permanent physical injuries. On a national scale, the damage to children in the workplace undermines a country's social and economic progress far into the future. With economic survival becoming more dependent on brains that brawn, reducing child labour abuse is an important part of national economic development planning, as well as a social welfare concern.

The complex nature of the child labour problem calls for a multifaceted approach worldwide, encompassing not only legislation and enforcement, but also action to help children generate the income they need and to provide working children with relevant education and other services. Governments, with NGO backing, must take a leading role regarding policies, regulations, and information campaigns for this attack on child labour abuse to be effective. ... Government efforts to assure free universal basic education could accommodate working children by instituting more flexible hours in existing schools or by arranging with employers for lesson time in the workplace.

from *Children and Development in the 1990s: A UNICEF Sourcebook* (UNICEF, 1990)

Countries: Some Lessons for the Commonwealth Countries.

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What Role For Government in Vocational Education and Training?

abstracted from *Prospects*

In an increasingly competitive and knowledge-based global economy, vocational and technical education and training (VET) programs are important parts of any country's development strategy. Many countries have invested large amounts in public VET, and donors have funded VET projects for decades. These investments have shown mixed results. In some countries the majority of VET graduates find jobs that use their skills. This is not the case in other countries. Due to the economic significance of VET and the size of public and private investments, it is important to understand the limits and the potential of VET and to assign proper roles to the public and private sectors. In this way countries can capitalize on the strengths rather than the weaknesses of each sector. In 1991 the World Bank issued a VET policy paper that addressed these issues. The paper was based on World Bank-sponsored research, a comprehensive literature review and an extensive consultation process including discussions with policy-makers and VET officials from 53 developing countries. This article outlines the recommendations and conclusions of that paper (See Table 1).

The Key: Linking VET with Demand

VET is the source of skills training for many individuals prior to employment and afterwards on the job. It provides entry level and job advancement skills training leading to higher productivity and earnings. It is delivered by schools, public and private training centers, non-governmental agencies and employers. VET curricula are based on analysis of tasks to be carried out on the job. The effectiveness of such curricula is determined primarily by the extent to which trained persons can use their skills at work. Pre-employment training can yield good returns when there are jobs for graduates, that is, when training is driven by demand.

VET, alone, cannot create jobs. Job creation requires sound macroeconomic policies, government revenue and appropriate consumer and employer incentives. VET is especially poor at solving social problems unrelated to existing or anticipated demand for skills, that is, where it is supply-driven.

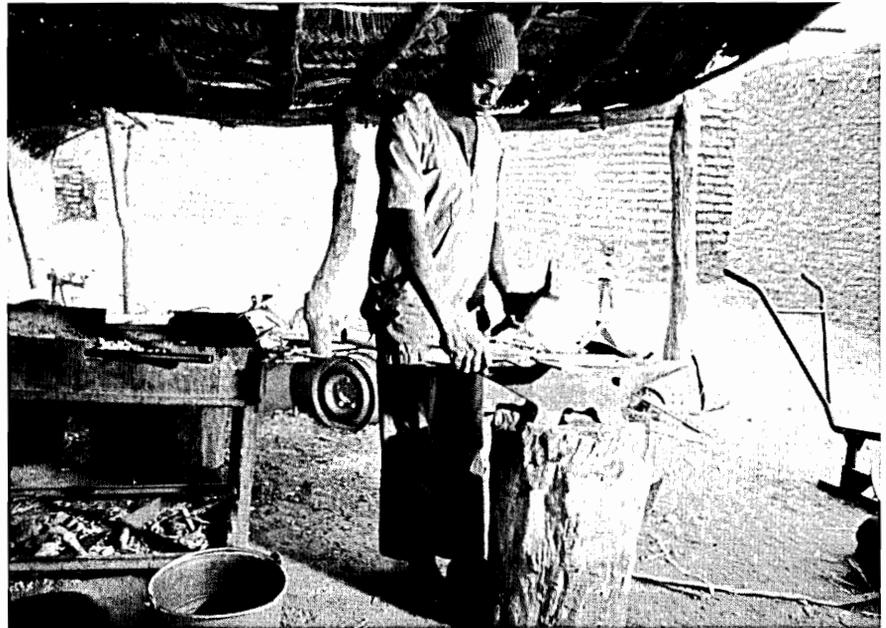


Photo: J. Van Acker/FAO

Priorities for Public Policy

To improve the productivity and flexibility of the workforce, the first priority for public policy is to strengthen primary and general secondary education. Improving the quality of education – especially in science, mathematics and language – is an enormous challenge to most countries. Meeting that challenge would make a significant contribution to

As for specific skills, however, a substantial body of research has found vocational schooling to be less cost-effective than on-the-job training. Vocational schooling is more expensive than general education. The returns to vocational education do not justify its extra expense unless there is a close match between training and occupational demand. Diversified secondary schools, whose curriculum incorporates both vocational and academic elements, are quite costly. Their graduates have no labor market advantage over graduates.

**The government should
allow private markets to
function where they work
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economic and social development. General education directly increases worker mobility and productivity. Vocational training is more effective when trainees have strong literacy, numeracy and problem-solving skills. Basic education is especially important for socially and economically disadvantaged groups. Denial of basic education hinders their ability to take advantage of opportunities for training and income generation.

Often a redefinition of the government's role in financing and delivering VET is needed. The government should allow private markets to function where they work well in meeting skill needs. Government should assume an active role where markets are distorted or fail. This role will differ from country to country and within each country over time. Determining the exact role in each country will require economic analysis focusing on the presence or absence of market failures and imperfections, private training capacity and the need for social equity.

Yet while the type of public intervention will vary, it does seem clear that there will be a continuing need for government

in financing and delivering VET. The clearest case for government involvement is that of externalities. Training has positive externalities where the benefits to society exceed those to trainees and employers. An example is a critical skill that if not developed would hinder development of a new industry and creation of employment.

Another case for justifiable government intervention is where economic and social policies distort incentives for individual and employer investments in training. The preferred solution is to develop policies to remove the market distortion. If this is not politically feasible, a "second-best" solution is for government to subsidize training. In neither case – externalities or distorted incentives – is it necessary for government to deliver training.

In countries where the market sector is undeveloped, where enterprises are small and where few trade associations exist, there may be an insufficient enterprise base for structured on-the-job training, particularly apprenticeship training. In low-income countries, lack of know-how and capital may prevent emergence of specialized private training institutions. In the former command economies a private sector may not yet have developed. Such a lack of private training capacity calls for government delivery of VET. This should be viewed, however, as a transitional role with the government simultaneously encouraging the development of private training capacity. Where government does provide training, it is important to pay attention to the quality of such programs. As in much public service provision, isolation from market forces is the main threat to effectiveness and efficiency in public training.

A final reason for government intervention in VET is to improve social equity. There is an important role for government in directing training subsidies to less privileged students. Often, however, the heaviest public subsidies are given to secondary and tertiary students, most of whom are from privileged backgrounds.

Encouraging Private Sector Training

In most cases, private training capacity should be expanded. Publicly financed and delivered VET is a small part of most nations' skills training, the vast majority of training programs being provided by

Table 1. Themes of the Policy Paper

1. Government's primary contribution to vocational education and training (VET) is in provision of strong basic education to all children.
2. Economically sound management of the economy is important for successful VET. Policies must create incentives for investment and job creation.
3. VET works best when driven by demand. Supply-driven VET is much less effective.
4. Enterprise-based training is preferable for training in specific skills because it is demand-driven and cost-effective.

Table 2. Recommended Policies for Finance and Delivery of VET

Reason for State Intervention	Form of State Intervention		
	Finance	Delivery	Complementary Policies (not always politically feasible)
Externalities	+++	---	Deal with market imperfection Develop private training capacity
Market Distortions	+	---	
Weak Private Training Capacity	---	+++	
Equity	+	---	

Key: +++ Preferred policy approach
 + Acceptable "second best" approach
 --- Policy not justified on economic grounds

private and public employers. Small enterprises typically provide training through formal and informal apprenticeships. The issue of matching training supply and demand does not arise as firms train only for needed skills. Accountability for the results of training is rapid and firms will train as efficiently as possible in order to minimize costs.

The extent and quality of private employer training is determined fundamentally by the rate of economic growth and incentives for investment in worker skills. Employer training is often limited by two factors. Poorly educated labor increases the costs of training. Small firms tend to train less and less formally than larger firms. Small firms have particular difficulties in financing training.

National Training Authorities

Education and training place different demands on institutions, instructors and administrators. Both are essential to productivity, yet they are difficult to administer within the same institutional framework. One way is to create a national training authority (NTA). In addition to managing training institutions, NTAs can play an important planning role, providing professional services, organizing temporary training systems in response to emerging needs and developing private training capacity.

The Role of Donors

There are four ways that donors can assist countries in meeting skill needs. Donors can provide governments with technical assistance in developing comprehensive training development strategies. In their assistance programs, donors can give high priority to primary and compensatory basic education programs, to improving access for girls to and quality in the core subjects of language, mathematics and science. Donors can work together to improve the coordination of aid projects so that projects contribute to a comprehensive education and training strategy rather than forming a patchwork of competing projects. Finally, donors should think in terms of long-term partnerships with countries. Assistance in reforming training policies and systems is most effectively provided in partnerships lasting a decade or more. ♦

This article is abstracted from Arvil Adams, John Middleton and Adrian Ziderman, "The World Bank's Policy Paper on Vocational and Technical Education and Training," Prospects XXII:2 (82) 1992. Arvil Adams is Senior Economist at the World Bank. John Middleton is Senior Evaluation Officer with the World Bank in New Delhi. Adrian Ziderman is Professor of Economics at Bar Ilan University, Ramat Gan, Israel.

Legal Reform to Complement Educational Investment

by Carolyn Winter

Women's education has important social and economic returns. Female education is strongly linked to delayed childbirth, lower fertility and infant mortality rates, and higher educational attainment in the next generation. Women who have received more education are more likely to work in the formal labor market. The resulting higher wages and productivity have immediate benefits for households and long-term economic benefits for the nation.

Both out of concern over gender inequalities and in recognition of these social and economic returns, Latin American countries have introduced general and gender-specific education policies to increase girls' school enrollment and retention. As a result, over 50% of secondary school age girls are now in school. Girls are now more likely to enroll in secondary school than boys. Girls account for half of all vocational students and are well represented in secondary technical programs and higher education. Only in Chile, Ecuador and Mexico does female enrollment in higher education fall significantly below that of males.

Economic Returns Are Not Fully Captured

The social returns to the substantial budgets invested in regular and targeted girls education should be captured in improved social indicators such as better child nutrition. Economic returns should be captured in higher female labor force participation and increased earnings for women. Hence, both earnings and labor participation rates should have come to resemble men's. This has not happened. Women's participation rates have increased only modestly, and wage gaps have narrowed only slightly.

Discrimination, as a recent study shows, only partly explains these gaps. Labor codes are a contributing factor in many Latin American countries, for they often limit or regulate women's employment. Women's labor market participation is affected by three types of labor laws, each with different premises and effects:

- Laws limiting women's employment to certain occupations or activities. Such laws often prohibit women's employment in mining and with "dangerous"

machines and chemicals, restrict work on night shifts and may broadly prohibit "morally hazardous" work.

- Laws providing special protections and benefits to women because of childbearing. These laws typically provide maternity leave, cash stipends during maternity leave, nursing breaks during the work day and extended rest periods for pregnant and lactating women. Such laws may also require employers to fully subsidize child care.
- Laws for equal pay and employment opportunities which, in Latin America, require equal pay only for workers performing precisely the same job.

...laws providing special benefits to women may raise the price of female labor relative to male.

Unintended Effects of Labor Laws

Rather than improving women's pay and employment opportunities, these laws often limit women's work opportunities and create incentives for employers to discriminate against women workers. This is because laws providing special benefits to women may raise the price of female labor relative to male. Where required to fund benefits such as nursing breaks and child care centers and stipends during maternity leave, employers associate female labor with higher labor costs. To keep wage costs low and maximize profits, employers recruit male workers whenever possible or reduce female wages to compensate for the added costs.

Employers may also hire women only on a temporary basis. Unlike contract or permanent workers, casual workers are not covered by the labor code and do not qualify for maternity benefits. Such actions profoundly affect women. Employers invest less on training temporary workers. Temporary workers do not follow regular career paths and do not qualify for pension benefits or social security.

Several countries require employers to provide child care facilities if they employ

more than a certain number (typically 19) of female workers. Smaller firms avoid these costs by keeping the number of female workers below 20. The effect is to reduce women's employment opportunities. Laws restricting women's employment in certain types of work may exclude women from positions with more flexible hours and positions offering overtime and danger pay. Night shifts, for instance, may be especially attractive to women caring for children during the day.

Legal Reform to Capture Economic Returns

These laws often disadvantage women and increase gender inequalities in the labor market. Ultimately they reduce the economic returns to education. Both the individual and country lose productivity and earnings. Legal reform is necessary:

- Laws prohibiting or restricting women's employment in certain occupations should be revoked. Where public opinion requires that the law be maintained, the groups to which it applies should be defined as narrowly as possible.
- Efforts should be made to minimize differences in the cost of male and female labor to employers. Public funding or social security schemes, not employers, should finance maternity benefits and child care.
- To the extent possible, childbirth should be treated as a responsibility of both sexes. Maternity leave provisions should be revised so that women are not required to remain off work for the entire maternity leave and so that parents can share maternity leave. This will reduce employers' tendency to associate the costs of family leave with women.
- Few Latin American women know their legal rights. It is important to improve women's knowledge and access to effective legal advice. ♦

This paper is draws on an ongoing study of labor laws and women's employment in Latin America. Carolyn Winter is a Human Resources Specialist with the World Bank. She can be contacted at ESP, World Bank, 1818 H Street NW, Washington DC 20433.

Public Investment in Women's Schooling

by T. Paul Schultz

Women's education is as good or better an investment than men's education. It is true that in many cases women's wages are lower than those of men. However, for investment purposes the relevant comparison is the ratio of income (minus costs) of an educated to a less educated woman. By this "value-added" criterion, women's education remains a good investment.

Several very important non-market returns to education are primarily associated with educating women. Women's education influences the size of their families, their health, longevity and welfare and that of their children. These externalities have social as well as private benefits. *These benefits are not captured by private rates of return analysis but should be taken into account in setting government spending priorities.*

Parents are often less likely to invest in educating their daughters than their sons. Why is this? Private returns to education for women may be lower than for men. Daughters may not contribute as much financially to the parents as sons. For cultural reasons, parents may derive more satisfaction from their sons' economic success than their daughters'. Under these conditions families are unlikely to invest sufficiently in women's education to achieve maximum social welfare. *Thus*

Table 1. Average Ratios and Growth Rates in Ratios of Female to Male Years of Schooling and Public Expenditures per School-Aged Child, 1960s and 1970s

	Ratio of Female to Male		Growth Rate in Ratio of Female to Male (Annual %)	
	Years Enrolled	Public Expenditures	Years Enrolled	Public Expenditures
World (47)	.91	.76	.74	.85
Sub-Saharan Africa (13)	.73	.50	1.60	.70
Latin America (8)	1.03	.83	.07	1.20
East & Southeast Asia (6)	1.00	.86	.81	1.80
South & West Asia (5)	.59	.52	1.50	.45
High Income Countries (5)	1.02	.93	.10	.52

(number of countries)

public intervention is needed to foster more socially efficient patterns of investment.

Despite this, historical analysis shows that public investment in women's education lower than in men's education in every region of the world (see Table 1). Two factors have interacted to compound the problem. First, women have tended to make up smaller proportions of total enrollment at higher levels of education. Second, the higher the level of education, the greater the public expenditure per student. This has been particularly evident in low income countries in Africa and South and West Asia.

the ratio of expenditures on women relative to men was .83, .86 and .93 respectively. In South and West Asia the ratio was .52.

The ratios of female to male enrollments and public expenditures increased in every region. The rate of increase, however, varied substantially across

...public investment in women's education is lower than in men's education in every region of the world.

regions. The slowest rate of increase in female to male expenditures, .45% per year, was in South and West Asia, where the female-male expenditures ratio was lowest. *Because of the high returns to women's education, these low rates of investment suggest poor prospects for future economic and social development.* ♦

This note is based on a longer paper, "Investments in the Schooling and Health of Women and Men: Quantities and Returns." T. Paul Schultz is a professor of Economics at Yale University. He can be reached at the Economic Growth Center, Yale University, PO Box 208269, Yale Station, New Haven, CT 06520-8269.



Photo: Dody Riggs

Both public education expenditures and enrollment ratios are reported for at least five years in 47 countries. For the full sample, women received 91% of the years of education as men but only 76% of the public expenditures. In Africa, women received 73% of the years of schooling but only 50% of the public expenditures. In Latin America, East Asia and high-income countries,

Earnings and Returns to Education in Latin America

based on World Bank Data

Though women's education is a very good investment, women in the formal sector almost always earn less than men. This is illustrated by recent data from Latin American and Caribbean countries. Figures 1 and 2 show results of surveys of education and earnings in 18 Latin American and Caribbean countries.*

Figure 1 shows rates of return to women's education as a proportion of returns to men's education. One is subtracted from the resulting figures so that any number above 0 represents a



Photo: Moll-Druecker

higher rate of return to women's education. Numbers below 0 indicate a higher return to men's education. As can be seen, in 15 of 18 countries, the returns to women's education are higher than to men's.

These returns are not, however, reflected in women's wages as a proportion of men's (minus 1). In none of the 18 countries do women's wages reach parity with men's. In most cases, women earn 20 to 40 percent less. ❖

This material was developed from figures in "Earnings and Education in Latin America: Assessing Priorities for

Figure 1. Ratios of Female to Male Rates of Return to Education, around 1989

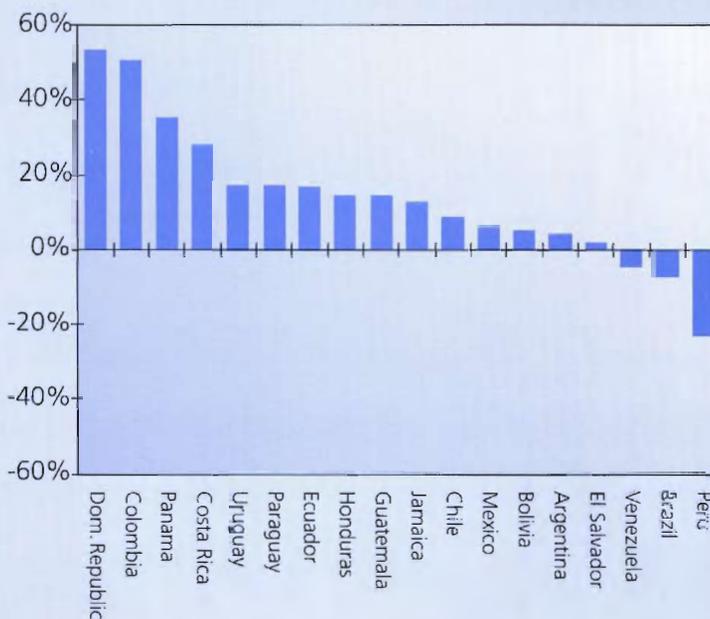
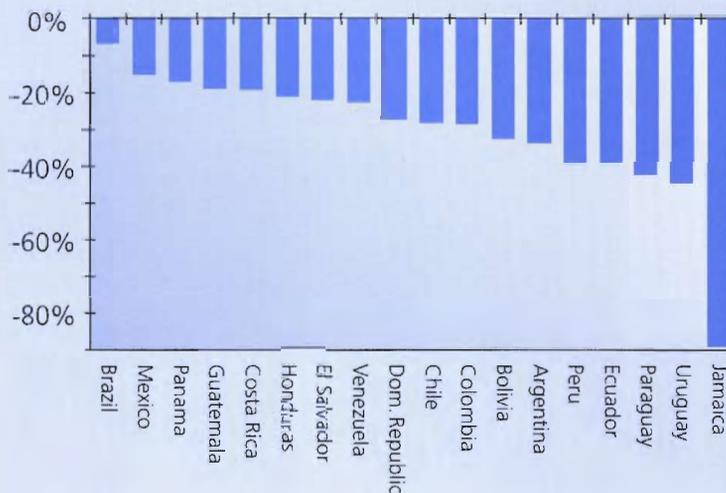


Figure 2. Ratios of Female to Male Wages, around 1989



Schooling Investments" by George Psacharopoulos and Ying Chu Ng (Policy Research Working Papers (WPS1056), Washington DC: World Bank, 1992). George Psacharopoulos is Senior Advisor to the Vice President for Human Resources at the World Bank. Ying Chu Ng is Lecturer Hong Kong Baptist College.

** Figures from Bolivia and Peru are based on urban samples and so are not strictly comparable with other figures. They are included for illustration.*

Workplace Organization for Productivity

by Henry M. Levin

Though education and technology are widely acclaimed as crucial factors in economic growth, there is little shared understanding of the mechanisms and conditions under which they lead to increased productivity. The theoretical and research literatures assign workplace organization a central place in theory of the firm. Yet there is no consensus about which forms of organization make most productive use of education and technical advances. Instead, two distinct and contradictory modes of organization have been proposed, each with different educational implications.

The first mode of organization seeks to increase productivity through control – clear delineation of tasks and authority, close oversight of workers and highly centralized decisionmaking. The second mode works to improve productivity by increasing the participation and discretion of workers in decisions about production. The evidence suggests that the second mode more successfully captures productivity gains from increased education.

The “control” mode derives from theories of the firm. Modern production involves interdependent tasks, carried out by teams of workers, mediated by technology. Individuals avoid work if unobserved and unpunished, so managers are needed to oversee workers. While the productivity of individual workers cannot be observed, management can monitor individual effort, especially if tasks are clearly delineated and routinized. Due to the complex and technical nature of production, top management has the best information on what should be done. Given these assumptions, organizations devote substantial resources to deciding and telling workers what to do and overseeing them to make certain they do it.

The “participatory” mode derives from the organization of production literature. Education has several effects. It improves workers’ proficiency at tasks and increases their access to complex jobs. Education’s greatest contribution, however, is allocative efficiency, the greater ability of educated workers to maximize output by choosing the “right” quantities of inputs given prices and productivities of alternative inputs (Welch, 1970). When facing conditions of “disequilibria,” in which resources are not maximally allocated (Schultz, 1975), education improves workers’ ability to obtain and utilize

information for more efficient production. This allocative efficiency is most sensitive to workplace organization. Realizing its benefits requires organizations that permit workers relative discretion in judgement and behavior.

Choice of organizational mode depends in large part on who is seen to have the best information. “Control”-based organizations assume those in “high” or “central” positions in the organization have the best information about what should be done throughout the organization. “Participatory” organizations see workers as having the best information on some aspects of production. The challenges are to create collaborative management structures, to devise incentives for workers to act in the interests of the organization and to enhance workers’ capacities to use information. A key premise is that positive engagement leads to greater productivity than forced compliance.

There is considerable evidence that workers’ potential allocative efficiency is enhanced by work organizations that create challenges for workers and encourage their participation in decisionmaking. Japanese automobile manufacturers run quite productive plants outside Japan organized around participatory modes of workplace management with workforces of less than optimal education by Japanese standards. Research has documented the positive relationship between worker satisfaction and the autonomy and challenge of work. Workers whose education and skills exceed job requirements tend to be more dissatisfied than workers whose skills and jobs are more closely matched. Job satisfaction is a partial determinant of worker effort. Worker turnover is lower among satisfied workers. Under-utilization of worker capabilities is associated with poor mental and physical health. In several ways, under-utilization of workers’ education costs a great deal.

Tsang (1987) attempted to measure the effects of under-utilization of education directly. He developed an econometric model predicting output for 22 regional telephone system companies in the US. He found that, on average, workers held jobs requiring two years less education than they actually had. Over-education was a statistically significant (negative) predictor of job satisfaction, which was a significant predictor of output, controlling for

differences across companies in labor, capital and material inputs. Tsang found that each year of education under-utilization was associated with a loss of over 8% in output or about US\$5 billion in 1981 in a US\$57 billion industry.

What about technology? Technological advances can be used either to increase or reduce worker discretion. Electronic technologies can be used to enhance workers’ allocative capabilities, for example, by providing data on costs and productive consequences of alternative decisions, by indicating production bottlenecks or quality control issues needing attention. Of course, such uses imply that workers have opportunities and incentives to make allocative decisions. Electronic technologies can also be used to reduce the scope of jobs, to further routinize tasks and displace worker skills and judgement. New technologies provide an unprecedented capacity for centralized monitoring and control of work processes.

Whether technology complements or substitutes for education depends crucially on how production is organized. I believe that potential gains from using technology to increase workers’ allocative functions exceed gains from tighter systems of control. From this perspective, firms organized to provide training opportunities and worker discretion are poised to capture the higher productive capabilities of more educated workers. Conversely, increased education may do little to increase productivity when workers are given little information and discretion. ♦

*Henry Levin is an economist and professor of Education at Stanford University. This article is an updated version of material in several earlier articles including “Improving Productivity through Education and Technology,” in Gerald Burke and Russell W. Rumberger, eds., *The Future Impact of Technology on Work and Education*. London: Falmer Press (1987).*

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Models of Vocational Education and Training

by Claudio de Moura Castro

In most societies a variety of institutions and forms are used to transmit skills and knowledge – formal schools (both academic and vocational), technical institutes, enterprise-based training, formal and informal apprenticeships, etc. Until the 19th century, few students received academic schooling; most youth acquired job skills through various kinds of apprenticeship. Apprenticeship remains an important form of training in some societies. And while apprenticeships have the important advantage of close links to the labor market, the apprenticeship system seriously underemphasizes theory. This lack of theoretical understanding limits workers' ability to adapt to changing labor market conditions and technological innovations.

In an effort to systematically transmit both practical skills and theory, countries have developed different formal work-related education and training institutions. Most such institutions derive from one of a small number of original models. This article outlines five key models that have influenced development of work-related education institutions in other countries.

Technical-Vocational Schools (France)

France's highly-centralized and all-encompassing school system has assumed a prominent role in provision of both academic and vocational-technical preparation. All students receive basic education up to age 13, at which point students are tracked into separate academic, technical, and vocational schools (Figure 1). The defining characteristic of the French approach to work-related education is the simultaneous and rigorous marriage of skills training with academic curricula. Technical schools combine academic study with hands-on training and are more prestigious than vocational schools which offer more specialized training. In both cases, it is theoretically possible, though practically quite difficult, for students to advance to institutions of higher education.

The French model has been adopted in modified form in most former French colonies. Several newly-industrializing countries of Asia and most countries of Eastern Europe also incorporate key elements of the French system. An important difference in Eastern Europe is

that three-fourths of all secondary students are enrolled in technical-vocational schools. Success with the French model depends on a balance between the practical and the academic. The challenge is to avoid either an over-emphasis on practical training at the expense of rigorous academic study or a rigid curriculum isolated from realities of the labor market.

Comprehensive High Schools (United States)

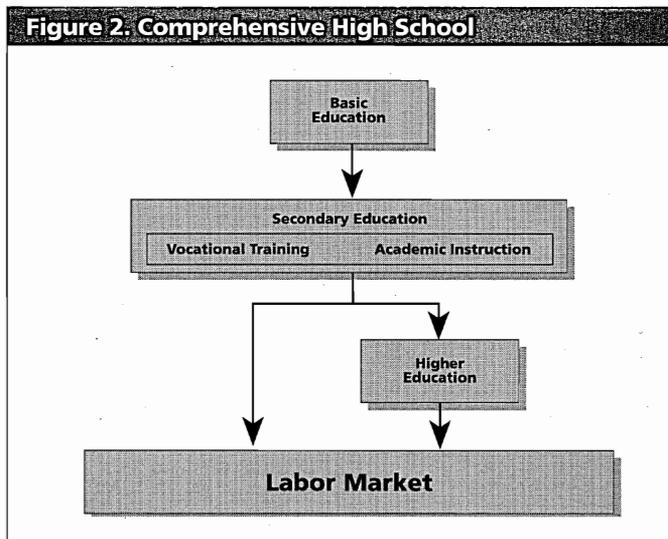
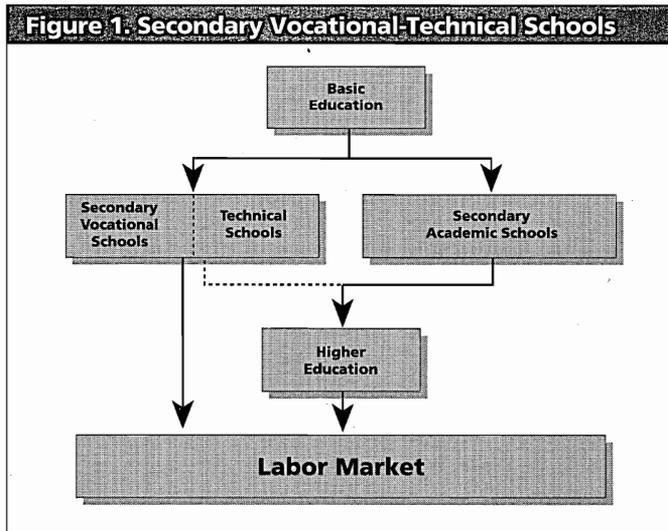
The egalitarian rhetoric of American society, coupled with a strong belief in education as a pathway for mobility and a relatively small status gap between manual and nonmanual labor has led to creation of the American comprehensive high school (see Figure 2). The comprehensive high school is defined by two characteristics: all students are kept in the same school until the end of secondary school, and vocational and academic subjects are available to all students. According, nearly two-thirds of American high school students take one or more vocational courses.

The system has two primary advantages. It provides many options, at least in theory. Students can choose a mixture of academic and vocational preparation. All students can advance to some institution of higher education, whether university or community college. A second advantage is the continuation of social mixing in secondary school.

This advantage diminishes, however, when students of different socio-economic or ethnic groups are tracked within schools or live in different neighborhoods and thus attend different schools. The comprehensive high school model is difficult to transfer to countries where there are large status differences between manual and nonmanual occupations. In such cases, few students or parents choose training in manual skills.

The Dual Apprentice System (Germany)

The apprenticeship training system of Germany, Switzerland and Austria has evolved from the guild system of medieval Europe into the foundation of the present



training system (over 60% of 16-18 year-olds in [former West] Germany served as apprentices). Instead of adding practical subjects to schools as in the French and US systems, the dual system adds academic subjects to on-the-job training (Figure 3). After 10 years of basic education, students who pursue the apprenticeship path choose a job (from over 300 occupations in Switzerland, for example). Apprentices spend 3-4 days per week at their job working under the supervision of a qualified master craftsman. The student spends his or her remaining days at a training center studying technology, languages, math and science. After 2 or 3 years, the student must pass a test to complete the apprenticeship successfully.

In these countries, such training is socially valued, and universities are not the only route to high-level careers. Both academic and vocational training is of high quality and closely related to labor market

needs. The dual system, however, is particularly difficult to transfer to other contexts. It requires that society place high value on manual labor. It also requires quite extensive coordination among public administration, employers and unions.

Vocational Training Centers (Latin America)

Most Latin American countries have developed successful enterprise-based training centers. Initially, these systems were influenced by the dual apprenticeship system. However, the difficulties of coordinating enterprise needs with job placement, curriculum and supervision led to a system of training at vocational centers followed by supervised internships (Figure 4). The training centers are administered separately from academic schools and have close ties with industry. They are financed by a payroll tax of about 1%. This regular source of income gives

the vocational schools financial stability and autonomy from short-term economic downturns and political pressure. At the same time, however, this independence has reduced the system's responsiveness to market changes.

Conclusions

Education and training systems cannot simply be imported into a country and expected to operate as they do in their country of origin. Societies vary in ways that affect the type of training system that is likely to work. In addition, there is a tendency for shortcomings that are manageable in the country of origin to become more serious in other countries.

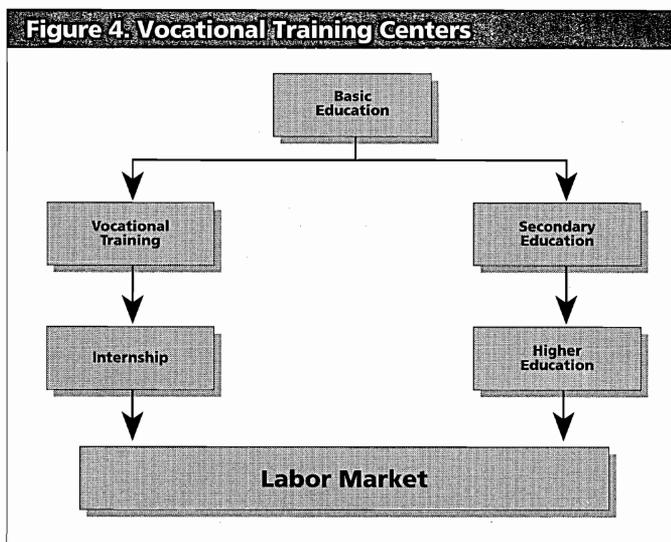
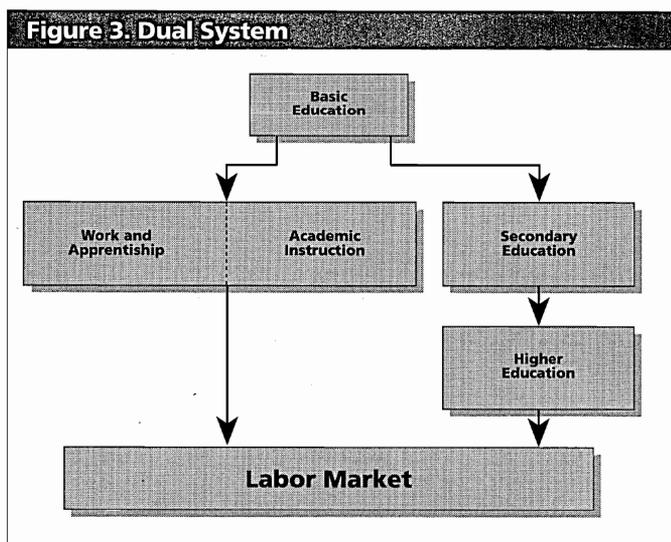
Nations place different values on manual and nonmanual labor. Vocational training is much more difficult where manual labor is considered low status. The monitoring and coordinating capacities of government and links with the labor market also affect the effectiveness of a formal training system. The greater the coordination needs as in the Germanic system, the more capable the coordinator must be. The mobility of labor will determine much of the willingness of enterprises to offer extensive training. A society that values egalitarianism will delay final choices among school and hence career paths. Such a system may camouflage real tracking under a guise of apparent equality of opportunity.

Despite the diversity, common patterns emerge. All models mix education and vocational training. Though schools may not train students directly, the provision of skills is combined in some formal way with school learning. All models provide preparation in both academics and skills. All systems separate academic from vocational instruction, whether in different classrooms, type of schools or institutions. Finally, all systems have been challenged to maintain the elements of successful vocational education – status for vocational training, responsiveness to labor market needs, a rigorous academic program, and a balance between coordination and bureaucracy. ♦

Claudio de Moura Castro is Senior Human Resource Economist at the World Bank. This article was abstracted from a paper Mr. Castro wrote while chief of the Training Policies Branch at the International Labour Organisation.

Enterprise Training (Japan)

The Japanese system is unique in the amount of training provided workers by large companies. Training is treated as a long-term investment in the worker. It continues for the lifetime of the employee and extends beyond the specific, immediate needs of the job. As a result, Japan has trained a highly flexible and committed workforce.



Job Training for School Dropouts

from a report by the Academy for Educational Development

There is concern in the United States that economically-disadvantaged high school dropouts lack the basic education skills to get good jobs or to take advantage of job training programs. Unlike other industrialized countries, the US has no umbrella school-to-work transition program for youth who do not continue education beyond secondary school. Instead, there is a patchwork of local programs dependent on a multitude of funding sources. Some programs are quite innovative, though the scale of their impact is necessarily limited. In recognition of these problems, the School to Work Opportunities Act of 1993 details plans for a school-to-work transition system in the US.

The New York City Department of Employment is one of the country's largest providers of job-related training. In 1988 it began the Youth Employment Program Assistance Project (YEPAP) to experiment with ways to increase the educational value of youth employment training. The Academy for Educational Development (AED) was asked to assist; the resulting project involved 4 youth employment programs from 1989-91.

Students who enrolled in these programs were high school dropouts from low-income families. Most demonstrated far lower levels of basic skills than their years of schooling would indicate. They wanted to get jobs but were intimidated by the job-seeking process.

Recasting the Mission

AED proposed that the narrow job training mission of the programs be recast. It urged that youth employment programs be seen first as educational interventions; that basic skills be interwoven with vocational instruction; and that the curriculum and all instruction be given a real-life context through contact with materials and problems from the workplace. The fundamental realization of the project was that job-training programs were major interventions in students' lives. Even successfully teaching specific job-related skills required going far beyond the skills themselves. In previous programs, this broader mission and the need to develop the critical thinking and social skills required in higher-level jobs had been missed by focusing narrowly on imparting technical skills for low-paid, entry-level work.

Four principles framed the project's activities:

1. **All real learning requires higher-order thinking skills.** Tasks should not be artificially ordered from simple to more complex. Real work requires simultaneous and complex levels of thinking, judgment and decisionmaking.
2. **Skills should be taught in meaningful contexts.** Students learn more when skills are taught in the context of meaningful and useful subject matter. Skills taught by rote or presented abstractly neither prepare young people for the demands of life nor maintain their interest in learning.
3. **Learning should build on prior knowledge and experience.** Students are not empty cups into which knowledge is poured. They come to school with experiences and complex ideas about the world. Teachers must begin where students are, respecting and building on the experiences and ideas students bring. Doing this requires interest, love, careful attention and ongoing assessment of students' understanding and development. The teacher should act much like a coach with an athlete.
4. **Learning is a social activity.** Learning in workplaces, families and communities involves social interaction, exchange of ideas, learning from others, building on group experience, learning to accept criticism and negotiate with others. For disadvantaged youths and maybe everyone else, education must take place through relationships.

Changing Organizational Culture

Along with upgrading the training itself, it was necessary to intervene in the culture and practices of the programs themselves to ensure continued growth and meeting of students' needs. The most critical organizational change was simple, setting aside time for staff to meet to reflect on previous changes and plan for the future. YEPAP convened many such meetings, including technical assistance



Photo: Bruce Reedy

workshops, on-site technical assistance, monthly staff meetings, program directors meetings, and technical assistance workshops for other youth employment programs in the city.

Results were most significant in terms of changes in teachers' outlook. Three of the four programs redirected their mission from technical job-training to students' learning needs. Youth were more successful in getting and keeping jobs. YEPAP enhanced program effectiveness by presenting new ideas and information, advocating for programs and helping them become models for other programs. Program staff gained an expanded view of students' potential. Staff learned to develop curricula that taught thinking and social skills needed in the workplace. Program directors became more skillful at promoting organizational change. Programs began to remember, to learn from experience and from one another. ♦

This material is based on Learning Work: Breaking the Mold in Youth Employment Programs by Alexandra Weinbaum, Vernay Mitchell and Ruth Weinstock, Washington DC: Academy for Educational Development, 1992. Interested readers should contact Ivan Charner, National Institute for Work and Learning, Academy for Educational Development, 1255 23rd St NW, Washington DC 20037, for information on this and related school-to-work publications, including "School Reform and Youth Transition: Review and Annotated Bibliography." and "Challenging Our Communities: Purposeful Action for Youth Transition from School to Work."

Basic Education and Training for Disadvantaged Youth in Kenya

Undugu Society of Kenya

In 1991, an estimated 327,000 Kenyan children of primary school age were not enrolled in school. In urban areas most of these children come from slums and broken homes. Nairobi alone has an estimated 100,000 such children. In 1978 the Undugu Society of Kenya began running informal schools in the slums to reach these disadvantaged youth. Using a curriculum called the 'Non-Formal Youth Education Program,' the program seeks to equip out-of-school youth with knowledge, skills and attitudes necessary to live more productive lives. As an article in a Kenyan newspaper said, "The basic philosophy of the program is: Why not give slum children a chance? (Mutahi, 1990)" The objectives of the program are to:

1. Rehabilitate and offer literacy, numeracy and business skills to street children above the age of 12;
2. Create awareness among relevant government departments and NGOs about the need for a suitable curriculum for these disadvantaged youth;
3. Offer vocational training in sheetmetal, carpentry and tailoring;
4. Prepare students for further informal sector training as apprentices.

The Undugu Society of Kenya was founded in 1973 by Father Arnold Grol, a Dutch missionary who wanted to help children he found roaming the streets of Nairobi. In addition to its education programs, the Undugu Society has become involved in other aspects of community development – low-cost housing, agriculture and women's issues.

Currently, the Undugu Society operates four schools in Nairobi's slums, enrolling 581 students, roughly half female and half male. Most students have attended some school and subsequently dropped out. Typical slum households are made up of 5-8 children and headed by a single parent. Students often have to contribute to the household income by begging or collecting waste materials to sell to recyclers.

The basic education program has three phases of one year each. Phase 1 covers the first three years of primary school, Phase 2

the next three years and Phase 3 the last two years. After Phase 3 about 80% of the students spend a year in the basic skills vocational program during which time they take three-month courses in sheet-metal, carpentry and tailoring. Students learn to handle tools and gain confidence, skill and a sense of responsibility in their work. At the end of the basic skills program students are encouraged to seek further training as apprentices. Students are expected to start their own businesses or find employment as artisans.

Teachers attempt to individualize the program. Students with special skills or interests are encouraged to develop their talents. Students with special problems are given counselling, usually by the teachers. If the students' needs are beyond the capacity of the teacher, a social worker is called in. While the programs' principal goal is to prepare students for training and work in the informal sector, students who seek entry into the formal education

...providing youth with academic and vocational skills while treating them with respect

system are encouraged to do so. This is usually possible for outstanding students who join the 5th or 6th year of formal school after finishing Phase 3 of the basic education program.

In addition to a shorter educational cycle, the basic education program differs from the formal school system in making no demands of inputs such as uniforms that are not directly needed for learning. Most learning materials are acquired from markets within easy reach of the schools. Students are encouraged to collect learning materials from their homes and surrounding areas when possible, particularly for art and agriculture classes.

The Kenyan Government has approved the basic education curriculum as an acceptable non-formal alternative to public schools. In addition, the skills training program has distinguished itself by taking half the time of a village polytechnic to



Photo: David Blumenkrantz

train an apprentice to pass the lowest government trade test. Funding for the programs comes primarily from the Ministry of Education, which pays teacher salaries, and from Kindemothilfe, a European donor agency.

In addition to positive effects on children's self-esteem and confidence, the two programs have provided basic education to nearly 4000 children and vocational skills to over 2000. The programs laid the foundation for the Undugu Society's entrepreneurship promotion initiatives which have established 106 businesses over the past five years. Some graduates have earned enough money to open their own shops, build homes or assist their parents in moving out of the slum.

The Undugu Society of Kenya's Basic Education and Basic Skills programs teach an audience of youth out of reach of the formal school system. By providing youth with academic and vocational skills while treating them with respect, Undugu gives students hope and the chance to build productive lives. ♦

The Undugu Society of Kenya can be reached at PO Box 40417, Nairobi, Kenya (TEL 552211/FAX 545888).

References:

Mutahi, W., December 1990. "Undugu Offers Hope to City Slum Children," *Daily Nation*. Nairobi.

Using Existing Data to Think About Education and Work Policies

by James Cobbe

Regularly collected data can yield more information than appears in many government publications. The following simple example from Indonesia suggests the kinds of questions a policymaker able to use an electronic spreadsheet could pose. It is important to note here that these preliminary results require further investigation for policy use. Still, they raise questions about the curriculum and linkages between education and labor force needs.

Discussions of education and work policies in Indonesia have been based on two assumptions that my analysis suggests may be misleading. First, it is assumed that (most) secondary school graduates will get wage employment, that is "jobs." Second, it is assumed that industrial development is the key element in Indonesia's economic development strategy. Applied to education, these assumptions imply that a major task of the school system is to prepare graduates for wage sector employment in industry. Partially to support this, the government seeks to extend universal education through SMPT (junior secondary school). To examine these assumptions in light of empirical realities, I analyzed labor force survey data from 1986 to 1990 of workers

under age 30 by age, gender and location of residence, by education and sector of employment and by employment status. Here I focus on junior secondary school graduates.

Fact 1. Most workers are not wage earners

As shown in Figure 1, almost 3/4 of Indonesia's young workers live in rural areas. Yet, as shown in Table 1, far fewer than half of all junior secondary school graduates who work in rural areas have "jobs" in the sense of wage employment. (The rest work in household and informal production.) Only in urban areas do the majority of young junior secondary school graduates work as wage employees. Moreover, there was no real percentage increase in junior secondary school graduates working as wage employees between 1986 and 1990.

Fact 2. Industry employs a small proportion of workers.

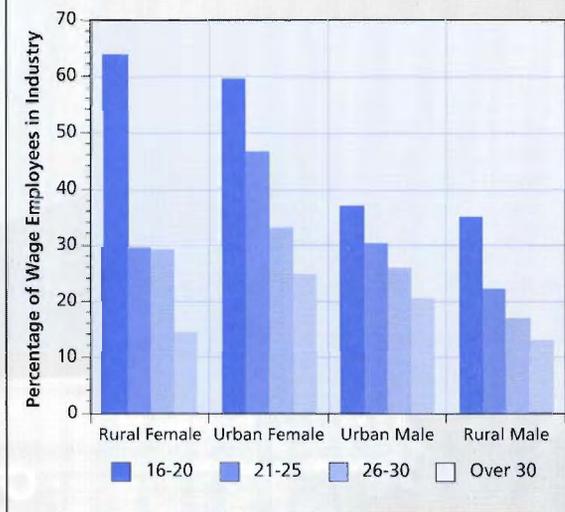
As shown in Figure 2, industry employs a majority of wage earners only among females aged 16-25. The majority of wage employees in all other categories work outside of industry.

Implications

Together Figures 1 and Table 1 suggest that large numbers of junior secondary school graduates will not get wage employment, but instead will have to work as self-employed or family workers. The school system will serve these young people well only if it improves their earning power in such labor market roles.

Figure 2 points to labor utilization problems. Notice the rapid decline with age of the proportion of employees working in industry. This pattern is consistent with rapid growth in industry and with conventional wisdom – that educated workers prefer non-industrial to industrial work but prefer an industrial job to no job at all. Thus workers take industrial jobs but leave for other sectors as soon as possible.

Figure 2. Percentage of Wage Employees Employed in Industry by Age Group (Junior Secondary School Graduates, 1990)



This evidence is also consistent with critiques of industrial labor policies that employers hire workers young and work them hard but provide little encouragement to stay – few wage increases with seniority, little training, few internal promotions. Such labor policies lower short-term costs, but do not bode well for long-term productivity and acquisition of skills on the job.

These data lead me to three conclusions. 1.) Schools should give more attention to the educational needs of rural and informal sector workers, where most graduates work. 2.) It is not surprising that junior secondary enrollment rates are levelling off. Most rural junior secondary graduates are already self-employed or unpaid family workers, and such work requires little schooling. 3.) Stressing manufacturing needs in educational policy may not promote continued growth of productivity if low-wage policies drive out educated workers. ♦

James Cobbe is on the Economics faculty of Florida State University. This article is based on "Labor Markets and Education for Indonesians up to 30 Years Old," prepared for IEES (Improving the Efficiency of Education Systems Project), LSI Florida State University, Tallahassee, FL 32306.

Figure 1. Percentage Distribution of Working Indonesians Aged 15-29, All Education Levels, 1990

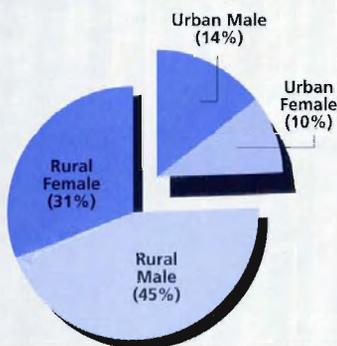


Table 1. Percentage of Junior Secondary School Graduates Working as Wage Employees

	1986	1990
Urban Male	61	61
Urban Female	53	56
Rural Male	29	25
Rural Female	18	14

CLOSING THOUGHTS

"The 'knowledge content' of most goods and services is rising — putting a premium on people who are able to recognize and solve problems. The price of a new pharmaceutical drug mostly reflects research, development, legal and marketing skills. The price of a new computer goes mostly to software development."

Robert Reich

Maintaining a Coherent Society

"... Since knowledge will be the central element of the new paradigm of production, educational change will become a fundamental factor for developing the qualities of innovation and creativity, together with integration and solidarity, which are key aspects both for the exercise of modern citizenship and for attaining a high level of competitiveness."

ECLAC-UNESCO

Education and Knowledge: Basic Pillars of Changing Production Patterns with Social Equity

"The most important economic development of our lifetime has been the rise of a new system for creating wealth, based not longer on muscle but on mind."

Alvin Toffler

Power Shift – Power, Wealth, and Violence at the Edge of the 21st Century

"Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education."

Mark Twain

Pudd'nhead Wilson

"I want a teacher who will lift these children up, who will let them run as fast as they can without restricting them. I want a teacher who will not be stuck in thinking that she has to withhold children because the syllabus says this. No! The syllabus is not the restrainer of the teacher, it only restrains those teachers who are not smart. It's really true. If the child is smart, give her what she deserves, let the child run at her own speed. I am talking about a teacher who will not restrain the reins, but the one who will leave the horse to jump and bounce and eat wherever it wants, for as long as it does not go into the ditch."

South African principal

interviewed by Momathemba Seme
Doctoral Dissertation, Harvard University, 1993

"... India need not wait until income levels of the poor have risen, population growth rates have slowed, employers have need for a more skilled labor force, or government has greater resources. Indeed, such changes in the country's economic and demographic conditions would not result in the voluntary end of child labor and in universal primary-school education. The experiences of other countries suggest that it is within the power of the Indian government to make education compulsory. Otherwise, child labor will not be ended and literacy will not become universal."

Myron Weiner

The Child and State in India: Child Labor and Education Policy in Comparative Perspective

ADDITIONAL READING

In addition to the references already noted, interested readers may wish to refer to the following:

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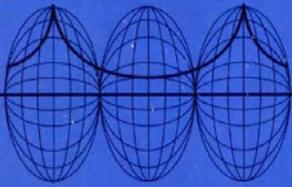
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